

**Municipality of South Bruce**

Expression of Interest

Provision of Professional Services

Nuclear Waste Management Organization Site Selection Process

December 9, 2020

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## SCHEDULES

- Schedule A – NWMO Project Timeline
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## 1. Objective

The objective of this non-binding Expressions of Interests (EOI) for professional services is to allow Consultants to present their qualifications, experience and conceptual approach to the Municipality for the purpose of selecting a team that will assist the Municipality in its assessment of the community's willingness to host the Project in the Municipality of South Bruce.

As described below, the Municipality anticipates that it will retain multiple Consultants covering a range of areas of expertise to perform the required work with a Lead Consultant to coordinate such efforts. A Consultant has the option of responding to one or more of the Areas of Work in their Submission.

## 2. Interpretation and Addenda

### A. Interpretation

If a Consultant has a question as to the meaning of this EOI or finds any ambiguity, inconsistency, or omission, the Consultant shall make a written request for an official interpretation or correction to the individual listed below. Such requests must be received by the Municipality no later than 1 P.M December 18<sup>th</sup>, 2020.

All inquiries must be made by email and directed to:

David Rushton  
Project Manager  
Municipality of South Bruce  
[drushton@southbruce.ca](mailto:drushton@southbruce.ca)

### B. Addenda

All interpretations, corrections, or additions to this EOI will be made only as official addendum that will be posted to the Municipality's website (<https://www.town.southbruce.on.ca/>) and it shall be the Consultant's responsibility to ensure they have received all addenda before submitting a Submission.

Any addendum issued by the Municipality shall become part of the EOI and must be incorporated in the Submission where applicable.

### C. Definitions

**Act:** Means the *Nuclear Fuel Waste Act*, S.C. 2002, c. 23.

**Areas of Work:** Means one or more of the Areas of Work identified in Schedule C .

**Consultant:** Means any eligible entity submitting a Submission.

**EOI:** Means this Expression of Interest invitation to engage a Consultant to perform one or more the Areas of Work.

**Lead Consultant:** Means a Consultant submitting a Submission on the Lead Consultant Area of Work included in Schedule C.

**Municipality:** Means the Municipality of South Bruce.

**NWMO:** Means the Nuclear Waste Management Organization.

**Project:** Refers to the potential establishment of a facility operated by the NWMO for the purpose of the long-term storage of Canada's used nuclear fuel in the Municipality.

**Selected Consultant:** Means the Consultant or Consultants selected to undertake one or more Areas of Work.

**Statement of Work:** Means one or more of the Statements of Work included in Schedule D.

**Submission:** Means the submission of a Consultant made in response to this EOI.

### 3. Project Background and Next Steps

#### A. Background

The NWMO was established under the Act and has been mandated to examine a range of approaches for the long-term management of used nuclear fuel. Following a three-year study involving citizens, specialists, and Indigenous peoples in every province and territory, the NWMO has developed a long-term management approach for the storage of used nuclear fuel in a deep geological repository, that is socially acceptable, technically sound, environmentally responsible and economically feasible.

Facilities associated with the identified strategy for the long-term management of used nuclear fuel include:

1. A **deep geological repository** to contain and isolate the used nuclear fuel over the long term using a multiple barrier system;
2. **Surface facilities** to support the ongoing activities at the site, including reception, repackaging and transfer of the used fuel bundles to the underground repository, administration, security, quality control, sealing materials production and all other function required to support the safe operations of the repository; and,
3. A **centre of expertise** that will be home to a technical and social research program, and a technology demonstration program, involving scientists and experts from a wide variety of disciplines.

#### B. The NWMO's Site Selection Process

In 2010, the NWMO initiated a multi-year, community-driven process to identify a location for the necessary facilities for the Project.

At the outset of the site selection period, the NWMO considered 22 municipalities and Indigenous communities that expressed interest in learning more about and exploring their potential to host the facility.

In March 2012, the Mayor and Council of the Municipality passed a resolution requesting an initial screening of the community's suitability to participate in the NWMO's site selection process. Since passing the screening process, the Municipality has been engaged in assessing whether the introduction of a deep geological repository would be a good fit for the community. Amongst other measures, the Municipality established a Community Liaison Committee to promote learning about the NWMO, the Project, and the process to identify an informed and willing host community.

Through its site selection process, the NWMO has gradually narrowed the potential host communities. The site selection process has involved technical site evaluations as well as social engagement in conjunction with the local municipalities to assess safety and the potential to build supportive and resilient partnerships and establish key criteria to assess the suitability of each area.

In January 2020, the NWMO announced that it had assembled sufficient land in the Municipality to allow for further studies to be conducted. Upon achieving the required land assembly, the NWMO announced that the Municipality – along with Ignace, Ontario – is one of two final potential siting areas for the Project. The NWMO announced the acquisition of further lands in South Bruce in October 2020.

The NWMO's objective is to make a final decision on site selection by 2023. The NWMO has stated that it will only locate the Project in a community that is an informed and willing host. The NWMO would enter into a hosting agreement with the selected community.

As part of the site selection process, the NWMO will evaluate the study area to ensure that the lands meet the scientific and siting factors required to ensure safety for present and future generations and will be broad in its scope.

To ensure that the study area consists of a rock formation with desirable characteristics in terms of their geological, hydrogeological, chemical and mechanical nature, the NWMO will be undertaking borehole drilling in the spring of 2021, the testing from which will be used to develop a better understanding of the general geology and hydrogeology in the area.

In addition to evaluation of test samples as a result of the boreholes, the NWMO intends to conduct a robust evaluation of the study area and the Municipality as a whole, including geophysical studies, environmental monitoring, Indigenous cultural verification, an assessment of the Municipality's transportation and servicing infrastructure, and an evaluation of any potential species at risk and environmentally sensitive habitats that may be impacted. The assessment will also consider any potential noise and air quality impacts throughout the lifecycle of the Project that may impact the current and future residents of the Municipality.

The Municipality expects that, through this evaluation, NWMO will prepare a series of reports and plans that will identify if the project can be safely implemented in the Municipality and whether it has the potential to meet or exceed the requirements of regulatory authorities and the community.

### **C. The Municipality's Assessment Process**

To assist the community in making a decision on willingness, the Municipality intends to lead studies in areas of interest identified by the community and to undertake technical peer reviews of the studies and plans prepared by the NWMO. A list of the Areas of Work that will be subject to study or peer review can be found in Schedule C.

The objective is to provide community members with independent assessments on the potential impacts and benefits of locating the Project in the Municipality.

The Municipality has published a Project Visioning report based on community workshops held in January 2020 that identifies areas of community concern and opportunities. Based on the Project Visioning report and further public consultation, the Municipality has passed a Council resolution endorsing thirty-six principles that will guide its assessment of willingness.

At this stage, the precise scope and timeline for the work to be undertaken by the Selected Consultant has not finally been established. The Municipality anticipates that the bulk of the Selected Consultant's work would be conducted in 2021 and 2022 as part of the site selection process.

