



NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

What we heard about the draft transportation planning framework

2020-21

Table of contents

1. Background	3
2. Summary of activities up to 2020	4
3. Summary of findings	6
4. Feedback on the draft framework	8
5. NWMO reflections on revisions to the draft framework	14
6. Continuing dialogue and next steps	19

1. Background

The safe and secure transportation of used nuclear fuel is an important component of Adaptive Phased Management (APM), Canada's plan for the long-term management of used nuclear fuel. Transportation planning that considers the safe and socially acceptable transportation of used nuclear fuel is a key factor in the selection of a preferred repository site and as transportation planning continues thereafter.

Although the transportation of used nuclear fuel to a repository site is not expected to begin before 2040, it is an area of interest for communities, interested individuals and groups. Since 2010, the communities involved in the site selection process have been keenly interested in understanding transportation as integral to exploring the APM Project. Throughout engagement with these communities, they have expressed a strong sense of responsibility to all Canadians and future generations to have answers to key questions and concerns. As the NWMO expands engagement to include neighbouring communities, and other interested individuals and groups, we are learning about the questions that need to be addressed and the priorities, objectives and processes needed to guide transportation planning.

Since 2014, the NWMO has annually published a rolling summary of the ongoing conversations about this important topic. In 2020, the NWMO released *Moving forward together: An invitation to review a draft planning framework for the transportation of used nuclear fuel* – our draft transportation planning framework. This report is a special issue of *What we heard* and documents the key findings of engagement on the draft framework.

2. Summary of activities up to 2020

To date, the NWMO has engaged thousands of Canadians and Indigenous peoples to hear their comments, questions, and concerns, and to provide information on transportation topics. This is done as part of ongoing learning and engagement on the project, the advancement of the site selection process, and more recently, a focused dialogue on the development of a draft transportation planning framework.

Key activities include presentations, briefings, open houses, workshops, focus groups, surveys, interjurisdictional working group meetings, technical tours at the NWMO's proof test facility in Oakville, used fuel dry storage facility tours, and a presence and/or presentations at key First Nation, Métis and municipal conferences.

As a complement to ongoing engagement, public attitude research and First Nation and Métis dialogue sessions have been conducted to further understand principles, values and objectives to ground future transportation planning.

The sections below describe the NWMO's transportation engagement program leading up to and including the release of the draft framework.

2.1 Understanding the common ground (up to 2016)

Starting in 2010, 22 communities volunteered to learn about becoming a host community for a deep geological repository as part of Canada's plan. From very early in the site selection process, these communities had questions about transportation. Therefore, engagement on transportation was focused on understanding and answering common key questions that were raised by siting communities. After several years of engagement, the NWMO developed and published two documents with a goal of answering some of those preliminary questions, including the *Safe and Secure Transportation of Canada's Used Nuclear Fuel* brochure and corresponding *Questions and Answers* brochure in 2015.

2.2 Developing the draft framework (2016-19)

In 2016, the dialogue on transportation advanced by asking siting communities and interested individuals questions about transportation planning that would help the NWMO to understand what a socially acceptable transportation plan could look like. Those questions were inspired by dialogue with siting communities and supported by the publication of a Transportation Discussion Document. The document was designed to explore areas of interest being raised by communities using five key questions. The questions were designed to stimulate dialogue and invite people to add to them through the conversation.

The discussion document was published on the NWMO website, and has been shared with municipalities, First Nation and Métis communities and organizations, and first responders during events such as conferences, trade shows, open houses, community liaison committees, community briefings and presentations, and tours of the Oakville proof test facility or interim storage facilities.

Discussion questions

1. What basic requirements or factors should form the starting foundation for the APM transportation plan?
2. Which objectives, principles and key questions should guide development of an APM transportation plan?
3. How can we ensure the design and implementation of the APM transportation plan is sufficiently inclusive to ensure good decisions are made?
4. What information will we need from technical specialists to develop the plan and support decision-making?
5. What factors should be considered in future decisions about modes and routes?

In 2018, a short pamphlet was developed to further stimulate conversation about transportation planning through summarizing key themes emerging from conversations to date. This pamphlet, titled *Working together to develop a transportation planning framework*, became part of the package of material that is shared in engagement activities to encourage further discussion.

The suite of information materials that have supported this dialogue include:

- » Safe and Secure Transportation of Canada's Used Nuclear Fuel (2015);
- » Safe and Secure Transportation of Canada's Used Nuclear Fuel: Questions and Answers (2015);
- » Planning Transportation for Adaptive Phased Management: Discussion Document (and accompanying questionnaire) (2016); and
- » Working together to develop a transportation planning framework: What we are hearing (2018).

Presentations that summarized these materials were also prepared and delivered. Depending on the audience and its interests, these presentations described the NWMO's transportation program and/or reported back to communities on what was heard through our engagement and dialogue. They also stimulated further conversation.

Complementary to ongoing engagement, public attitude research and First Nation and Métis dialogue sessions were conducted between 2017 and 2019. The purpose was to further understand principles, values and objectives to ground future transportation planning. These sessions were facilitated by a third party. The focus of this work was to complement ongoing dialogue activities and to ensure that the NWMO was beginning to involve and hear from a broad cross-section of Canadians and Indigenous peoples.

2.3 Engaging on the draft framework (2020-21)

Building on a wealth of shared knowledge from years of conversation, a framework for transportation planning appears to be emerging that reflects a common ground of principles, objectives and process considerations. In this draft framework document, the NWMO outlines what we have heard about the key elements of a framework to guide transportation planning, and what this means in terms of a process for moving forward. This framework was published as a draft for discussion, to ensure the NWMO has listened well, and that the framework is reflective of people's priorities and values. The NWMO sought feedback on this document from August 2020 to August 2021.

Several tools and techniques were used to solicit feedback on the draft framework, including an online survey (open to all through the NWMO's website and promoted through social media), a general population survey (n=1,001), presence at virtual conferences and trade shows, workshops (third-party facilitated, in-person and virtual), briefings to municipal and Indigenous organizations, virtual and in-person open houses, and one-on-one interviews. A full listing of activities can be found in Appendix B.

