

**What We Heard:
Community & Public Engagement in 2014**

INTRODUCTION

The Nuclear Waste Management Organization (NWMO) continued to implement the Adaptive Phased Management (APM) project in 2014, focused on supporting communities in Ontario and Saskatchewan that expressed an interest in learning more about hosting a deep geological repository for Canada's used nuclear fuel. In addition to continued engagement in these communities, we also began a program of engagement and capacity building activities to build understanding about APM in nearby communities. The goal of this document is to broadly summarize the messages and input communicated to us over the course of 2014.

Over the course of the year, we received a broad range of comments, questions, and suggestions from correspondence, written submissions, and face-to-face conversations at meetings, open houses, other public events such as municipal conferences and presentations to interested groups, and focus group discussions. Community input was also received through community-led Community Liaison Committees (CLCs) set up in the four communities that had progressed to Phase 2 of preliminary assessments, and in many of the remaining ten communities that were still involved in Phase 1 preliminary assessments (for more information regarding the steps in the site selection process, please visit our website www.nwmo.ca/sitingprocess). The NWMO also noted comments and opinion pieces that appeared in local, regional and national news media or were published on public websites and social media platforms.

We responded to questions and engaged in dialogue through a combination of one-on-one discussions at public events, briefings with community groups and interested individuals, regular Community Liaison Committee meetings, written replies to correspondence, and publications such as our newsletter, new editions of *Ask the NWMO*, and new informational backgrounders and other communications material developed for general distribution and posted on the NWMO website. For example, three new publications were produced in 2014 in response to questions and comments received from the public: a *Watching Brief on Reprocessing, Partitioning, and Transmutation*; a brochure titled *Frequently Asked Questions: Safe and Secure Transportation of Canada's Used Nuclear Fuel—Questions and Answers*; and a backgrounder on the topic of *Funding Canada's Plan for the Safe, Long-Term Management of Used Nuclear Fuel*.

Comments and questions shared with the NWMO as part of the process of learning about and exploring Canada's plan and the APM project reflect a deepening awareness and understanding among those engaged in the Site Selection Process. As site selection work continues in interested communities, public input has become more detailed in response to ongoing community efforts to learn more about the project, continuing a trend that has been noted in earlier *What We Heard* publications. In 2014, input focused less exclusively on high level aspects of the project and more on the specifics of implementation, scheduling, and the project outcomes expected for communities and their surrounding regions. For instance, many have expressed a desire to understand exactly where the site might be

located, or have probed for specific details about the benefits and risks associated with hosting a deep geological repository for Canada's used nuclear fuel, the transportation program, and transportation logistics. A significant portion of the public input from this past year demonstrated a desire to learn more about how the project might look on a day-to-day basis if it were implemented in the communities participating in the site selection process.

While the majority of discussion with citizens of interested communities demonstrated a desire to learn more about the project in order to make an informed decision about whether to host the project in the area, we also continued to hear from some individuals and organizations that are opposed to the NWMO mandate, project, and presence in the communities. Wherever possible, the NWMO has attempted to constructively respond to this input and engage with opponents in order to understand their positions, answer questions, and clarify potential misconceptions about the NWMO and its work. Where possible, we have also worked to keep these groups and individuals informed of milestones in our site selection work, and keep lines of communication open through regular mailings (paper and electronic) and invitations to learn about and comment on our work.

Five broad discussion areas and questions continued to be of interest in 2014: health and safety; the APM project; the site selection process; transportation of used nuclear fuel to a willing and informed host community; and features specific to individual communities involved in the site selection process. The summary below has organized input into these five broad topics. While the interest shown in each of these five categories was strong, there were differences noted between communities at earlier or later stages of preliminary assessments, with the former expressing more interest in health and safety of the project and the latter in the site selection process and transportation planning.

We also received comment and direction from the public on our annually updated strategic plan, *Implementing Adaptive Phased Management*, which describes our strategic objectives and five-year work plan. The plan is regularly assessed, strengthened and redirected as appropriate in the face of new information, advances in technology and science, evolving public policy and comments we receive through our engagement initiatives. A draft of the 2014 to 2018 plan was released for public comment in September 2013. Following the close of the review period the Plan was revised to reflect comments received. We reported our progress in meeting our strategic objectives in the Plan, as well as through our *Annual Report* (published every March), and *Triennial Report* (March 2014). The comments we received on our plan are described in a separate section below.