### **D. Future Phases**

Future phases of the Project are identified in Schedule A attached to this EOI and broadly include the preparation for the achievement of the necessary regulatory approvals, preparation for and monitoring of the required construction facilities to establish the facility, operation and extended monitoring of the facility itself, and the potential future decommissioning of the facility. Depending on the outcome of the site selection process, the Municipality may require further assistance from the Selected Consultant in future phases of the Project.

A Study Area Map is attached as Schedule B.

### **E. Key Resources for Review**

For more detailed and technical information regarding the Project and its status, please refer to the scoped list of resources below:

#### Technical Studies

- [Project Description](#)
- [Regulatory Oversight Summary](#)
- [Deep Geological Repository Conceptual Design](#)
- [Facilities Associated with Deep Geological Repository](#)
- [Safety – Protecting People and the Environment](#)

- [Transportation Requirements](#)

#### NWMO Project Activity and Timeline

- [Site Selection Process](#)
- [Steps in Site Selection](#)
- [Site Selection Criteria](#)
- [Public Consultation](#)
- [Indigenous Knowledge and Consultation](#)
- [Environmental Assessment Study Criteria](#)
- [Future Steps](#)

#### South Bruce Status and Next Steps

- [NWMO Site Selection – South Bruce](#)
- [Completed Steps](#)
- [Current Activity](#)
- [Future Steps](#)

#### Municipal Process

- [Project Visioning Report](#)
- [Council Resolution Endorsing Principles](#)

### **4. Invitation**

#### **A. Scope of Work**

The Municipality anticipates that it will require a range of consultants to assist with the willingness process. The Municipality expects to divide the required work between multiple Consultants with a Lead Consultant to coordinate work where required.

The Areas of Work are identified in Schedule C.

#### **B. Submission Content**

All Submissions must include the following information to facilitate the review and evaluation process.

#### Areas of Works and Work Plans

A Consultant must identify the Areas of Work that it proposes to perform and provide a preliminary work plan for the performance of each identified Area of Work.

A Consultant may respond to one or more Areas of Work. A Consultant is not obligated to respond to all of the Areas of Work in a particular topic area in its Submission. For example, a Consultant could identify “Local Hydrology and Water Quality – Baseline” as an Area of Work within its Submission without including other Areas of Work within the category of “Technical Peer Reviews – Environment” in its Submission.

The Municipality encourages Consultants to explore sub-consulting arrangements to respond to as many Areas of Work as possible.

### Understanding of Project and Extent of Undertaking

A Consultant must provide a discussion detailing their understanding of the Project and their ability and approach to performing the identified Areas of Work. The Submission must include a description the overall scope and objectives, noting any particular issues that require specific attention, and should acknowledge and detail their understanding of all deliverables.

### Relevant Qualifications and Experience

The Submission must include a list of specific experience with the tasks in the identified Areas of Work and indicate proven ability in preparing and/or peer reviewing impact assessments, with particular emphasis placed on those relative to the nuclear sector and large infrastructure projects. A Consultant should specifically identify all work experience in nuclear sector and identify the party by which it was retained for such work if it is possible to do so.

The Submission should highlight experience performing similar tasks for municipalities or other public authorities and familiarity with municipal processes.

### Consultation

During the course of the Project, the Consultant will be required to consult and engage with:

- Mayor and Council
- Municipal staff
- Members of the Community Liaison Committee
- The Lead Consultant and other advisors and consultants retained by the Municipality
- Representatives from the NWMO
- Residents of the Municipality and the surrounding region including Indigenous communities

Personnel from the Consultant will be expected to attend and present at public meetings to be conducted virtually or in-person.

The Submission should provide details of the Consultant's experience with and proposed approach to consultation.

### Proposed Team Personnel

A Consultant must provide evidence of the team personnel (employees and subconsultants) that will ensure the achievement of the identified Areas of Work. The

Consultant should identify, in their Submission, and any work which is being subcontracted.

The Consultant shall provide the following details for each proposed team member and subconsultant:

- Name
- Firm Name
- Professional Qualifications
- Years of Experience
- At least three (3) examples of relevant project experiences (Project description, role, expertise)
- If subconsultant, indication if previously worked for the Consultant
- Description of anticipated role in performing in a particular Area of Work

### Fees and Budgets

A Consultant must provide the hourly rate for all subcontractors and team personnel.

A comprehensive fee proposal is not required at this time. A detailed budget will be prepared with the Selected Consultant in conjunction with the Municipality.

The Municipality expects the Consultant to provide information on its approach to preparing and tracking budgets for work of this nature.

The Municipality is open to fee proposals based on a method other than hourly rates.

### Timeline

The NWMO anticipates completing the site selection process by end of 2023. The Municipality expects the bulk of the work on the Areas of Work to be performed in 2021 and 2022.

The timeline for any future stage beyond the scope of this EOI is subject to negotiation and discussion with the NWMO. All new timelines will be discussed in detail with the Consultant. Refer to Schedule A for additional detail regarding future phases.

### Conflict of Interest

The Submission should provide a description of any actual or potential conflict of interest that the Consultant may have in performing any identified Areas of Work and a description of how the Consultant proposes to manage any conflicts that may exist or arise during the term. Failure to comply with this requirement may cause the Submission to be rejected.

The Municipality reserves the right to disqualify from further consideration Submissions which in the Municipality's sole opinion demonstrate a conflict of interest.

The Municipality will not consider any Consultant that is currently engaged by the NWMO to perform work related to the site selection process in South Bruce to be eligible for selection as the Selected Consultant.

### **C. Submission to the Municipality**

All Submissions must be submitted digitally to [drushton@southbruce.ca](mailto:drushton@southbruce.ca) on or before 2 P.M. January 5, 2021. Late submissions will not be accepted or considered.

## **5. Evaluation of Submissions**

### **A. Initial Review**

An initial review of each Submission will be completed by a selection committee consisting of the Municipality and its advisors. The Municipality may reject any Submission during the initial review at its discretion.

### **B. Interviews**

The Municipality will determine in its sole discretion which, if any, responding Consultants will be interviewed. If the Municipality elects to interview a Consultant, the Consultant will be given the opportunity to discuss their Submission in more details during the interview.

To the extent it is possible to do so, interviews will be conducted in person at the Municipality's offices in accordance with the applicable COVID-19 protocols then in force.

### **C. Evaluation**

The Municipality's evaluation of the Submissions will include, but is not limited to, the following considerations:

- A compelling demonstration of the Consultant's understanding of the Project and the NWMO's site selection process
- The qualifications and experience of the Consultant as it relates to performing any identified Areas of Work
- The number of Areas of Work included in the Submission, the Consultant's ability to work with other Consultants and any sub-consulting arrangements made by the Consultant
- In the event of Lead Consultant, the Lead Consultant's experience in managing large scale study and review processes
- The Consultant's rates, ability to track budgets any fee proposal
- The Consultant's experience working with municipalities and its understanding of municipal requirements and processes
- The Consultant's capacity to perform the required work and the viability of the Consultant's preliminary work plan to achieve identified Areas of Work
- The Consultant's ability to effectively manage the identified Areas of Work and meet critical timelines
- The Consultant's experience in the nuclear sector where relevant to an identified Area of Work

## **D. Notification**

After completion of the evaluation process, the Municipality will notify all Selected Consultants and may proceed to discuss terms of a contract with one or more Selected Consultants for one or more of the identified Areas of Work.