2.4 Commitment to ongoing dialogue (2021+)

The transportation framework sets the stage for the development of socially acceptable transportation planning for the next 20 years. The framework will be a living document to be updated regularly to ensure that the priorities, objectives and principles still resonate with people as planning unfolds. On a triennial basis, these elements of the framework will be revisited and updated based on feedback from communities and interested individuals and groups.

3. Summary of findings

The draft transportation planning framework was based on the following key findings:

- » Safety of people, including workers, staff transporting the used fuel and the general public along the route must be a primary consideration.
- » We must have strong security plans and procedures in place to ensure shipments are not at risk by terrorism or theft.
- » Emergency response plans must be developed and in place in case of emergencies along transportation routes. First responders and other emergency response personnel must be appropriately equipped and supported.
- » Best available science must be used in making decisions about transportation planning. The plan must also be informed by local and Indigenous Knowledge.
- » We must consider, and minimize or eliminate, the impacts of transportation on the environment, including drinking water, watersheds and other environmentally sensitive areas.
- » The transportation program must consider carbon footprint.
- » Future generations should not be responsible for project costs. Costs associated with the transportation of used nuclear fuel must be fully covered by the waste producers.
- » Independent oversight is important. As part of that, jurisdictional roles, responsibilities and authorities must be clearly defined and understood. This includes municipalities, Indigenous communities and first responders as emergency response plans are developed.
- » Transparent decision-making about transportation is important. Information used to make decisions about transportation planning must be readily available to the public.
- » Education, communication and engagement are fundamental to overcoming fears and misconceptions about nuclear energy and the transportation of used nuclear fuel. Fears and misconceptions should not stand in the way of implementing the project and the greater public good. People also have a responsibility to learn about the project.
- » Transportation planning must be able to respond to changes, including changes in technology, climate and regulations.
- » Involving key communities and groups in transportation planning is vital to the development of a socially acceptable transportation plan.

Engagement on the draft framework gave the NWMO further insight into how we can move forward together. The response to the draft framework was positive. People indicated that the document reflected their priorities and values. They also gave the NWMO insights into how the document could be enhanced and what people are interested in learning about as we move through a collaborative planning process, including:

- » A discussion of peoples' connection to the land and how the transportation planning process and program will honour that connection, including the importance of ceremony;
- » Enhanced learning on safety and transportation logistics; and
- » Further exploration of who to involve in transportation planning and how, including the importance of fact-based information and continued dialogue.

The section that follows summarizes what the NWMO has heard related to our focused dialogue on the draft framework. Additionally, two complementary reports provided by consulting firms Hill+Knowlton Strategies and Mawaandoon Inc. document specific engagement activities undertaken throughout 2020 and 2021. Additional activities run by the NWMO as part of our engagement program and their outcomes are summarized in Appendix A. Appendix B provides a list of all activities while Appendix C provides the draft framework presentation.

4. Feedback on the draft framework

Feedback received during the NWMO's dialogue on the draft transportation planning framework demonstrates that the NWMO is on the right track at this early planning stage. Our engagement program sought feedback from people on two sections of the draft framework document. On the 'emerging framework' section of the document, we asked:

- » Have we accurately reflected priorities, objectives and principles shared to date?
- » Does the framework include what is most important to you?
- » What needs to be added or changed?

On the 'implementation approach' section of the document, we asked:

- » Is the approach responsive to what people have said is most important?
- » What needs to be added or changed?

The sections below outline what the NWMO heard about these two foundational sections of the draft framework.

4.1 The emerging framework

The 'emerging framework' section of the draft framework includes a detailed discussion of what the NWMO has heard to date and how we see a framework emerging from those discussions. This section describes six framework elements that are emerging as areas of importance to people, namely:



4.1.1 Priorities, principles and objectives

Priorities, principles and objectives were generally discussed together as there was intentional significant overlap between what people said was important to them and the proposed principles and objectives to guide planning. Across all engagement activities (workshops, surveys, interviews, briefings), people agreed that the documented priorities and proposed principles and objectives were in line with what had been shared and what was important to them. The highest priority continued to be safety. This was consistent with previous phases of engagement. On this topic, people continued to provide feedback on and seek additional information about accident scenarios and how the NWMO would manage accidents from a prevention and emergency/environmental response perspective.

Principles

- » Safety as priority;
- » Meet or exceed regulatory requirements;
- » Transparency as a key to building trust;
- » Balancing adaptability and continuity;
- » Evidence-informed decision-making to guide planning;
- » Importance of Indigenous Knowledge;
- » Responsible project management; and
- » Public engagement and dialogue.

Objectives

- » Protect the public and workers;
- » Ensure security;
- » Protect the environment;
- » Build respectful relationships with First Nation and Métis communities; and
- » Economic feasibility.

Depending on the audience, priorities varied in terms of importance. For example, emergency response planning was very important for first responders and municipalities, whereas Traditional Knowledge, environment and engagement were more important to Indigenous communities. Additionally, the way that the document and the NWMO talk about Traditional Knowledge, people and the land was very important to Indigenous communities.

In line with previous years and based on the general survey (please see www.nwmo.ca/transportationplanning), people newly introduced to Canada's plan ranked priorities relatively consistently. Safety was the highest priority, followed by:

- » Security;
- » Environmental protection;
- » Emergency response, monitoring/tracking/auditing; and
- » Training.

The NWMO also heard that the draft principles and objectives resonated with most participants, especially related to safety, and protecting the public and workers. Those participants that were familiar with APM (e.g., siting communities) were drawn to the adaptability principle. Specifically, people were interested in how the NWMO plans to be adaptable with respect to changing technology, infrastructure and regulations. There were some questions about whether transport by water would be reconsidered. The other principle and objective that garnered some discussions were 'economic feasibility' and 'responsible project management'. People discussed what an economically responsible project means and how the NWMO could be economically responsible without compromising safety.

Finally, people asked why 'respectful relationships with First Nation and Métis communities' was identified specifically under objectives, while other communities were not. These conversations highlighted the importance of building a greater understanding of inherent and treaty rights of Indigenous peoples and how they apply to Canada's plan. While the NWMO will continue to build relationships with all Canadians, we will need to work closely with Indigenous peoples to understand how our planning and engagement can respectfully incorporate Indigenous rights and Traditional Knowledge.