DETAILED DISCUSSION

I. HEALTH AND SAFETY

What is Radiation?

As in previous years, virtually everyone we engaged with in 2014 expressed that safety of people and the environment must be the NWMO's top priority, above all other considerations. They wondered how they could become confident that the NWMO transportation and facility construction and operation

plans would be safe for the public, water sources, land, and the personal economies of those relying on local natural resources for their living. Many also wanted to better understand radiation, including what is known by medical science about the health effects of radiation exposure, and the ways in which we can measure and protect humans, animals and the environment.

Many people focused their questions on developing an understanding of the nature of radiation, asking questions such as:

- What is radioactivity? Where does it come from? What is a half-life?
- How does radiation affect people? Is natural background radiation harmful to my family?
- What is the relationship between a Millisievert (MSv) and a Becquerel (Bq)?
- How does the radioactivity level in this waste compare to levels from other minerals?

Water Safety

As communities have learned more and become familiar with the basics of the project, certain subjects have become more salient, such as ensuring water quality and protecting water bodies and lands of economic importance. These have been top of mind subjects for many visitors to NWMO events, and the focus of concern has been split between the environment near the deep geological repository and along the transportation route.

The NWMO heard significant interest in learning more about the facilities associated with the project. For example, many visitors were interested in knowing more about how the facility will ensure long-term safety, particularly *how* the deep geological repository will hold safely packaged radioactive material emplaced in a network of engineered tunnels at around 500 meters depth, and isolate them from the environment. Others were focused on learning more about how safety would be ensured for workers in both construction and operation phases of the project. Specific questions probed the nature of radiological risks to site workers and the measures to be put in place to ensure worker safety and the protection of residents as well as surrounding lands, animals, and water sources.

As these communities have learned more and become familiar with the basics of the project, certain subjects have become a more frequent topic of conversation, such as ensuring water quality, developing plans for waste rock storage, combating road erosion, and ensuring that vibrations caused by construction activities do not result in unsafe surface conditions. The protection of water bodies and lands of economic importance were top of mind subjects for many visitors to NWMO events. Many visitors asked about the potential for the APM project to endanger local water sources, or were seeking details about how the NWMO would maintain the safety of local water sources, especially the Great Lakes and local sources of drinking water. Individuals and families engaged in farming, trapping, mining, and tourism were interested in understanding how the NWMO would ensure that their livelihoods would be protected from harm; that is, by protecting the resources on which they rely, namely the land, the habitats of migratory animals along their trap lines and hunting areas, fish stocks, and areas rich in exploitable minerals.

Ensuring Safety

As in 2013, many visitors were interested in exploring hypothetical scenarios, or sometimes ‘worst case scenarios’, and wanted details about how the NWMO would respond. These discussions sometimes referenced recent events at other nuclear waste management facilities around the world such as the Waste Isolation Pilot Plant (WIPP) facility in Carlsbad, NM, which stores American weapons-related nuclear waste. Historical references to Germany’s Asse facility, as well as major radiation releases at Fukushima and Chernobyl were also raised in conversation and many individuals were interested in learning more about how the proposed NWMO used fuel repository is different in form and function from these facilities, and why similar events could not happen in the Canadian context.

Another common area of interest in community Open Houses was if the proposed repository concept had a demonstrated track record of safety, and if any similar facilities exist around the world. The fact that the deep repository concept is one pursued by nuclear nations around the globe and represents the best practice in long term used nuclear fuel management was often well-received, as were NWMO publications that summarized other countries’ plans for the long term management of their used nuclear fuel.

A large number of safety questions were directed at transportation planning. People were interested in how the NWMO would ensure that transportation of used nuclear fuel would be safe for the communities, land, and water alongside the route, as well as for staff, including truck drivers and loading and unloading personnel. This was the most frequent question asked in the transportation safety category. People also asked for more information about emergency planning, specifically how first responders would be trained and how various agencies would be coordinated in the case of an emergency. Transportation input is discussed in further detail in Section IV below.

These conversations involved NWMO staff members and experts from a variety of specialty areas, including risk analysis, engineering, geology, social sciences, hydrogeology, and environmental assessment, by way of in-depth conversations that were tailored to the information needs of individual visitors. In many instances, discussions in these areas led to in-depth and constructive exchanges that were explicitly noted as valuable to the individual posing the question, and in turn provided critical insight to the NWMO about the breadth and nature of local interest in Adaptive Phased Management.