The Municipality shall have the option of creating a roster of Selected Consultants for each Area of Work.

## **6. Terms of Submission**

This EOI is not intended to create any formal legally binding bidding process and does not commit the Municipality to select a Consultant or proceed with a Submission.

The Municipality may select a Consultant without accepting all of the Areas of Work identified in that Consultant's Submission. The Consultant recognizes the Municipality may accept one or more of the identified Areas of Work from its Submission at the Municipality's discretion.

The Consultant recognizes the Municipality's right to accept one or more Submissions for the same identified Areas of Work, to seek further information or clarification from any responding Consultant, and to negotiate directly with any responding Consultant.

Any contract awarded as a result of this EOI will be non-exclusive. The Municipality may, at its sole discretion, purchase the same or similar services from other sources during the term of any contract.

The submission of a Submission constitutes a waiver of any action by the Consultant resulting from the Municipality's acceptance or rejection of any Submission.

Each Consultant must satisfy themselves as to the full requirements of each Area of Work included in their Submission. There will be no consideration of any claim, after Submissions are submitted, if there is a misunderstanding with respect to the minimum requirements indicated in this EOI. Should the Consultant require more information nor clarification on any point, it must be obtained prior to the submission of the Submission.

The Municipality makes no representation or guarantee of the value or volume of work the Selected Consultant may receive over the term of the relationship.

## **7. Accessibility**

All consultants will be required to recognize the Municipality's obligations under the Accessibility for Ontarians with Disabilities Act, 2005 (AODA) the Ontario Human Rights Code and obligations to people with disabilities under any other law and will be

committed to complying with both the Ontario Human Rights Code and the AODA.

## **Schedule A – NWMO Project Timeline**

It is anticipated that a preferred site will be selected by the end of 2023. The following lays out an anticipated timeline for the phased implementation of the deep geological repository. This timeline is provided to identify the future phases of this project and an appropriate scope of work and budget may be negotiated at the appropriate time, once further detail and information is evident.

1. Regulatory Approvals – 5 Years or More
  - Once a location has been selected as the preferred site, the NWMO will complete a comprehensive environmental assessment as required by the *Canadian Environmental Assessment Act* and will obtain a licence from the Canadian Nuclear Safety Commission for site preparation and construction. This involves a thorough, formal and public evaluation of safety.
  - This environmental assessment will require substantial and significant peer review to evaluate its contents and conclusions as to the future of the deep geological repository.
  
2. Construction of Underground Demonstration Facility and Deep Geological Repository – 10 Years or More
  - After receiving appropriate licences, the NWMO will begin construction of an underground demonstration facility, which will confirm the characteristics of the site before applying for an operating licence.
  - The NWMO will construct the deep geological repository at a depth of approximately 500 metres, consisting of a series of access and service shafts and a network of tunnels leading to placement rooms where long-lived used fuel containers will be safely sealed into the rock.
  - The NWMO will also construct surface facilities to receive transported used fuel, repackage this used fuel and prepare clay-based sealing materials.
  - The NWMO will also work with the community to develop infrastructure which may be required to support the future of the facility.
  - This stage of work will require ongoing monitoring and evaluation of the construction activities to monitor its impacts on the community.
  
3. Operation of Facilities – 30 years or more
  - After receiving an operating licence from the Canadian Nuclear Safety Commission, operation of the facility will begin. In operating the facility, the NWMO will transport used nuclear fuel from the interim storage sites in specifically designed transportation casks, repackage this used fuel in long-lived containers and place the containers in the deep geological repository with sealing materials as appropriate.

- This stage of work will require ongoing monitoring of the operation to monitor its impacts on the community.
4. Extended Monitoring – Potentially 100 years or more
    - The NWMO will work with the community, and potentially others, to conduct monitoring of the repository to support data collection and to confirm the long-term safety and performance of the repository system.
    - Future society will make a determination on the appropriate form and duration of monitoring.
    - The regulator will be involved in all decisions made about how monitoring will be conducted at the site.
  5. Decommissioning the Facility
    - The NWMO will work with the community and others, as necessary, to decommission the facilities. Future society will make a determination on the manner of final closure of the repository.

## Schedule B – Study Area Map



## **Schedule C – Areas of Work**

1. Lead Consultant
2. Communications Consultant/Advisor (Schedule D)
3. Municipally led Studies and Programs
  - Local Hiring Effects Study (Schedule D) and Strategy
  - Demographics
  - Tourism Industry Effects (Schedule D) and Strategy
  - Local Economic Development Study (Schedule D) and Strategy
  - Economic Development Program – Youth (Schedule D)
  - Agricultural Task Force/Agricultural Business Impact Study (Schedule D)
  - Willingness (Schedule D)
  - Effects on Recreational Resources (Schedule D)
4. Fiscal Impact and Public Finance (Schedule D)
5. Technical Peer Reviews – Environment
  - Community Report Back – Environment Program
  - Local Hydrology and Water Quality - Baseline
  - Local Geology including Groundwater and Soils – Baseline and Effects (Schedule D)
  - Local Atmospheric Conditions – Baseline
  - Local Terrestrial Species – Baseline (Schedule D)
  - Local Aquatic Species – Baseline
  - Local Avian Species – Baseline (Schedule D)
  - Species at Risk – Baseline
  - Ambient Radioactivity – Baseline (Schedule D)
  - Effects on Surface Water Study (Schedule D)
  - Ecological Effects Studies (Schedule D)
  - Environmental Effects Study (Radiation) (Schedule D)
6. Technical Peer Reviews – Infrastructure Improvements
  - Infrastructure Baseline and Feasibility (Schedule D)
  - Local Traffic Effects Study (Schedule D)
  - Road Conditions Effects Study (Schedule D)
  - Aggregate Resource Study (Schedule D)
7. Technical Peer Reviews – Socio-Economic
  - Effects on Community Safety (Schedule D)
  - Effects on Community Health Programs
  - Effects on Vulnerable Populations (Schedule D)
  - Effects on Local/Regional Educational Study (Schedule D)
  - Effects on Social Programs/Services (Schedule D)

- Effects on Well-Being
- Workforce Development Study (Schedule D)
- Local Hiring Study (Schedule D)
- Housing Need and Demand Analysis (Schedule D)
- Baseline Housing Study
- Emergency Services Study (Schedule D)
- Property Value Monitoring Program (Schedule D)
- Land Use (Schedule D)
- Regional Economic Development Study (Schedule D)
- Labour Baseline Study Program (Schedule D)

## **Schedule D – Statements of Work**

1. Communications Consultant/Advisor
  
2. Municipally led Studies and Programs
  - Local Hiring Effects Study and Strategy
  - Tourism Industry Effects and Strategy
  - Local Economic Development Study and Strategy
  - Economic Development Program – Youth
  - Agricultural Task Force/Agricultural Business Impact Study
  - Willingness
  - Effects on Recreational Resources
  
3. Fiscal Impact and Public Finance
  
4. Technical Peer Reviews – Environment
  - Local Geology including Groundwater and Soils – Baseline and Effects

- Local Terrestrial Species – Baseline
- Local Avian Species – Baseline
- Ambient Radioactivity – Baseline
- Effects on Surface Water Study
- Ecological Effects Studies
- Environmental Effects Study (Radiation)

5. Technical Peer Reviews – Infrastructure Improvements

- Infrastructure Baseline and Feasibility Study
- Local Traffic Effects Study
- Road Conditions Effects Study
- Aggregate Resource Study

6. Technical Peer Reviews – Socio-Economic

- Effects on Community Safety
- Effects on Vulnerable Populations
- Effects on Local/Regional Educational Study
- Effects on Social Programs/Services
- Workforce Development Study
- Local Hiring Study
- Housing Need and Demand Analysis
- Emergency Services Study
- Property Value Monitoring Program

- Land Use
- Regional Economic Development Study
- Labour Baseline Study Program

## **South Bruce Communication Support**

### **Objectives:**

To retain an experienced communications consultant to assist the Municipality of South Bruce as required in relation to the APM Project.