4.1.2 Safety, environment, inclusivity, and modes and routes

People expanded upon the priorities, principles and objectives through a deeper discussion of the other four elements of safety, environment, inclusivity, and modes. A summary of the feedback on each of these elements is below.

Safety: Discussions about safety focused on the key sections in the framework, with most people agreeing with the requirement for a strong technical foundation, comprehensive transportation package testing program, and the ability to meet or exceed regulatory requirements related to both safety and emergency response. Several people continued to ask questions about how the NWMO could go the ‘extra mile’ when demonstrating safety and considering emergency response. Specifically, people asked if the package had been tested under extreme cold (-40 C to -50 C) conditions and if the NWMO would be willing to do extra tests or modelling to answer their questions.

Additionally, people wanted to understand the types of accident scenarios the NWMO is looking at as part of our technical program and how we are going to ensure that emergency responders will be prepared to act in the event of an accident. Finally, in northern Ontario specifically, concerns were raised about the safety of two-lane highways, with many people recommending that infrastructure may need enhancements to ensure safety.

Environment: There was overall consensus that environment needs to be an element of the framework. This topic engaged people in several discussions that spanned the importance of a minimal carbon footprint to people’s relationship to the land. Since the NWMO began our engagement on transportation in the early 2010s, the discussion about the carbon footprint of the transportation program has evolved in line with the evolution of transportation technology and discussions on climate change. As identified in the draft framework, people continue to voice their expectations that the transportation program needs to consider its carbon footprint and adapt as required to include green technology.

People’s connection to the land is another topic that was often discussed in one of two ways. Firstly, Indigenous peoples’ connection and responsibility to the land has emerged in many discussions with Indigenous communities and through ongoing dialogue with the NWMO’s Council of Elders and Youth, which is an advisory body to the NWMO. The Council of Elders and Youth voiced that ‘environment’ is too narrow a definition and that it would be important for Indigenous peoples to see a stronger connection in the document between Traditional Knowledge and the land. Secondly, people also talked about use of land for traditional, recreational, and economic purposes, and how Canada’s road and rail lines support these activities. Discussion focused on how the transport of used nuclear fuel would impact these other activities.

Being inclusive: The draft framework identified five principles of engagement that had been outlined through previous dialogue. People agreed with these principles and then took the discussion deeper to reflect on what engagement could look like with different groups. This included advice ranging from a narrowly focused engagement program to one that is much broader. All people thought that engagement with potentially affected groups was necessary (e.g., the siting communities, communities hosting nuclear power plants, and communities along potential transportation routes). In addition to this, some people also asked us to consider different communities within Canada that are not geographically defined (e.g., the trucking industry, tourist owners and operators, the cancer community that has benefited from radiation treatments, youth).

Many people noticed the difference between the broad awareness campaign with the general public and a dedicated engagement program with Indigenous communities. While some people questioned why there was a difference, others celebrated the commitment to a deeper engagement program with Indigenous peoples.

Indigenous communities and groups said that they are keenly interested in this topic, expressing different levels of concern and feelings about the transportation of used nuclear fuel. The Council of Elders and Youth has indicated that transportation will be a challenging topic for the NWMO and that it is important that the engagement and planning acknowledge both treaty rights and inherent rights. Additionally, with the passing of Bill C15 related to the application of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the NWMO will need to consider how this may be applied to the transportation program.

Modes and routes: People generally agreed with the principles that mode and routing decisions should be made by experts and informed by local knowledge and priorities. However, there continued to be a wide variety of feedback on modes and routes and an expectation that preliminary routes will be shared publicly. While routes are considered prescribed information that cannot be released in accordance with the Canadian Nuclear Safety Commission (CNSC) regulations, people indicated that sharing this information would be in line with the NWMO's transparency principle. Regional perspectives also began to emerge, specifically with a higher degree of interest in rail in northern Ontario. People with a higher familiarity/comfort with the nuclear industry often questioned why water transportation was not being considered.

4.2 The implementation approach

We also asked people to weigh in on the proposed implementation approach, which was shaped by previous conversations and dialogue and included a path forward for collaborative decision-making.

An iterative approach to transportation planning whereby the NWMO provides more detailed information for public comment was met with a high degree of approval. People considered this 'going above and beyond' or 'exceeding regulatory requirements.' People also agreed that the principle of transparency could be achieved through regular reporting; however, they were interested in further discussion about what should be reported and the frequency. For example, while most people were interested in a report on evolving technology, there were several suggestions to report out on additional information such as the number of safe shipments per year. There was also significant discussion on frequency of reporting. Most people agreed that reporting should be linked to the stage of the project. For example, reporting frequency could be less in the early stages of planning, and more frequent leading up to and during transportation.

The concept of an initial non-site-specific transportation plan being released before site selection was also met with approval. People were very interested in the technical aspects of the program, even at this early planning stage, and indicated that they could provide more informed feedback if the NWMO were to release additional preliminary information about the technical program.

Dialogue with Indigenous communities brought forth recommendations about the use of ceremony and NWMO commitments once transportation begins. Specifically, we had conversations about how ceremony could be included in the transportation program. This included acknowledging the land used fuel would be moving through, including the past, present and future generations that have relationships with that land. Additionally, questions were asked about what types of notification commitments the NWMO would make to notify rights-bearing First Nation and Métis peoples in the event of an accident. This would be outside the required regulatory notifications.

The approach section also included a readiness checklist, which was developed based on what people said was important to them in the lead-up to the draft framework development. The readiness resonated with many people, with a few recommendations for editorial clarifications, including language refinements about 'broad-based education and awareness campaign' and acknowledgment of roles and responsibilities of infrastructure owners for 'safety audits.' People felt that the terms 'broad-based' was too generic and that the NWMO needed to clarify that engagement would be targeted to specific segments of the population. With respect to the safety audits, people told us that it was important to acknowledge this work would need to be done with the infrastructure owners.