II. THE PROJECT

What is Used Nuclear Fuel?

Over the course of 2014, one of the most frequent sub-themes in discussion was related to the nature of the used nuclear fuel bundles to be managed by the NWMO. Given the complexity of the subject matter, and the long timeframes involved, this is a common line of questioning that is central to building knowledge and often serves as an introduction to a deeper understanding of other aspects of the project. Questions and comments were wide ranging, addressing areas such as the design and

radioactive characteristics of the used fuel bundles (e.g. *Is it a liquid or a solid? What is it made of?*), the history of nuclear power in Canada and the NWMO mandate, and how waste is currently safely managed on an interim basis at Canada's nuclear power plants.

Many visitors focused their questions on understanding the current operations and practices at the nuclear generating facilities. For instance, people asked for more information about the size and depth of the water-filled pools used to cool used nuclear fuel once bundles that are removed from reactors; the construction and monitoring of the Dry Storage Containers used on site; and the number of bundles that will ultimately need to be managed. People were also interested in the theoretical amount of energy left in the bundles once they are taken from the reactor, their radioactive output and how bundles were moved around from reactor, to pool, and ultimately to dry storage containers.

Many also wanted to know more about radiation safety related to the used fuel bundles when they are ready to be placed into the repository. For example:

- Is the bundle dangerous and for how long?
- What are the effects of exposure to a fuel bundle, with or without barriers, and how will the NWMO ensure that site workers are safe during construction and operation phases of work?
- Can the bundles explode spontaneously?
- Are the ceramic pellets durable?
- How does radiation dissipate when it is underground in a sealed container? Is this extra heat dangerous? Could it reach the surface?
- Will the radiation bio-accumulate?

Subject matter specialists and staff addressed questions like these over many lengthy and detailed conversations with members of the public, learning more about the natural uranium used in the production of CANDU fuel bundles, the stability and durability of the ceramic fuel pellets, and how the NWMO will use a multi-barrier approach to protect people and the environment from the declining levels of radiation that will be emitted from these bundles over the course of hundreds of thousands of years.

NWMO History and APM Study

Interest and discussions continue about how and why the NWMO was formed when federal parliamentarians passed the *Nuclear Fuel Waste Act* in 2002, the details of our work during the initial study phase, and how the study resulted in the collaborative design of APM with Canadians from coast to coast to coast.

Regarding the study of the options (2002-2005), people wanted to understand why a single deep geological repository for all of Canada was the preferred option, and why it was selected over other options. People were interested in findings from the study related to: extending temporary storage at the nuclear power generating facilities; using an above ground facility to manage the used nuclear fuel; reprocessing or otherwise attempting to re-use nuclear fuel; or deferring a decision in order to do more research on methods to reprocess, reuse, or safely neutralize the hazards inherent in used nuclear fuel.

Many people also asked for more information on how the study of options was conducted. They wanted to know: how many Canadians contributed to the study of the options through attendance at public events or other submissions; in which provinces these Canadians lived; and what kinds of questions they asked. Others wanted to know the latest on how other countries are managing the challenge of long-term nuclear waste management, and how Adaptive Phased Management compares to other used nuclear fuel management programs around the world.

APM Project Description

Over 2014, we heard a variety of questions and comments about the APM Project itself. People asked for details about the deep geological repository and the associated management system. They also asked about the supportive facilities that will also be constructed in or around a host community. Many of these questions were high level (e.g., what is APM?) and were easily addressed by NWMO staff members with discussion of NWMO history and research. These discussions were complemented with guided tours through NWMO Open House exhibits, which feature a series of informational modules and a range of brochures on more than a dozen topics related to our work. Other questions were more detailed and specific to the design and ownership of the site, facility and the multi-barrier system used to isolate radioactive material, as well as the geological features desired to build a safe site.

In potential siting communities around the Bruce nuclear generating station, we heard interest in understanding the difference between the NWMO project for managing used nuclear fuel and Ontario Power Generation's low and intermediate level waste (LILW) DGR project in Kincardine. A number of participants asked if this project will result in one repository for all of Canada's used fuel, or if additional repositories or an expanded repository would be required if Canadians continue to produce nuclear power beyond the life spans of currently existing reactors. Related to this were questions designed to confirm that the repository would not accept imported waste from the United States or any other nuclear nation.