### **Duration:**

On an as needed basis until the end of 2023.

### **Services Required:**

- Provide communications and media training to Municipal Officials, including Council, Committee Members, and Staff.
- Assist in the creation of compelling and strategic messaging related to all aspects of the APM Project.
- Offer insights on social media trends and using social media platforms effectively.
- Provide concrete direction on expanding audience and increasing engagement and participation with stakeholders within, and beyond the Municipality.
- Offer tools and support for Crisis Communications and Management as required.
- Provide input on branding and reputation enhancement.
- Provide direction on clear, plain language communication that will reach local and regional stakeholders.
- Offer ongoing support for strong and effective web design and content.
- Review and support accessibility efforts in all outputs.

### **Participants:**

This study will involve the following participants:

- South Bruce Council, committee members and staff

### **Qualifications**

1. Outline your **experience** in supporting municipal governments, working with the nuclear industry or nuclear waste management, delivering crisis communications

## **South Bruce Communication Support**

and issues management and understanding the local socio-economic and geopolitical landscape.

2. Identify specific staff who will work on the Project, their roles and responsibilities in completing the Project work, and their individual experience.

## **Local Hiring Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Local Hiring Study is to maximize employment by the project of people residing within South Bruce, while sustaining the workforce that is needed by the existing businesses and the Municipality.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

A study (i.e., no field investigations or public engagement activities) will be conducted with the following specific objectives:

1. To describe the workforce needs of the project for both the construction and operation phases of the project.
2. To identify potential competing demands for that workforce as between existing local businesses and the Municipality.
3. To identify strategies to maximize local employment associated with the project while ensuring the community has a sufficiently skilled workforce to meet its ongoing needs.
1. To identify strategies to encourage businesses to bring their workforce into South Bruce as a means of addressing any potential shortfall between the needs of the project and the needs of the community.
2. Undertake an assessment of challenges and opportunities associated with maximizing local employment.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Summarize the labour force requirements for the NWMO APM Project for both the construction and operation stages of the project.
  - a. Efforts may need to be made to compare professional and trade employment categorizations used in the nuclear and energy sectors with categorizations used in local businesses
2. Summarize the key findings from the Local Labour Supply (baseline) Study that described expected labour force availability.

3. Undertake key person and local business interviews to confirm the anticipated demand of the businesses in South Bruce for the labour categorizations that are common to the project (e.g. trades, truck drivers, etc.).
4. Consider broad based strategies for local people to enter into professions in which there is expected to be local business and project demand.
5. Consider focused strategies for local people to be hired during the construction stage of the project, and thereafter become available to satisfy the workforce demands of the community.
6. Considered focused strategies for local people to be hired during the operational stage of the project. Given that the operational stage is some years away, preparing the local workforce for operations may by nature focus more on youth population. Time will also allow for young people to be prepared for the project. (see SOW for Economic Development Study on Youth)
7. Identify strategies to get service suppliers to locate locally with a view to meeting the future needs of the project and the community.

## **Participants**

This study will involve the following participants:

- To be determined

## **Relation to Other Studies and Impact Assessment**

NWMO will need to describe the effects on the local and regional economy, including mitigation measures that reduce any negative effects, as part of the Impact Assessment. This study will provide information that will be used in the Impact Assessment and must meet the regulatory requirements for quality.

This Local Hiring Study is closely related to the proposed Local Labour Supply Baseline and Workforce Development Studies. All these studies are interrelated, rely on some common inputs and are mutually supportive.

## **Tourism Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Tourism Study is to identify the opportunities to expand the tourism sector in South Bruce in a manner that is consistent with the unique natural and agricultural character of the community of South Bruce.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives**

1. To describe the unique natural and agricultural character of the community of South Bruce that are important attributes of the local area that support tourism.
2. To identify the expected increase in tourism that will result from the implementation of the APM Project as people come to visit the deep geologic repository and the associated Centre of Expertise.
3. To identify strategies for expansion of the tourism industry in South Bruce to meet the change in demand that also preserve the unique natural and agricultural character of the community.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Documenting the current tourism industry in South Bruce including attractions and destinations, activities, accommodation and dining experiences; duration of visits, and any other information that is available on people who arrive in South Bruce for non-work related reasons.
2. Documenting any planned expansion of the activities or facilities that contribute to tourism such as recreational complexes, markets, fairs.
3. Documenting any unique natural or agricultural features in the community that could benefit from additional tourism.
4. Describing the expected increase in tourism that will occur with the development of the APM project, when that increase in tourism would be expected to occur, and its nature.
5. Describing programs that have been used in other communities to increase tourism; especially tourism related to industrial activities, including the costs and results of such programs.

6. Describing strategies that could be implemented in South Bruce such that any increase in tourism resulting from the APM project is to the general benefit of the tourism industry in South Bruce.

### **Participants:**

This study will involve the following participants:

- South Bruce staff & tourism committee
- Bruce County Tourism

### **Relation to Other Studies and Impact Assessment**

This study will require information respecting the Centre of Expertise and the anticipated draw of that facility as an educational and industrial tourism destination.

This study will provide information that will be considered in the local economic development study.

The baseline information collected respecting the tourism industry in South Bruce is expected to form part of the economic baseline information required for the Impact Assessment. All baseline information is expected to meet the quality requirements for an Impact Assessment.

## **Local Economic Development Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Local Economic Development Study is for South Bruce to maximize economic development opportunities associated with the NWMO PM Project.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

1. Describe the local economy of South Bruce, with a special attention to the energy, nuclear, and construction sectors.
2. Describe the economic and commercial development opportunities in South Bruce associated with the APM Project.
3. To identify strategies to encourage local economic development related to the NWMO APM Project, such as:
  - a. To identify strategies for existing South Bruce based businesses to become suppliers to the APM Project.
  - b. To identify strategies to encourage potential suppliers to the APM project to locate their operations in South Bruce.
4. To identify opportunities for economic cooperation between existing South Bruce businesses and the NWMO that can result in mutual benefits.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Describe the South Bruce Local Economy
  - a. Describe Generally
  - b. Describe South Bruce involvement in energy and nuclear sector
  - c. Describe South Bruce involvement in construction sector.
2. Describe the potential business needs of the NWMO respecting the services, equipment, and materials it expects to procure during the construction and operations phases of the APM Project.
3. Identify any constraints to industrial development in South Bruce, such as constraints on the amount of industrial lands that are or will become available.
4. Examination of Sectors specifically related to the project.
5. Develop strategies to maximize economic development within South Bruce.