Readiness checklist

- A site-specific transportation plan;
- A broad-based awareness and education program for the general public and communities along the transportation route;
- An ongoing engagement and dialogue with First Nation and Métis communities along the transportation route;
- Questions received about transportation are acknowledged, addressed and shared broadly;
- Awareness and training program for first responders along the transportation route;
- A tested and certified transportation package;
- Accident scenarios specific to transportation routes, including those that align with the lived experience of people in the area, have been covered by transportation package testing and safety has been demonstrated;
- A transportation security plan that takes into account threats of sabotage and terrorism;
- An emergency response plan that explicitly describes resources available along the route and roles and responsibilities in the event of an accident;
- An environmental management or protection plan that takes into account the carbon footprint of the transportation program and environmental response and remediation in the event of an accident;
- A confirmed plan to meet commercial vehicle and railroad safety and security requirements;
- A program for hiring high-quality and well-trained workers and vehicle operators;
- Procedures for safe and secure operations;
- A plan for periodic reviews of all required plans, certifications and procedures;
- A 'safety audit' program involving ongoing physical assessment of the roads, bridges, etc. of the route, to identify structural weakness; required repairs to the infrastructure of the selected route; and
- A program of reporting with updates on best practice, technologies and evolving state of the art, and ongoing activities to adapt the program in the spirit of continuous improvement.

4.3 What needs further discussion over the upcoming years?

The question ‘what needs further discussion over the upcoming years?’ stimulated a wealth of information that was shared with the NWMO about what would give people additional confidence in a transportation program.

First and foremost, people identified that ongoing dialogue including fact-based information will be key to gaining trust and building confidence in a transportation plan. They also stated that providing additional information to communities and interested groups and individuals as plans are refined is essential. During our engagements on the draft framework, people described aspects of project planning they would like more detail about as project planning proceeds.

People frequently said that they would like to see more specific information about safety and accidents, ranging from risk of accidents to emergency response. For communities that live in more remote parts of Ontario, they expressed concerns about heightened risks of accidents along two-way highways and subsequent impacts of road closures. People in more populated areas were concerned about having used fuel on high traffic volume highways. In both cases, people were interested in understanding more about the risk of accidents, especially as planning becomes more site specific. They also wondered how risk would be considered in site selection, as well as understanding the route-specific risks the NWMO will consider in our planning.

On the topic of emergency response, people were interested in knowing more about emergency response times along potential routes and retrieval of the transportation package from different scenarios (e.g., side of the road, rivers, remote rail line). People also asked for additional information about the roles and responsibilities of first responders and municipalities as planning becomes more refined. Finally, although there was a relatively high degree of confidence in the ability of the transportation package to contain the used fuel in the event of an accident, there were questions about how the package would perform in extreme temperature conditions.

One unique topic that emerged from dialogue with an Indigenous community was a process for rights-bearing First Nation and Métis communities to be notified in the event of an accident. Most people understood there is a regulatory process that will be followed in the event of an accident, including notification of the CNSC and first responders. This discussion, however, focused on the NWMO’s responsibility as the owner of the transportation program to notify people who have a connection to the land through either inherent or treaty rights.

Another topic that was raised across all regions engaged was infrastructure and the suitability of existing infrastructure to handle the shipments of used nuclear fuel. These discussions took on regional variations. In southern Ontario, people had questions about whether a decommissioned rail line near South Bruce would be used and if the NWMO would be responsible for the recommissioning. People were also concerned about the current volumes of traffic, including agricultural transportation and commuter traffic. In northern Ontario, one of the most frequently cited concerns was the adequacy of the roads to handle heavy

truck loads, given the long stretches of two-lane highways, eroded shoulders, and the terrain. Several people said that they would prefer transport by rail through northern Ontario if the NWMO could describe how we would manage recovery of the transportation package in remote areas. In all cases, people indicated that they felt that infrastructure upgrades would be required to improve the safety and minimize impacts of the transportation program.

As the transportation planning moves forward, people have also asked for additional detail on program logistics and operations considerations to enhance safety. Specifically, people have said they would like to understand planning elements such as:

- » **Requirements for security and emergency response:** Requirements for escort vehicles, vehicle tracking and emergency response plans;
- » **Time frames for shipments:** Order of shipments from each interim storage facility and whether the shipments would be continuous or if drivers will take breaks;
- » **Controls to be put in place to avoid accidents:** Consideration of weather, other transportation activities (e.g., times of high traffic volumes); and
- » **Additional research:** Additional studies the NWMO plans to conduct related to the transportation program, including detailed logistics for the site-specific plans.

Another topic that continued as a theme through this dialogue was the concept of inclusivity. As discussed above, there was general agreement with the principles of inclusivity as described in the draft framework. As part of this dialogue, people identified an interest in understanding how the NWMO could put those principles into practice. For example, people wanted to know how the NWMO plans to disseminate fact-based information about transportation and the project to Canadians and Indigenous peoples.

People also had questions about how the NWMO plans to engage with people opposed to the project, recognizing that people opposed to the project play a very important role in terms of identifying concerns that can improve the project and holding the NWMO and regulatory bodies accountable. And finally, people were interested in how they will continue to be included in transportation planning as we move forward.

5. NWMO reflections on revisions to the draft framework

The discussions summarized above, and in the referenced consultant reports and Appendix A, have given the NWMO much to consider as we move this collaborative planning process for transportation forward. We recognize that discussions about transportation are challenging, as will be the development of a plan that reflects social considerations. With that in mind, at this early planning stage, we have the benefit of time to engage in dialogue and develop a plan together. So, what does this mean for the next version of the Transportation Planning Framework? We are thinking about the feedback received in the following ways:

1. Making language more precise or clearer;
2. Omissions of activities and concepts;
3. Opportunities to deepen our thinking; and
4. Striking the right balance and reflecting on challenges.

5.1 Making language more precise or clearer

There are few instances where people expressed an interest in seeing clearer or more precise language in the draft framework. These are described in the table below and will be addressed in the revised version of the framework.