We also heard interest in understanding:

- How will the facility affect our use of the land, e.g., agriculture, cottage and rural areas, tourism? How can we ensure growth is manageable?
- What kind of geology is the NWMO looking for? What is it that the NWMO likes about plutons?
- Why not build in an existing mine?
- Why build at 500 metres of depth? Is this below groundwater?
- What happens if the NWMO cannot find a willing and informed host community?
- How will the waste be placed into the facility?
- How will APM interact with other large projects like the TransCanada Pipeline?
- What will the project look like in the various stages of work?

Who Pays for APM?

The financial aspects of the APM Project were also a frequent interest for open house visitors. People asked for clarification on how the project is funded and for current cost estimates for the project and its various phases of work. The cost of transportation was a recurring topic of interest, too, as many citizens asked for clarification on the cost of the transportation vehicles and Used Fuel Transportation Packages (UFTP) that will be used to move fuel bundles to a deep geological repository, as well as how funding would be assured over the very long term. People were interested to learn more about the “polluter pays” concept that funds the NWMO’s work through regular contributions by Canada’s nuclear power companies into trust funds used exclusively for used nuclear fuel management, that the trust funds currently contain about \$3 billion to pay for APM (at end of 2013), and that the funds are audited annually by independent external auditors.

Beyond questions of cost, there was also interest in understanding: how we can be sure that funds put aside for this project would be secure into the future; and who will ultimately own the repository and the used nuclear fuel bundles, after they are emplaced for long-term management.

III. THE SITE SELECTION PROCESS

In May 2010, the NWMO initiated a process for selecting a willing and informed host for a deep geological repository and Centre of Expertise, having collaboratively developed the process with experts and interested Canadians over a two-year period. Communities interested in learning more about the project often asked questions about the mandate of the NWMO, the steps in the Site Selection Process, and the implementation schedule as part of their initial learning. General questions and comments received in 2014 on this topic revealed a desire among residents and visitors from neighbouring communities (i.e., those communities nearby to communities involved in the siting process) for a better understanding of how the process was developed and how communities become involved in site selection activities.

As site selection moves forward, studies will extend into the surrounding areas, and we are increasingly hearing from residents living outside of the interested communities. Interest has been expressed in the details of regional studies, especially about the timing of regional involvement and the manner in which this will be managed. Many expressed the view that it is important to begin regional discussions sooner rather than later.

Many people were interested in how the NWMO would approach the engagement of surrounding communities, including Aboriginal communities. The importance of respectful engagement with these communities was a frequent discussion point for both Aboriginal and non-Aboriginal visitors to NWMO public events. People asked broad questions about the constitutional rights of Aboriginal peoples, the scope of the engagement program planned, which communities would be engaged, and scheduling of roll-out. They also expressed concern about what would happen if surrounding communities are ultimately not interested in being involved in the project.

Willingness

The concept of willingness was a subject of discussion in every one of the communities involved in the learning process. For some people, the idea that the NWMO would only site a repository in an informed and willing host community was an impressive one, though a few opponents were doubtful of such claims. Many people we spoke with underlined the importance that the decision to host the project not be made solely by elected officials but require an expression of willingness by residents in the community at a grassroots level. Many were reassured to learn that the Council can only decide if the community continues to be involved in learning more. It cannot decide alone that the community will host the project.

Open house visitors shared with NWMO staff members their views about the ways in which their community might demonstrate willingness, and the need for the majority of residents to be in favour of moving forward with the project in order for the community to proceed. Many grappled with how exactly this willingness would be defined and measured (e.g., a referendum), and the level of support that would be required to consider the community willing.

Conversations on these topics tended to demonstrate the ongoing knowledge and capacity building occurring in potential host communities, and often elicited positive responses from individuals who were previously concerned about the siting process based on a lack of up-to-date or erroneous information. For example, many residents were happy to hear that the siting process is open and voluntary, requiring a compelling demonstration of willingness before any agreement with a host community can be signed. It was also a relief to some to hear that the site selection process will proceed slowly and collaboratively so that residents can inform themselves at their own pace, and that interested communities can opt out of the process any time before a formal agreement is signed.

Many were also reassured that the Site Selection Process requires the involvement of surrounding communities and Aboriginal peoples in learning and decision making. Some people asked how siting decisions will be made if neighbours and Aboriginal peoples are not in favour of proceeding. They identified this as an important question that will need to be addressed as the siting process proceeds.