### **Inputs to the Study:**

An essential input for this study is to determine the services, equipment and materials potentially needed by the APM Project. This information will also be an essential input to the Regional Economic Development study that will be conducted by the NWMO.

### **Participation:**

This study will involve the following participants:

- South Bruce Community and Business Association
- Mildmay Chamber of Commerce
- Saugeen Economic Development
- Bruce County Economic Development

### **Relation to Other Studies and Impact Assessment**

The Local and Regional Economic studies will need to be coordinated to ensure they use common assumptions and do not result in competing strategies for maximizing the economic benefits of the APM project.

The Employment Studies will need to be coordinated to ensure the expectations respecting the workforce retained by the NWMO is consistent with the expected procurement of support services. By their nature, support services are expected to be needed on a periodic or short-term basis or needed as they provide skills and capabilities that the NWMO will require solely for a phase of the project (such as initial construction).

The Aggregate Resources study, Tourism study, and Youth Economic Development study will also provide content to and integrate with this study.

This study will contribute to the economic baseline and impact assessment studies and will need to be undertaken in a manner that is consistent with the future regulatory approvals process quality requirements, including GBA+.

## **Economic Development Study on Youth – Statement of Work**

### **Overall objectives:**

The overall objective of the Economic Development Study on Youth is to engage with and provide opportunities for youth in the community, including investments in education and the provision of scholarships, bursaries and other incentives for youth to remain in or return to the local community and work for NWMO and/or the nuclear energy sector in general.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

A study will be conducted with the following specific objectives:

1. To identify the total potential workforce demand in the community arising from sustaining existing agriculture and other businesses in South Bruce, community economic growth in the absence of the APM project, and with the APM project.
2. To identify strategies arising from similar projects undertaken in other communities for local municipalities to maximize the opportunity for local employment of its youth workforce to meet the potential workforce demand in the absence of the APM Project.
3. To identify strategies to encourage youth workforce development in areas of education and career development specifically related to APM Project Needs.
4. Undertake an assessment of challenges and opportunities associated with the identified strategies including timing of the implementation of such strategies.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Establish a study area (consideration will need to be given to whether this is regional or limited to South Bruce).
2. Summarize (in as much detail as possible) strategies that have worked in other nuclear, resource or industrial projects that are similar to the construction and operation stages of the APM project that would provide useful examples of youth education and career development programs.
3. Identify and evaluate the strategies that could be used to support including:
  - a. Efforts respecting attracting youth to building trade or craft worker positions which involve formalized trade training in colleges;
  - b. Efforts respecting attracting youth to engineering and other positions which involve university education; and,

- c. Efforts respecting attracting youth to the similar positions in the agricultural sector including equipment operation and servicing.
4. Identify the timing of the implementation of the programs such that the local youth have the potential to meet expected opportunities in the labour force requirements for the APM project.

Note: with respect to identifying strategies, it is suggested that the effort would include the following:

1. Consideration of broad-based strategies for youth to be placed in co-op positions or internships at the NWMO and its related contractors.
2. Consideration of focused strategies for centralized publication of the expected 5-year demand for positions that will be needed during the construction stage of the project. Examples of this could include the following:
  - a. NWMO and its contractors providing detailed information on construction employment opportunities; and,
  - b. Union involved mentoring programs in which youth are introduced to the hiring halls to gain experience in advance of the APM project demand.
3. Consideration of focused strategies for preparing youth for potential employment in the operational stage of the project through practical and experiential training and pre-employment programs specifically tailored to youth, including local educational facilities.
4. Consideration of strategies to get existing local employers to become involved in the hands-on training and mentorship that will be needed for youth to become qualified in areas relevant to construction, and the nuclear sector and sciences.
5. Identify and consider barriers and potential solutions to youth access to and engagement in both training programs and employment (e.g. transportation challenges, literacy, discrimination, lack of support, inadequate finances for secondary and post-secondary education, inadequate skills for cv development etc.).

### **Inputs to the Study:**

An essential input for this study is to determine labour requirements for the construction and operations stage of the NWMO APM project, including.

1. Total labour required in person years.
2. Labour required in person years by professional/trade categorization such as: engineers, miners, construction workers, nuclear workers, etc.
3. Anticipated hiring in the years prior to and during construction and operation.

**Participants:**

This study will involve the following participants:

- Workforce Planning Board

**Relation to Other NWMO Studies and Impact Assessment**

NWMO will need to describe direct (and indirect and induced) employment associated with the project as part of the Impact Assessment. This study is intended to only focus on direct employment.

The Workforce Development Study will also be a key component in identifying the necessary skills the workforce will be expected to possess.

This Local Hiring Study is closely related to this study, although it is expected to address the ability of the currently available workforce to meet the immediate needs of the commencement of the project. This study will focus on any gaps between the ability of the available workforce to meet the initial APM project demand, and on the preparation of the next generation of employees that would be hired as the APM project progresses.

All these studies are interrelated, rely on some common inputs and are mutually supportive.

**References:**

This study will obtain information from existing reference reports and public sources of information.

## **DRAFT Agricultural Business Impact Study – Statement of Work**

### **Overall objectives:**

The overall objective of this study is to understand the potential to have restrictions on the continued agricultural use of the lands above or near our potential site, or for a reduction in the value of the agricultural products from the lands above or near our potential site.

This study will also examine, if there are no potential restrictions, the potential for the use of the NWMO lands to enhance the agricultural business in South Bruce, including facilitation of new entrants into the agricultural industry.

### **Study Proponent:**

This will be a joint study by the NWMO and the Municipality of South Bruce.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Identify the existing agricultural/agri-business profile of the local area.
2. Identify the potential for of the NWMO APM Project to change the agriculture/agri-business operations.
3. Identify potential strategies for use of the NWMO lands to facilitate new agri-business entrants.
4. If needed, identify potential strategies to address a reduction in the value of the agricultural products.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study.

1. Characterize existing agricultural uses of the NWMO lands and adjoining lands including but not limited to:
  - i. identify frequency, type and location of agricultural operations (e.g. crop and livestock)
  - ii. specialty agricultural operations (e.g. aerial application, irrigation, organic, sod etc.)
  - iii. Site attributes relevant to agriculture (e.g. riparian areas, forests, wetlands etc.)
  - iv. Characterization of local agri-business/agri-food networks and infrastructure
2. Identify the potential for continued agricultural use of the lands above or near the NWMO APM site, include an examination of the existing nuclear facilities in

Canada, the United States, the United Kingdom and potentially in other countries to confirm agricultural activities continue to be pursued adjacent to nuclear facilities. The examination will also consider whether there were any specific changes in the nature of the agricultural activities as a consequence of the establishment of the nuclear facilities, or any reduction in the value of the agricultural proceeds compared to the overall market prices.