Language concern/question	What people said
Terminology that more clearly describes 'used nuclear fuel' as a solid	The term 'fuel' creates the perception that the material is a liquid, which it is not. In Ojibway, the word 'fuel' describes a liquid. The fact that it is a stable solid material is an important part of the safety message that needs to be emphasized in documentation going forward.
The reference to 'minimizing impacts'	In several instances, the framework refers to 'minimizing' impacts (i.e., on the environment, the public and workers). This raised concerns among several participants who worried that this means that the NWMO is acknowledging that negative impacts are inevitable. It also begs the question about the potential seriousness of impacts.
Including cybersecurity in security references	Some thought that cybersecurity should be acknowledged as an explicit threat given the nature of geopolitical conflicts over the last few years.
Reference to 'periodic' reviews of all required plans, certifications and procedures	A few participants stumbled over the word 'periodic,' which to them connoted 'infrequency' or even 'haphazardness.' Some thought it would be better to say 'regular.'
Reference to a broad-based education and awareness program	There was some concern that 'broad-based' would mean 'generic,' 'mass,' or 'one-size-fits-all' – most people thought that education and awareness should be targeted to certain population groups.
A simpler stepwise diagram in lieu of the Gantt chart timeline	While many people found the Gantt chart in the 'implementation approach' section a helpful visual, some people suggested that the Gantt chart approach to the timeline could be challenging to read and recommended a different visual approach to the steps presented in the key milestones and steps diagram.

5.2 Omissions of activities and concepts

Another way of looking at the feedback from our engagement on the draft framework is to think about whether people said that we have missed any significant concepts that will need to be explored over the next 20 years or activities needed to achieve collaborative transportation planning. While most major concepts are explored in the draft framework, people did provide recommendations about the types of actions or activities we could collectively undertake at this early planning stage. These include:

- » ***Inclusion of conventional accidents:*** People identified that the framework, and transportation planning in the future, should include environmental impacts of conventional accidents. The framework discusses environmental impacts related to release of radioactive materials, but does not mention people's concerns about the impacts of a conventional accident (e.g., a gasoline fuel spill).
- » ***Engagement with communities along the route:*** The NWMO's level of engagement and communications with communities along the route was highlighted as extremely important, especially in the workshops with current and former siting communities, as well as in the workshop with representatives of Ontario Good Roads Association. People suggested that the framework more explicitly address this issue, particularly since the document highlights the NWMO's commitment to engaging with Indigenous communities. This is especially relevant to nuclear host communities and first responders that will have specific roles to play in the transportation program.
- » ***Indigenous engagement and community awareness:*** Many people noticed the difference between the broad awareness campaign with the general public and a dedicated engagement program with Indigenous communities. While some people questioned why there was a difference, others celebrated the commitment to a deeper engagement program with Indigenous peoples.
- » ***Ongoing reporting and monitoring:*** Some participants felt the section on ongoing reporting and continuous improvement could be strengthened by increasing the frequency of reporting and by reporting on community engagement activities.
- » ***Include additional reporting activities once transportation begins:*** Several people said that in addition to committing to reporting incidents and environmental impacts, they would like to see data that demonstrates safety; for example, the number of safe shipments per year.

5.3 Opportunities to deepen our thinking

The third way of looking at feedback on the draft framework considers what opportunities exist to deepen our thinking on various aspects of our shared path forward. This led us to consider a few different topics raised by communities and individuals.

As an organization and Canadians, we are all walking a path towards Reconciliation. This is especially important considering the findings of unmarked graves of Indigenous children near the institutions called residential schools. So, what does Reconciliation look like for this document now and transportation planning going forward? We heard that we could consider the following:

- » **Stronger linkage between people and the land:** This is an area of common ground for many Indigenous peoples and Canadians. This connection to the land needs to be acknowledged and discussed in the context of transportation.
- » **Include a firmer discussion of the role of Indigenous peoples:** The Council of Elders and Youth in particular recommended that the NWMO needs to find ways of working with Indigenous communities and organizations to develop a culture-centred approach that acknowledges the rights holder, keepers and guardians of the land in our implementation process.
- » **Include role of ceremony in transportation program:** As discussed above and aligned with the recommendation for a deeper discussion of Indigenous peoples' connection to the land, it is important to be more specific about the NWMO's commitment to Indigenous Knowledge by including a discussion of ceremony.

5.4 Striking the right balance and reflecting on challenges

Something fundamental that we have learned through our engagement on the draft framework and over our years of engagement is that finding the right balance is important, but will be challenging. There are a few areas of our work where this becomes quite apparent, specifically inclusivity, transparency and social safety.

Beginning with inclusivity, everyone acknowledges that inclusivity is important to this process. The NWMO's goal is to be as inclusive as possible; however, being inclusive can pose its own challenges. We acknowledge that we will not be able to meet everyone's expectations with this transportation program. For this reason, the inclusivity principles are a starting point for the conversation on who needs to know and who should be involved. From there, we will need to work to understand the priorities of those groups and their level of inclusion, from being informed to being involved in the planning.

As Canadians, we are all walking a path of Reconciliation, and with this, comes responsibility. It is our responsibility to look to Indigenous peoples and communities for guidance on all aspects of our work to carry it out in a way that respects the seven grandfather teachings of wisdom, love, respect, bravery, honesty, humility, and truth. By exploring these teachings as part of our work and letting them guide us in the engagement work we do, we believe that we can find a good balance. We have much to learn about these teachings, and we look to our engagement with Indigenous peoples and Canadians to guide us and walk with us along this Reconciliation journey.

Moving on to the challenge of transparency, transportation of used nuclear fuel is highly regulated both in Canada and internationally. The regulatory framework within Canada is focused on a stringent set of safety criteria that must be met, along with a distinct set of roles and responsibilities assigned to the party responsible for shipping used nuclear fuel and the regulators. These regulations are focused on safety and have limited flexibility. The NWMO will adhere to all regulatory requirements and is also focused on developing a plan that reflects people's priorities and values. Going forward, it is important that we continue dialogue to help each other understand which aspects of planning are regulated, and therefore have limited flexibility, and which aspects can be shaped by the public.

For example, the NWMO will need to undertake a dialogue about what information can be shared and what information is 'prescribed information' (i.e., information that cannot be shared for security purposes). People often ask if we have decided upon transportation routes and whether those can be shared. Decisions about routes have not been made, and many people recognize that this information cannot be shared during a transportation program for security purposes. However, people still question why potential routes cannot be discussed at this early planning stage. We understand that people are interested in learning about potential routes so that they can tell us what is important to them along those routes and share local knowledge. As we work through this challenging subject together, we encourage everyone to share factors or considerations for mode and route selection so that we can apply those to our transportation decision-making.