IV. TRANSPORTATION

Used Fuel Transportation Package

The transportation of used nuclear fuel was a significant theme in all engagement activities in 2014. The following is a broad description of the discussions we had with people about transportation. A more detailed review of our discussions with the public, entitled *2014 Transportation Themes: What We Heard on Transportation from Working with Communities*, is available on the NWMO website

In 2014, a recently developed transport trailer hauling a Used Fuel Transportation Package (UFTP) exhibit visited many of the communities engaged in learning more at least once over the year. The exhibit also travelled to a variety of neighbouring communities and municipal conferences.

The most common words used to describe the UFTP exhibit were “robust” and “impressive”. People noted how pleased they were to see it and have the opportunity to ask questions. Many also told staff that the exhibit demonstrated a commitment to safety and rigour in NWMO transportation planning. Seeing the UFTP had a transformative effect for many who reported having concerns about transportation safety. Even among those who had a good base of knowledge about APM, seeing and touring the UFTP exhibit built up their confidence in the project’s safety case, and clearly helped to inform, address misconceptions, and allay some concerns.

The most common subset of questions asked about transportation was related to learning more about NWMO plans to protect the safety of people and the environment during transportation and how the integrity of the used fuel containers would be ensured. We heard this from all communities involved in learning more. These questions were addressed by guided tours and one-on-one discussion with NWMO transportation engineers, a short video dedicated to transportation and UFTP safety testing, and a variety of NWMO communications materials that were available at public events in 2014.

Many visitors wanted to learn more about the design of the UFTP and were impressed to see videos demonstrating how used fuel transportation packages have been tested to withstand various accident scenarios. People asked many questions about the UFTP, such as choice of container shape and fabricating material, the purpose of the impact limiter, and the integrity of the container in the case of an accident involving water, fire or terrorist attack. These questions often reflected a strong view that people and the environment, including land, potable water, and water bodies must be protected during transportation.

Safety En Route

Community residents and local First Responders alike wanted to understand how used nuclear fuel can be transported safely. Common questions asked at public events included:

- How can we be confident that this waste can be transported safely and securely, that the cask will not open during transport?
- Will the public or the environment be exposed to radiation through transport? How about the truck driving staff?
- How will transportation and the UFTP be regulated? Has the UFTP already been licensed?
- Is safety affected by extreme winter weather and road conditions in the North?

To further probe this issue, many people posed a variety of hypothetical worst-case scenarios for transportation safety to NWMO staff members, involving accidents in which the UFTP would encounter extreme and prolonged heat, downed electrical infrastructure, water submersion, improbable container breaches requiring emergency response, and derailment in the case of train transport.

Emergency response measures and protocols to ensure safe and secure transportation were also a frequent area of discussion with visitors to NWMO events. Local first responders tended to ask the most detailed questions in this category; for example, about emergency response planning, jurisdictional mandates, and organizational responsibilities among first responder organizations.

The security of shipments was also a frequent subject of conversation at these events. People wanted to better understand how loads would be secured from malicious threats, including terrorism incidents and theft. Specific interest was shown in how the NWMO planned to track vehicles on the road, monitor environmental and road conditions, and train truck drivers. First responders in particular wanted to better understand the scope of likely threats.

Protecting Water

Community members wanted to understand the potential for the APM project to endanger local water sources, particularly in the case of a transportation accident, and sought details about how the NWMO would maintain the safety of water, especially the Great Lakes and local sources of drinking water.

Visitors to NWMO public events posed a variety of hypothetical scenarios:

- If the UFTP became submerged at depth during a transportation accident, would the water body and watershed be safe?
- How would the UFTP be retrieved? What equipment would be used? Is this equipment available in my area and are people trained to use it? How would this equipment be dispatched?
- If clean-up were necessary, how would this be done? Who would be called in to do the clean-up?

Logistics

Another common subset of questions was related to transportation logistics. People were interested in how the waste would be moved from its current location to the repository. They wondered where the waste was currently located, and wanted to know the nuts and bolts of how it would be loaded onto and unloaded from the truck. Questions also included the routes and the modes (e.g., road, rail, or ship) that were being considered and whether the NWMO had selected preferred routes and modes yet.

Some of the specific recurring questions included the following:

- Why would NWMO consider shipping the waste long distances instead of choosing a site close to where it is currently stored?
- How many containers will need to be shipped?
- How many shipments are anticipated per day, week, and month? Will shipments occur only during daylight hours?
- Who will pay for transportation of wastes?
- Will roads in the North have to be upgraded, and will new roads be needed?
- What other infrastructure upgrades will be needed, e.g., telecommunications?