3. Identify potential agricultural enhancement programs currently adopted in the local and regional study areas.
4. Research potential agriculture enhancement programs such as:
  - a. Use of lands for agricultural training or science programs in conjunction with universities and colleges, and
  - b. Use of the lands for innovations in agricultural technology, and
  - c. Promotional programs that would enhance the agricultural business in South Bruce and the region.
5. Identify proposed mitigation measures if potential restrictions or value reductions have been identified.

### **Participants**

This study will include inputs on potential agricultural enhancement opportunities with the Bruce County Federation of Agriculture.

### **Relation to Other Studies and Impact Assessment**

The Agricultural Business Impact Study will integrate with the Property Value Monitoring Program.

## **South Bruce Study to develop a community process for defining and assessing Willingness – Statement of Work**

### **Overall objectives:**

The overall objective of the South Bruce Willingness Study is for the Municipality, in collaboration with community members, to develop and establish an open and transparent process by the end of 2021 that will allow the community to express its level of willingness to host the Project late in 2022 or early 2023 after an extended period of learning about the Project.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

This study will involve the residents of the municipality to provide input in defining and developing a process to assess willingness to host the APM Project. The study will focus on the following objectives:

1. Define an open and transparent process for the South Bruce Community to recommend to Council the establishment of methodology to determine the level of willingness to host the Project as proposed by the Nuclear Waste Management Organization
2. Describe the multiple indicators that will be used to quantify and assess this support.
3. Identify a broad range of methodologies to be used for field activities to engage community members and understand support.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

This study will include the following:

1. Develop a **research design** for a dialogue to involve community members. Objective of the dialogue is to collaboratively identify, with the community, key parameters of the process the community will use to assess its willingness to host the Adaptive Phased Management Project. The research design needs to take into account the following:
  - a. Timing: The process is to be designed with community members *by the end of 2021*. The process is to be implemented, that is willingness is to be assessed, *by the end of 2022 or early 2023*, after the completion of further

studies in the area and more information is known to inform community decision-making

- b. Multiple indicators: The research design should lead to the identification of *multiple indicators of willingness*, rather than just a single measure or indicator. The identification of multiple indicators should create a more fulsome picture of willingness within the community, and be responsive to different views within the community about what should be measured and how.
  - c. Safe space: The research design, and approach to the dialogue, should create a *safe space for different views* to be expressed by community members and encourage mutual understanding and respect among community members over the course of discussion.
  - d. Common ground: Identifying possible acceptable approaches to assessing community willingness is important; understanding the reasons for preferring these approaches, and the underlying values and objectives to be achieved is also important.
2. Develop a **work book** as part of the research design and materials. This work book should lay out a framework for the discussion, and invite participation by community members.
    - a. The work book may include information about the options which might be considered and distinguishing features or considerations associated with different options. Options may include using existing processes in the community, the ones the community uses for decision-making on other matters, as well as new activities and processes.
    - b. The work book may include three to five questions to focus dialogue or discussion.
    - c. Work books are to be available for completion on paper or online by community members according to their preference, and will cover topics being addressed in workshops or other engagement activities
  3. Identify the **field activities** to be completed, such as workshops, open houses, key influencer interviews, other.
    - a. Provide rationale, number of each to be completed, timing, and how a broad cross-section of the community, including critics, will be involved including some who have not yet engaged.
    - b. Identify approach and actions that will be taken to address any challenges which may emerge.
  4. Outline approach to further engage community members in review of initial findings and **confirm findings** within the community.
  5. Outline approach to the **report** of findings.
    - a. Identify major sections and approach to reporting of findings and conclusions.

6. All documentation and processes must meet Provincial Accessibility Standards.

**Participants:**

This study will involve the following participants:

- South Bruce Residents

**Facilitator Qualifications**

1. Outline your **experience** in successfully conducting dialogue and engagement activities for a Project of similar scope, scale, profile and sensitivity
2. Identify specific staff who will work on the Project, their roles and responsibilities in completing the Project work, and their individual experience

## **Recreational Resources Study – Statement of Work**

### **Overall objectives:**

South Bruce will undertake a study on the additional demand that the new families will place on the recreational resources in the community, including ice rinks, playing fields, libraries and other resources, to identify any potential need for expansion of the existing facilities or the development of new facilities.

### **Responsible:**

The Municipality of South Bruce is responsible for this study.

### **Scope of Work:**

The study will include the following tasks,

1. Conduct an inventory of the utilization of the existing recreational resources in the Municipality of South Bruce to identify any current availability.
2. Based on the inventory, identify the gap in recreational resources and the strategies that could be utilized to meet the potential future demand. This will include:
  - a. Identify the potential for incremental expansion of recreational resources on available municipal owned lands.
  - b. Identify the potential for the introduction of incremental recreational resources on current municipal owned lands.
  - c. Identify the potential for new municipal owned recreational lands to meet the future demand.
3. Identify strategies and the timeline for having such recreational resources available in alignment with the potential increase in families in the various communities within South Bruce.

### **Relation to other NWMO Studies and IA**

This study will require inputs from the Housing Study and from the Infrastructure Study.

### **Participation**

It is expected that the following people will participate in this study:

- To be determined

### **Example References:**

None at this time.

## **Fiscal Impact Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Fiscal Impact Study is to assess the net fiscal impact of the Project on the finances of the Municipality of South Bruce.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Determining the likely potential local tax revenue associated with the APM project for South Bruce.
2. Determining likely potential increased municipal costs associated with the APM project for South Bruce.
3. Determine the overall net fiscal effect of the NWMO APM project on South Bruce.
4. Identify any other indirect fiscal impact effects.
5. Identify any strategies to minimize negative fiscal effects.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Identify likely ongoing tax revenue to the municipality from the proposed project.
  - a. Identify likely property tax revenue associated with all components of the project.
  - b. Identify other potential municipal revenues associated with the project.
  - c. Identify any other potential revenues or grants that the municipality may receive in relation to the project.
2. Identify likely municipal fiscal impacts to the municipality from the proposed project. Among costs to be considered would include:
  - a. Roads;
  - b. Water and Wastewater;
  - c. Waste Management;
  - d. Electrical Infrastructure (might not have municipal implication);
  - e. Health and Emergency Services;
  - f. Soft Services (i.e. planning, municipal enforcement); and,
  - g. Other (i.e. increased needs for municipal services).
3. Identify potential one-time municipal revenues such as:
  - a. Development fees; and,
  - b. Building permits.

4. Identify and discuss strategies to minimize fiscal impacts.
  - a. Identify and discuss strategies for alternative service delivery (i.e. in some cases it may make sense for NWMO to take responsibility for maintenance of a particular road if it is the main user and might have difference performance standards).

### **Relation to Other Studies and Impact Assessment**

The baseline and projected effects to municipal revenues will be included in the Impact Assessment. The study will need to be completed to the quality requirements of the regulatory process.

The studies on Roads, Infrastructure, Housing, and Local Economic Development will need to be integrated with this study.

## **Local Groundwater - Baseline and Effects Study**

### **Objectives:**

The overall objective of this study is to provide the committed measures that the NWMO will implement as part of the project to not cause harm to the groundwater resources of the properties that neighbour the NWMO site.

### **Study Proponent:**

NWMO is responsible for this study.