Another aspect of collaborative transportation planning that is important to people and the NWMO is developing and understanding the safety case for transportation. We recognize that many people still have questions about safety because their expectations may not align with regulatory requirements. While we have developed and certified a used fuel transportation container, there are still many questions about accident scenarios and other operational safety considerations.

Going forward, the NWMO aims to understand the scenarios that people are concerned about and address these through further research and discussion of operational experience and best practice. Additionally, we will need to focus on the many safety requirements or best practices we will follow from an operational perspective to ensure that we are minimizing accident risks.

These three concepts – inclusivity, transparency and social safety – are challenges, but they are also foundational to our work. As identified in one of our key inclusivity principles, 'Good information and a desire to be informed are important for good decision-making.' The key to our collective success as we move through these challenging discussions is a continued commitment from the NWMO to build the pathways for two-way dialogue. This will enable us to make informed decisions and eventually develop a plan that meets regulatory requirements and people's expectations.

6. Continuing dialogue and next steps

Dialogue will continue on transportation safety and future planning. The NWMO has observed that bringing accurate and balanced information into the conversation is important as there is substantial misunderstanding and misinformation on this topic. It also invites deeper conversation and greater reflection on the choices that face us as a society, and how we will ensure safety at every point in the long-term management of Canada's used nuclear fuel.

The NWMO has observed that as conversations continue, and more communities, individuals and groups become involved, there is substantial agreement on the themes and questions that need to guide and be addressed in transportation planning. While a social foundation for APM transportation has been developed, we understand that this is an ongoing conversation that will continue to bring Indigenous Knowledge and public priorities into transportation planning over the long term.

The NWMO looks forward to continuing with this dialogue. We invite all interested Canadians to review the next version of the Transportation Planning Framework and Initial Transportation Plan when they become available in the upcoming months. As always, become involved by attending an open house, drop by a community Learn More office, or share your thoughts by visiting the NWMO website (www.nwmo.ca).

Appendix A

The NWMO's engagement report

Introduction

Much of the NWMO's engagement on the draft framework was supported and documented by third-party consultants, namely Hill+Knowlton Strategies and Mawaandoon Inc., whose reports are posted online. However, the NWMO also engaged with interested parties (e.g., first responders and nuclear host communities) and Indigenous communities, and sought input from the Council of Elders and Youth, an advisory body to the NWMO, to understand how this early transportation planning document could be more reflective of those voices. Additionally, we have reviewed concerns and questions posted on social media outlets reports on the outcomes of those discussions and reviews. The what we heard document above, provides our reflections based on all three reports.

Indigenous communities and the Council of Elders and Youth

The NWMO has run several engagement sessions with Indigenous communities and the Council of Elders and Youth on the draft framework and transportation. These discussions looked at how the draft framework and the NWMO's approach to transportation, more generally, reflected Indigenous values. The key topic discussed are summarized below.

Holistic approach to transportation planning: The importance of taking a holistic approach to transportation planning was noted by many participants. Discussion focused on wanting to see a stronger linkage between people and the land. Specifically, it was noted that the puzzle diagram in the draft framework only considered 'environment,' which is not an accurate reflection of the land and Indigenous peoples' connection to the land. The NWMO heard that this connection goes beyond a special relationship with the land because people are the land. The Council of Elders and Youth emphasized this point and reinforced the idea that planning would need to consider this intimate connection between Indigenous peoples and the land.

Consideration of Indigenous law: Closely aligned to the connection between Indigenous peoples and the land, the NWMO heard that we would need to consider Indigenous law as transportation planning progresses. Specifically, a youth-focused session with representatives from the Council of Elders and Youth highlighted the importance of interweaving Indigenous and Canadian law. The book 'Braiding Legal Orders – Implementing the United Nations Declaration on the Rights of Indigenous Peoples' was a recommended resource. Additionally, given the northern Ontario location of one of the potential sites, it was also highly recommended that the NWMO look to Treaty 3's Great Earth Law, and the environmental assessment process established for Treaty 3.

Importance of ceremony: The Council of Elders and Youth have said that on a project such as this – one that spans many generations – the NWMO should be looking to ceremony to help us move forward. Ceremony is not something that is 'added' to a program; it is there to guide our work on a program and for us to make the program part of ceremony. It will be an important way of acknowledging the land used fuel would be moving through, including the past, present and future generations that have relationships with that land.

Importance of broadening engagement with Indigenous communities: While the NWMO's focus in recent years has been to engage with siting communities, we have begun to expand our engagement to begin a dialogue with communities that may be along potential transportation routes. This activity is strongly encouraged by Indigenous siting communities that indicated that the NWMO should be doing more of this. Given that any transportation route will cross many traditional and treaty territories, people in siting communities have told us the importance of ensuring that we understand the concerns of communities along the transportation routes and do what we can to share information and address those concerns. We were also told that language is important. For example, the word for 'fuel' in Ojibway refers to a 'liquid,' and therefore, the NWMO needs to think about the language we use in our written and spoken communications to ensure that people know that what we will be transporting is a solid material.

Culture-centred engagement approach: Pulling many of these concepts together is the recommendation to establish a culture-centred approach to transportation planning and engagement. The Council of Elders and Youth recommended that the NWMO look to Implementation Science references to develop a process that first acknowledges the land owners/keepers/guardians whether Treaty, unceded, title holders or deed holders. This same sentiment was expressed by other Indigenous communities that were interested in understanding the approach to engagement during the years when transportation of used nuclear fuel bundles will be occurring. As people that have a responsibility to the land, community members indicated that they would want to understand what is happening and be notified and involved in any accident response.

First responders and nuclear host communities

The NWMO also ran a few sessions based on expressed interest with first responders and station communities. These discussions were very much focused on the specific responsibilities of each of these interest groups. Summaries of key discussion topics are below.