V. AREAS OF STUDY

Comments and questions about specific community features were prevalent during 2014 as the NWMO continued preliminary assessments. Most frequently, these questions revolved around the appropriateness of the geological features in the specific communities and the findings emerging from

early (Phase 1) preliminary assessment work and subsequent (Phase 2) work, such as Airborne Geophysical Surveys and engagement with communities and their neighbours.

Phase One Studies

In the communities still undergoing early preliminary assessments of suitability, residents were interested in getting a better understanding of their area's geology (e.g., *What type of geology is potentially suitable for the project and does this geology exist in or around the community; and what is known about local topographical and seismic features?*). A great many visitors to NWMO events demonstrated knowledge on geologic topics, based, in many cases, on extensive work experience in the mining industry. They were appreciative of the opportunity to discuss their area's geology with NWMO technical specialists, to ask specific questions, and have the answers tailored to their interests.

Some residents were also interested in learning more about the local changes that the project would bring, e.g., jobs, economic growth, land-use changes, and the preservation of community character.

Phase Two Studies

In addition to questions about community features and in the spirit of community-NWMO partnership, many visitors offered helpful information and insight to NWMO to help with the collaborative planning and implementation of Airborne Geophysical Surveys and information to be gathered through local observation of geological features. Many stayed for an hour or more at community open houses that focused on these topics, studying published maps of the areas to be studied and speaking with NWMO staff members. Many offered helpful information about these potentially suitable areas, such as current known land uses in the parcels of land being studied and historical details known only within the community.

For example, advice was provided on how best to gain access to specific study areas, the individuals and groups currently using land and who to talk with for additional details about these areas. These conversations were often very detailed and provided invaluable insight into local features, as well as insight into existing networks of land-users (i.e. trappers, hunters, cottagers) who must be engaged as studies progress. Information on environmental features such as flora and fauna were also offered, such as known habitats and migration patterns.

Questions were frequently asked about how the next steps will unfold in communities, including the timeframes for specific activities. For example:

- When will investigation activities (such as drilling core samples) start in my community? Which sites have been selected for these activities?
- What activities can I expect to see in my community during airborne surveys and how will wildlife be protected during these studies?
- What benefits can my community expect from hosting the project (e.g., financial support, jobs and job types, infrastructure, and supportive industries) and when would these benefits be seen?

- Will hosting the project also bring challenges that need to be managed, and how will the NWMO deal with these, e.g., stigma, property value shifts, fluctuations in population size as the process proceeds?
- What is the next step after airborne geophysical surveys are complete?

Addressing Issues and Concerns

The vast majority of the questions received related to community features were specific to those communities. Fully responding to these will require the completion of the preliminary assessment study phase of work and the publication of findings; however, the NWMO has committed to provide significant or important findings to accountable authorities in the communities as they arise, especially if they might impact the community's decision to carry on in the site selection process.

Early in 2014, this commitment to sharing important findings resulted in the conclusion of preliminary assessments in two communities in the site selection process when geophysical findings indicated very limited potential to meet the geoscientific criteria required to host a deep geological repository. The decision to end studies in Saugeen Shores and Arran-Elderslie was viewed by some people as further evidence of the strength of the NWMO process, and our commitment to openly and collaboratively implement the site selection process with communities.

A number of people were interested in understanding the mandate and operational procedures of the CLCs. Comments, criticisms and suggestions about the operation of these CLCs were raised over the course of 2014 as these community committees continued to learn, refine and advance their programs, and strengthen their procedures and communications with the community. Some siting communities had previously been involved in siting processes for high-level and low-level historic wastes and were interested in knowing more about the differences between these and the other projects. Others wanted to discuss with NWMO the potential for their community to accommodate some of the project's needs, such as housing and services for the number of new families expected.

VI. OTHER OBSERVATIONS

In 2014, the NWMO continued to listen to the many types of online conversations taking place in news media and through social media channels and other public websites regarding APM and ongoing site selection work. News media stories, letters and opinions/editorials, social media sites, blogs, and other webpages continue to provide an important space for Canadians to voice their opinions on the NWMO's work, to engage with friends and neighbours, and as a tool to communicate with town officials, government representatives, and non-governmental organizations relevant to the Site Selection Process. Beyond written expressions of opinion, the NWMO has also observed other forms of community expression such as the circulation of petitions, rallies, and increased interest in participating in Community Liaison Committee meetings. The NWMO acknowledges these important contributions to the discussion around APM as all comments, suggestions, and other input help to inform the implementation of Canada's plan and ongoing engagement with Canadians.