### **Scope of Work:**

The study will include information that is made available from the NWMO Geoscience Site Investigation program and Environmental Baseline program.

1. Provide a description of the existing groundwater system (flow and quality) to the extent that these features are known from data collected by summer 2020.
2. Provide a description of how the existing groundwater system may be potentially impacted by the Project.
3. Provide a description of the protective measures that the NWMO could implement during the construction and operations phases of the project to prevent harm to groundwater.
4. Provide an evaluation of the performance history of available technologies to protect groundwater that have been implemented at comparable projects (e.g. Posiva, recent Canadian mines)
5. Provide a description of the additional investigative activities and how they will influence the design of the protective measures.
6. Describe the monitoring program that can be implemented to confirm that the protective measures are performing as designed, and what can be done if the monitoring results are not as expected.

### **References:**

OPG Deep Geological Repository for Low and Intermediate Level Wastes  
Environmental Assessment

## **Local Terrestrial Species and Habitats - Baseline Study**

### **Objectives:**

The overall objectives of the local terrestrial species and habitats baseline characterization is to identify any specific habitat areas that are used by terrestrial species (especially species at risk) that should be avoided in terms of the lay out of the nuclear facility.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

More specifically:

1. To define the spatial boundaries of the terrestrial baseline characterization based on the anticipated boundaries of the Project's potential effects with NWMO input.
2. To compile and inventory of terrestrial animal and plant species and their habitat and identify vegetation communities.
3. To characterize existing baseline conditions (i.e., without the Project) in sufficient detail to be able to identify any potential effects from the Project if and when they occur.

### **Scope of Work:**

The study will include the following tasks:

1. Define the special boundaries of the terrestrial baseline characterization based on the anticipated boundaries of the Project's potential layouts.
2. Review of Legislative Framework: Review of the applicable legislative framework pertaining to the Site and the surrounding area, including applicable acts, regulations and policies.
3. Provide a description of field survey methodologies based on accepted industry standards.,
4. Conduct terrestrial surveys in the spring and summer, including the following:

#### **Vegetation Surveys**

- Complete a spring and summer plant species inventory of the Site, including any plant Species at Risk;
- Delineate natural environment features such as wetlands and woodlands and provide Ecological Land Classification for all vegetation communities;

#### **Wildlife Surveys**

(Amphibian surveys and bird surveys go until mid July)

- Identify significant wildlife habitat, including SAR habitat (cross reference with SAR survey SOW);
  - Complete amphibian surveys;
  - Identify mature cavity trees which might provide habitat for bats or birds (cross reference with avian survey SOW);
  - Complete presence/absence surveys for bats if appropriate habitat is identified in the potential siting areas for the surface facilities.
5. Provide a description of the areas on the potential sites for the surface facilities that should be avoided as being significant habitat areas or areas used by Species at Risk.

### **Participants**

Community members may volunteer to participate in this study in accordance with the baseline environmental program design.

### **Relation to Other Studies and Impact Assessment**

The Baseline Terrestrial Habitat study content will be included in the overall environmental baseline characterization that is submitted for the IA and the CNSC Licence to Prepare Site application.

## **Local Avian Species and Habitats - Baseline and Effects Study**

### **Overall Objectives:**

The overall objectives of the breeding birds and breeding bird habitat baseline characterization is to identify any specific habitat areas that are used by migratory birds (especially avian species at risk) that should be avoided in terms of the lay out of the nuclear facility.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

More specifically:

1. To define the anticipated layouts of the facility and the potential area that the project may change.
2. To complete an initial identification of birds which are using the potential area and the potential overall project site as breeding habitat.
3. To define potential avian habitat protection areas across the potential overall project site.

### **Scope of Work:**

This study advances elements of the baseline biodiversity characterization program. The study will include the following tasks:

- Conduct a desktop study to gather available information, including identification of previously recorded breeding bird species on or in the vicinity of the Site, including Species at Risk (SAR) (cross reference with SAR SOW), review of aerials to identify natural environment features (e.g., wetlands, watercourses, ponds, agricultural fields, meadows, woodlands) that may be potential habitat (cross reference with terrestrial SOW), identify Areas of Natural and Scientific Interest (ANSIs), Bird Sanctuaries, colonial nesting sites, staging areas, overwintering areas.
- Review of the applicable legislative framework and published guidance pertaining to the potential species of migratory birds to identify expected habitat protection zones.
- Conduct a spring avian survey to identify:
  - Breeding bird habitat, including nightjar
  - Waterfowl habitat
- Provide a description of the breeding bird habitat areas in which development should not occur due to the habitat being Significant Wildlife Habitat or used by avian Species at Risk.

## **Participants**

Community members may volunteer to participate in this study in accordance with the baseline environmental program design.

## **Relation to Other Studies and Impact Assessment**

The Baseline Avian Habitat study content will be included in the overall environmental baseline characterization that is submitted for the IA and the CNSC Licence to Prepare Site application.

## **Ambient Radioactivity - Baseline Study**

### **Overall Objectives:**

The overall objective of the baseline characterization of ambient radioactivity is to confirm that the ambient radioactivity reported for the area by the CNSC and Bruce Power provides a suitable, conservative characterization of the ambient radioactivity at the potential site.

### **Scope of Work:**

The study will include the following aspects based on existing information at the end of 2020, in combination with any field data collection that occurs at or near the potential project site in early 2021. *This Scope of Work advances a portion of the overall environmental characterization work program that has been developed for South Bruce.*

1. Define Radiological Contaminants of Potential Concern that are easily identified through the available laboratory analysis. It is expected that the list will contain:
  - a. Natural radiation
  - b. Uranium
  - c. Tritium
  - d. Carbon-14
  - e. Radioactive noble gas
  - f. Fission and activation products
  - g. External gamma
2. Obtain baseline information from readily available references:
  - a. Canadian Nuclear Safety Commission independent environmental monitoring program results, and
  - b. Bruce Power environmental monitoring program results.
3. Take a sampling of soils and agricultural products from the potential project site and have laboratory analysis conducted.
4. Confirm that the existing ambient radioactivity baseline conditions is consistent with the baseline information available through the references.
5. Create a report on the initial characterization of the ambient radioactivity at the potential project site.

### **Example references:**

**Bruce Power. *Environmental Protection Report.***

**CNSC. *Independent Environmental Monitoring Program: Bruce A and B Nuclear Generating Stations.***



## **Effects on Surface Water Study– Statement of Work**

### **Objectives:**

The overall objective of this study is to describe the measures the NWMO will commit to establish to protect surface waters, in particular the Teeswater River, from the potential effects of the construction and operations phases of the Project.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

More specifically:

1. To provide a description of the existing surface water systems near the Project Site including the quality of the water.
2. To describe the designs of the systems that will be installed to protect surface waters including the requirements pertaining to extreme weather conditions
3. To define any potential effects from the Project on those surface waters during normal operations and during potential extreme weather conditions.
4. To define the monitoring program that will confirm the systems are functioning as designed and the surface water is being protected.

### **Scope of Work:**

The study will include information from the NWMO Environmental Baseline Monitoring program that becomes available by July 2020. The extreme weather conditions will align with the conditions that are identified for purposes of safety assessment and engineering design.