Infrastructure responsibility: The concept of a safety audit program for transportation activities and infrastructure was widely accepted; however, people had many questions about roles and responsibilities related to infrastructure. They identified that most roads and rail lines are the jurisdiction municipalities, the province, or private companies, and questioned who would be responsible for the 'audits.' They also had questions about infrastructure upgrades and who would be responsible for those from a practical 'who will do the work' and a 'who pays for it' perspective. Many people identified a preference for the NWMO, as the operator of the transportation program, to review the infrastructure and work with the infrastructure owners to ensure infrastructure improvements occurred as required. Additionally, many people indicated that the financial responsibility for upgrades and liability should not be an additional burden to municipalities.

First responder training: As with the safety audit program, there was a high degree of agreement with the concept of first responder training. People said that the NWMO should be talking to first responders about what they think this program should look like and when it should begin. When reviewing the timeline of key milestones and steps, some people suggested that the timeline should be more explicit about first responders being included in Step 4 (build awareness and communicate plans as they are refined).

Additionally, first responders wondered about additional personnel and infrastructure or equipment requirements, recommending that work on those planning components should begin before 2038. People indicated that the NWMO should be thinking about having specific awareness sessions for first responders as a group either as part of ongoing training opportunities (e.g., at annual conferences or region-specific training sessions), or perhaps hosting their own sessions for first responders at the NWMO's Oakville proof test facility or the Centre of Expertise once that is established in one of the siting communities. Finally, as with the discussions of infrastructure responsibility, people asked 'who is responsible for paying for the training?' Many first responders indicated that financial resources for training are already stretched.

Social media and non-NWMO presentations on transportation

The NWMO is active on Twitter, Facebook, and Instagram, and monitors our own accounts for comments and questions about transportation. Additionally, we monitor other social media accounts that are active on our project. We also actively listen to presentations given about our project by members of the public who are concerned about transportation. Many of the discussions that occur on social media or through these presentations relate to concerns people have about safety. Even though some people may not engage directly with the NWMO on social media, it is important that we monitor it so that we can understand everyone's concerns. The types of concern expressed through social media and these presentations can be categorized in the following ways.

Concerns about radiation exposure resulting from transportation: People have voiced concerns about the levels of radiation emitted from the transportation package during normal transportation activities (e.g., radiation emitted from the transportation package when it is sealed). There are also significant concerns raised about release of radiation into water bodies in the event of an accident (e.g., what happens if a transportation package falls into a river or lake and releases its contents?).

Concerns about accidents: Frequency and severity of accidents along transportation routes: There are concerns about specific stretches of highways, specifically in northern Ontario, and the rate of accidents along those potential transportation routes.

Inadequacy of infrastructure: These include concerns about road and rail infrastructure throughout Canada, including two-lane highways with infrequent passing lanes and aging rail infrastructure. Concerns about how climate change may impact our use of this infrastructure was also raised.

Climate change: Concerns have been raised about the carbon footprint of the transportation program and questions about why the NWMO would consider selecting a site that is farther away, when this could mean a larger carbon footprint.

Involving youth in engagement: In fall 2020, the NWMO held an egg-drop competition with students to demonstrate the importance of the used fuel transportation package and required testing by the CNSC. There was feedback on social media and during subsequent presentations that the NWMO should not be engaging with youth on this topic. It was seen as indoctrination and the provision of one-sided information.

People along the transportation route having a say in the process: There are concerns that people along the route will not have a say or will not have their questions answered. Some of the online discussions talk about environmental racism and raise concerns about Indigenous communities being at higher risk because of the transportation program.

Continuous learning and international best practice

While the NWMO continues the dialogue about transportation with Canadians and Indigenous peoples at this early planning stage, we also continue to expand our own learning and understanding of best practice internationally. This includes working with other countries that transport used fuel regularly as part of their national plans through participation in workshops, meetings and conferences. We have heard that the questions and concerns being raised by Canadians and Indigenous peoples are consistent with those raised across the globe. We are also learning about the experience that other countries have with the implementation of important activities such as emergency planning and response.

Over the upcoming years, we will continue to explore some of the more challenging topics, including finding the right balance of inclusion, transparency and addressing social safety with these international partners and with Canadians and Indigenous peoples. Sharing what we are learning through these international relationships will become a more significant part of our transportation engagement program as our collaborative planning process progresses.

Next steps

The feedback provided to the NWMO and summarized in this report, as well as feedback from the two third-party reports, are the sources for the NWMO's what we heard report. The what we heard report summarizes all this feedback in the context of the draft framework to lay the groundwork for a revised version of the document which will be released later in 2021.

Appendix B

Engagement activities on the draft framework

2020	
Date	Engagement event
Aug. 7	Presentation to Council of Elders and Youth
Aug. 17-Mar. 31	Transportation framework survey (open to public)
Aug. 17-19	Association of Municipalities of Ontario trade show
Aug. 20	Mobile exhibit for Wabigoon Local Services Board
Aug. 31-Sept. 8	General population transportation framework survey (run by third-party provider Hill+Knowlton Strategies)
Sept. 3	Municipal Forum
Sept. 8	Mobile exhibit for Treaty 3 membership (Kenora)
Sept. 9	Presentation to Wabigoon Lake Ojibway Nation
Sept. 15	Ignace Community Liaison Committee
Sept. 16	Realtor's Association of Grey Bruce Owen Sound
Sept. 18	Presentation to Ontario Good Roads Association board
Sept. 22	Ignace (and region) emergency responders' workshop
Sept. 23-27	Ignace community workshops
Sept. 28-29	Two-day workshop with former siting communities
Sept. 30	Dryden Rotary Club
Oct. 8	South Bruce Community Liaison Committee
Oct. 13-14	Presentation to Ignace teachers (lunch and learn), students (lunch and learn) and Grade 7/8 Science class (CNSC requirements for transportation package testing)
Oct. 26	MNO Region 9 Workshop
Oct. 27	Ignace Grade 7/8 egg-drop competition
Oct. 27	Presentation to Lac Seul community advisor
Oct. 26-Nov. 6	South Bruce Open Houses
Nov. 4	MNO Region 4 Workshop
Nov. 18	MNO Region 5 Workshop
Nov. 25	MNO Region 3 Workshop
Nov. 26	Presentation to Union of New Brunswick Indians
Nov. 26	Presentation to Ontario Small Urban Municipalities Board

2020 (continued)