Broadly, discussions of APM in local news and social media tended to focus on the local socio-economic effects of the project, and the position that APM represents a generational obligation to safely and securely isolate used nuclear fuel. A main difference between the opinions expressed in traditional news media versus social media is that traditional news media sources are more likely to reflect a balanced spectrum of opinion, whereas social media conversations often tend to be one-sided.

Local Conversations

Some residents of siting communities have taken to opinion pages in local news media, as well as social media platforms such as Facebook and Twitter to present, share, and discuss their views on a variety of topics, including: nuclear safety and science; NWMO corporate transparency, accountability, and independence; definitions of environmental and social stewardship; Aboriginal engagement and land rights; and, local council support for the Learn More process. The creation of online discussion spaces has occurred in virtually every community involved in the siting process, and participation at monthly Community Liaison Committee meetings has, in some cases, increased significantly in 2014 as community members become more aware of the project and wish to learn more.

The NWMO has also observed other forms of participation on the subject of radioactive waste management from within Preliminary Assessment communities, from interested regional neighbours, and by American stakeholders, primarily in Michigan. For example, some local and regional groups have distributed online and door-to-door petitions, while others presented information to communities via webinars. Petitions have expressed concerns over issues such as water safety and have incorrectly advanced the notion that any further participation in the voluntary Learn More Process would ultimately lead to a non-voluntary siting decision. Local council resolutions opposing any DGR siting within the Great Lakes Basin have been passed by some communities along the Canadian and American shores of the Great Lakes, and public town hall meetings have been organized to share concerns and ask important questions.

Other Discussions

Continuing a trend seen throughout 2013, the largest share of the broader online conversation this year resulted from discussions surrounding the perceived proximity of many siting communities to the Great Lakes Basin. With particular concern over potential DGR locations near Lakes Huron and Superior, many online social media users have framed their opposition to nuclear waste management projects near the Great Lakes as an expression of concern over long-term water safety.

Another common online discussion was in reference to a radiological release in early 2014 at the Waste Isolation Pilot Plant (WIPP) in New Mexico, which generated passionate discussion of the safety case for underground nuclear waste storage. Some groups and individuals opposed to the implementation of APM suggested that 'Rolling Stewardship', or the continuous storage of waste above-ground utilizing Hardened On-Site Storage, should be considered as an alternative to the deep geological repository.

Other common themes that emerged from online activity, particularly among those opposed to the implementation of APM, included transportation safety and related logistics, critical discussions

incorrectly suggesting that NWMO was bribing communities to participate in the siting process, and arguments in favour of fundamentally changing Canada's current nuclear fuel cycle. Many of these active social media users and websites continue to advocate in favour of decommissioning existing nuclear power plants and the large-scale transition to renewable and green power alternatives.

VII. INPUT ON STRATEGIC PLAN

Every year since 2007, when the Government of Canada selected Adaptive Phased Management (APM) as the preferred approach for the safe long-term management of Canada's used nuclear fuel, the NWMO has published a five-year strategic plan. Titled *Implementing Adaptive Phased Management*, the Plan describes how the NWMO will implement APM in the planning period.

To encourage public review and comment, the Plan is distributed by mail to 2,500 individuals and organizations that had previously expressed interest, and it is posted on the NWMO website with an invitation to comment by making a submission, sending a letter, or filling out the comment form.

Comments received about NWMO strategic objectives in 2014 were largely positive, and most people found the objectives and associated activities appropriate. Many suggested revisions were minor and accommodated in the final Plan. A *What We Heard* document was also published detailing the changes and refinements in the final Plan, and is available on the NWMO website (www.nwmo.ca/what_we_heard).

Along with comments used to revise the draft Plan, we received comments about the ongoing challenges and issues that will need to be addressed in the next five years as part of implementing Canada's plan and that will need to be considered in the development of future plans. The input received on these challenges is briefly described below:

Ensure understanding of the project – A number of commenters highlighted the importance of building broad public awareness and understanding of APM, and made suggestions as to how the Implementation Plan could contribute to this goal by providing additional details and information. Even though the Implementation Plan is not intended to serve as a comprehensive description of APM and the deep geological repository, the nature of some questions and comments received indicated that the Plan is an important document for communicating to the public the status of the project and specific details about project components, e.g., the Centre of Expertise, the cost and resource allocations associated with APM, etc.