Date	Engagement event
Dec. 2	MNO Region 8 Workshop
Dec. 3	Workshop with youth from Council of Elders and Youth
Dec. 9	MNO Region 6 Workshop
Dec. 15	MNO Region 4 Workshop
Dec. 17	MNO Region 7 Workshop
Dec. 18	Web story to 8,000+ nuclear workers in Clarington, Pickering and Kincardine (through OPG)
Nov. 6 - December	1:1 interviews with South Bruce and Huron Kinloss staff and municipal officials

2021

Date	Engagement event
Jan. 6	Update with first responders ad hoc working group
Jan. 13-14	MNO Region 1 Workshop
Jan. 22	Workshop with Ontario Good Roads Association
Jan. 26	Presentation at Rural Ontario Municipal Association
Feb. 8	Article in Ontario Good Roads Association publication (Milestones)
Feb. 8-9	Municipalities of Saskatchewan
Feb. 9	Presentation to northwestern Ontario NWMO Indigenous Community Liaison Training
Feb. 12	Discussion at Council of Elders and Youth meeting
Feb. 21-24	Annual Ontario Good Roads Association Conference (presentation and eblast with survey link on Feb. 23)
Mar. 1 (week of)	Article with survey link in OPG Neighbours newsletter article
Mar. 22	Update with ad hoc first responders group
May 31	Presentation to Atikokan Council
June 2	Community-based transportation working group meeting (inaugural)
June 9	Environment North presentation to Ignace Community Liaison Committee
June 15	Update with ad hoc first responders group
June 23	Dialogue with Wabigoon Lake Ojibway Nation
July 5	Presentation to Durham Region Nuclear Advisory Committee
July 14	Presentation to Ignace Community Liaison Committee

Appendix C

Transportation framework presentation



Nuclear Energy in Ontario

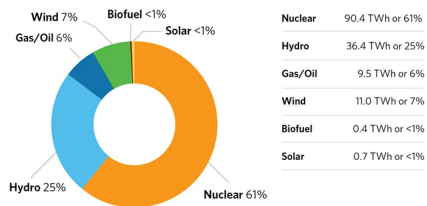


Image Credit: Independent Electricity System Operator (IESO), [Reliability Outlook](#), released June 2020, updated quarterly

Inviting Public Input and Dialogue

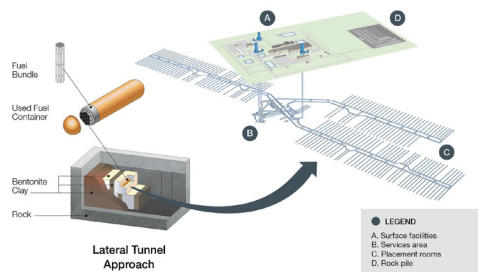
What is Used Nuclear Fuel?



Interim Storage versus...



Long-term Management



Introducing NWMO

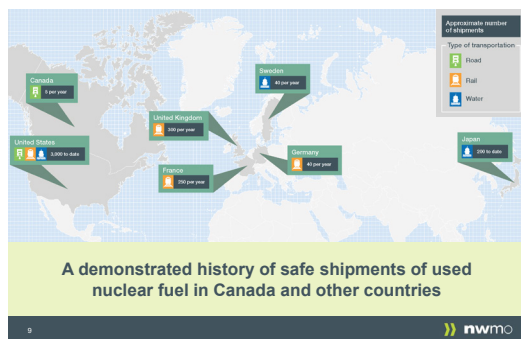




Transportation is Safe and Secure



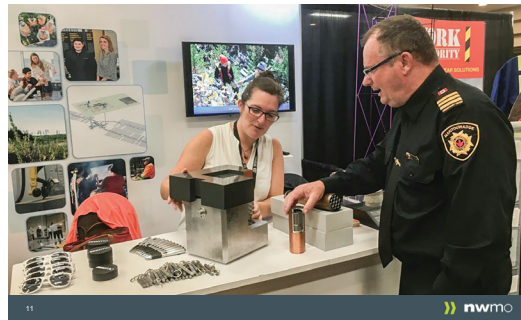
International Collaboration



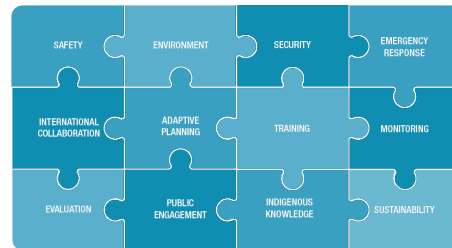
Why Are We Here Today?



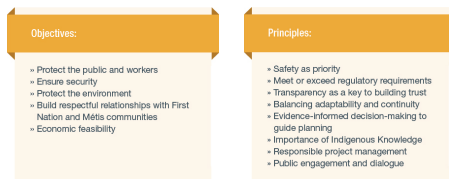
What We Heard



Public-identified Priorities



Planning Objectives & Principles



Protecting People and the Environment



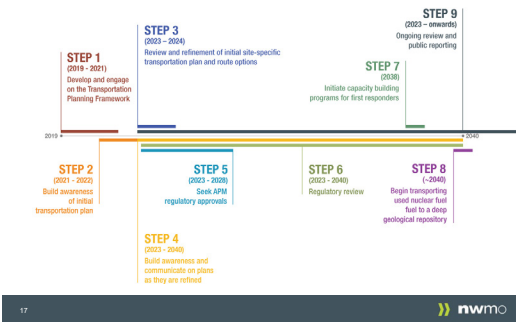
Who Should Be Included?



What about Modes and Routes?



NWMO's Approach to Transportation



An Emerging Framework – Inviting Input






- Where have we have listened well to public feedback?
- Does the framework include what is most important to you?
- What additions and changes still need to be made?
- What may need further discussion over the coming years?

**For more information,
please contact:**

Nuclear Waste Management Organization

22 St. Clair Avenue East, Fourth Floor
Toronto, Ontario M4T 2S3, Canada
Tel.: 416.934.9814 Toll Free: 1.866.249.6966
Email: contactus@nwmo.ca
Website: www.nwmo.ca

   @nwmoCanada
 /company/nwmoCanada

© 2021 Nuclear Waste Management Organization