Consider the potential impacts of the project over its lifetime – Some of the input we received directed us to begin considering, in detail, the lifetime impacts of APM on a potential host community. For example, one individual suggested "there needs to be much more mention of what the project will cause to happen over the lifetime of the project," and that communities will need to consider how the deep geological repository will be managed in the long run. Another individual urged us to consider future health and safety procedures with a list of suggestions, and one commenter suggested the

NWMO speak to residents of potential host sites to better consider the potential impacts to important environmental components. This last suggestion is an activity being carried out as part of preliminary studies, and which leverages cultural and environmental traditional knowledge gained through engaging Aboriginal people, an approach which was noted and valued by a number of commenters.

Build confidence in the safety of transporting used fuel – Interest and awareness about the issue of transporting used nuclear fuel continues to grow, and a number of comments highlighted the importance of enhancing public confidence in the safety of transportation plans. Engaging the public in potential host communities and along potential transportation routes and addressing their questions and concerns continues to be noted as a challenge which will need to be addressed going forward.

Gain social acceptance for the project – The NWMO continues to hear advice regarding the challenges associated with building public support within a potential host community. A number of commenters noted their support for the NWMO approach to engaging citizens in potential host communities, as well as the importance of continuing a program of creating opportunities for high-quality public engagement.

Appropriately and effectively involve Aboriginal peoples – Commentary on NWMO efforts to engage with Aboriginal peoples was largely positive, and one submission commended and thanked the NWMO for the proactive and collaborative work we have accomplished up to this point. Some suggested changes were also offered to the text of the Plan in order to communicate the NWMO commitment to engaging Aboriginal peoples and First Nations governments, in a respectful, meaningfully and transparent manner. It was also strongly advised that the NWMO actively consider the valuable input offered to the NWMO by Aboriginal communities, and one individual advocated for university endowments and/or the creation of scholarships to encourage Aboriginal students to pursue studies in engineering and science.

VIII. FOCUS GROUPS

In order to supplement ongoing engagement of communities as part of the siting process and to further build its understanding of public perspectives about transportation, the NWMO commissioned Environics to conduct a small number of focus group discussions. In these focus group discussions, a cross-section of citizens helped identify and explore the early questions that will need to be asked and answered as the NWMO begins discussions about the transportation of used nuclear fuel. The detailed report from these focus groups, entitled *Public Attitude Research – Understanding the Public Context for the Transportation of Used Nuclear Fuel*, is available on the NWMO website.

The top issues raised by participants concerned which mode of transportation the NWMO would use to transport used nuclear fuel to the permanent repository, and what effects this could potentially have on the surrounding area during the transportation and in the event of an accident. Participants wanted to know about the potential for accidents and what would be the consequences; the safety and robustness of used fuel transportation packages; and how any risk to the public would be avoided.

Participants were interested in the information provided in the NWMO video on this topic, and thought that it addressed many possible scenarios and answered many of their questions about the potential for issues in transportation of nuclear waste. The detail that stood out most to participants was the extent of the testing on the containers and the international scale of this testing. Participants were also interested in, and reassured by, the robust regulatory framework in place for the transportation of used nuclear fuel and the strong international experience and track record with the safe transportation of used nuclear fuel.

IX. CLOSING THOUGHTS

Engagement is one of the Nuclear Waste Management Organization's fundamental values, and we seek the participation of all communities of interest in dialogue to help implement Canada's plan.

In 2014 we heard from and engaged a broad range of interested communities, individuals and organizations on an array of topics related to our mission and work program. This dialogue is reflected in and supported by discussions during engagement events such as open houses and trade show events, other in-person conversation, community group briefings, direct correspondence, organizing learning events in the community and at conference venues, and the production of informational materials focused on areas of interest expressed through dialogue. The production of *What We Heard* documents is part of meeting our commitments to engagement and transparency, and we publish one or more annually on our website or as part of our *Implementation Plans*, or annual and triennial reports.

The NWMO continues to invite comments and suggestions about its work programs and plans, and thanks all those communities, individuals and organizations who continue to lend their thinking to ensuring the long-term containment and isolation of Canada's used nuclear fuel today and for generations to come.