1. Describe the current conditions of the surface water including:
  - a. Teeswater River flow
  - b. Local meteorology (seasonal weather patterns of rainfall and snowfall)
  - c. Teeswater River water quality
  - d. Sediment and Biological media
    - i. sediment quality
    - ii. plankton community composition and biomass and chlorophyll concentrations;
    - iii. benthic invertebrate community composition and biomass.
2. Describe the potential effluents from the Project (Nuclear Facility and Excavated Materials Pile) including:
  - a. Sediments (suspended solids)
  - b. Chemicals
  - c. Quantity of the effluents

3. Describe the potential treatment systems that will control the release of effluents to the Teeswater River, including information on their known performance history based on comparable facilities.
4. Describe the potential effects on the Teeswater River in terms of flow or quality potentially caused by the effluents from the Project after treatment.
5. Describe the monitoring program that will be established to confirm the potential treatment systems are performing as designed, and what measures will be taken if the monitoring program shows unexpected results.

**Example References:**

CanNorth. (2019). Environmental Media Baseline Program – Preliminary Sample Design Feasibility Assessment. November.

OPG Deep Geological Repository for Low and Intermediate Level Waste Environmental Assessment Reports.

## **Ecological Effects Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Ecological Effects Study is to demonstrate that sufficient measures will be in place to ensure that the natural environment will be protected throughout the construction and operation of the Project.

### **Specific Objectives:**

A desktop study will be conducted with the following specific objectives:

1. To characterize the extent of any change to the landscape and effluents and emissions to the environment that will occur during the construction and operations of the nuclear facility,
2. To determine what biota are likely to be affected by the Project from the physical changes and effluents and emissions (with an emphasis on avian and aquatic species, and species at risk),
3. To identify potential mitigations of those effects.

### **Scope of Work:**

The study will include the following tasks:

1. Summarize the expected construction and operations activities of the project, including the habitat that will be removed and any new habitat areas that will be created.
2. List and describe the ecological receptors of concern (based on the environmental baseline studies)
3. Describe the measures that can be implemented to protect the environment during construction and operation. These mitigation measures may include features in the conceptual repository layout, and systems that will be installed to protect the environment (e.g., surface water controls).
4. Summarize the improvement initiatives that can be used enhance the natural environment during any phase of the project.

### **Participants:**

This study will include inputs from:

- Involved regulatory authorities
- Saugeen Valley Conservation Authority and Maitland Valley Conservation Authority
- Pine River Watershed Initiative Network

## **Environmental Effects Study (Radiation) – Statement of Work**

### **Overall objectives:**

The overall objective of the Effects Study of Radiation on the Ecosystem is to describe the measures will be established to ensure that the natural environment will be protected from radiation during the operations period.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

This study will make use of information collected by the NWMO Baseline Environment program. A study will be conducted with the following specific objectives:

1. To describe the baseline characteristics.
2. To describe the potential effluents and emissions from the nuclear facility and the treatment measures that will be implemented prior to those effluents and emissions being released to the natural environment
3. To describe the emission and effluent monitoring system and the results that will occur following the measurement of a release that does not conform to the regulatory limits
4. To describe the bases for the regulatory limits for nuclear facilities and how they are set.
5. To identify the potential for any radiological effects from the Project on the natural environment at South Bruce and the surrounding areas
6. To describe the off site monitoring program that will be established to confirm the measurements of radiological emissions from the nuclear facility.

### **Scope of Work:**

The study will include the following tasks:

1. Summarize the expected radiological emissions during operations based on comparable facilities.
2. Describe the methodology that will be used for assessing potential radiological effects of the project at a high level (e.g. CSA Standards).
3. Discuss how the latest regulatory guidance and standards are established including the leading technical research papers on the potential for ecological effects from radiological emissions.
4. Describe the measures to protect the environment from radiological hazards that will be implemented during the project such as features in the conceptual repository design, or practices that will be undertaken during operations.

5. Describe the benchmarks and thresholds used to evaluate the potential effects for example radiological dose limits, No-Effect Concentrations (NECs), etc. Context for how the benchmark or threshold has been set (for example technical research or international committees) should be provided.
6. Describe at a high level the potential radiological emissions and effluents (to be aligned with the Preclosure and Postclosure Safety Assessment documents available by the end of 2020).
7. Assess the potential project effects against the appropriate benchmarks and thresholds, for normal operations and an accident scenario. Show the safety margin in the assessment.
8. Summarize the potential monitoring program that will be implemented to confirm the potential effects.

### References:

The study is not expected to develop new information. It will obtain information from existing reference reports. The main references for this study are expected to be the following:

1. Nuclear Waste Management Organization (NWMO) 2014. *Non-Human Biota Dose Assessment Equations and Data*. NWMO-TR-2014-02. March. Accessed from: [https://www.nwmo.ca/~media/Site/Reports/2015/10/01/07/15/2551\\_nwmo\\_tr-2014-02\\_r001\\_non-human\\_biota\\_dose\\_assessme.ashx?la=en](https://www.nwmo.ca/~media/Site/Reports/2015/10/01/07/15/2551_nwmo_tr-2014-02_r001_non-human_biota_dose_assessme.ashx?la=en)
2. Nuclear Waste Management Organization (NWMO) 2014. *Non-Human Biota Dose Assessment Illustrative Results for Repositories in Crystalline and Sedimentary Rock*. NWMO-TR-2015-02. March. Accessed from: [https://www.nwmo.ca/~media/Site/Reports/2015/10/01/11/44/2564\\_nwmo\\_tr-2015-02\\_non-human\\_biota\\_dose\\_assessment\\_r0.ashx?la=en](https://www.nwmo.ca/~media/Site/Reports/2015/10/01/11/44/2564_nwmo_tr-2015-02_non-human_biota_dose_assessment_r0.ashx?la=en)
3. Nuclear Waste Management Organization (NWMO) 2016. *Deep Geological Repository Conceptual Design Report – Crystalline/Sedimentary Rock Environment*. APM-REP-00440-0015 R001. May. Accessed from: <https://iaac-aeic.gc.ca/050/documents/p17520/117060E.pdf>
4. Bruce Power radiological emissions reports
5. CNSC independent environmental monitoring program reports

## **Infrastructure Baseline and Feasibility Study – Statement of Work**

### **Overall Objectives:**

The overall objective of the Infrastructure Baseline and Feasibility Study is to identify the existing and planned infrastructure in the Municipality of South Bruce and surrounding region and the incremental change that would be needed if the use of the municipal infrastructure was a feasible option to service the project. Infrastructure is limited to utilities such as water, sewage, electrical power, natural gas, and telecommunications.

### **Study Proponent:**

- NWMO will perform this study

### **Specific Objectives:**

The following is suggested as the items that would need to be considered in such a study:

1. Evaluate the feasibility of expansion of the municipal infrastructure to serve the needs of the on-site needs of the project.
2. Evaluate the needed expansion of the municipal infrastructure to support housing and other development needs that arise with the project
3. Evaluate the needed expansion of the municipal infrastructure to satisfy both the needs of the project and the other development needs that arise with the project
4. Identify strategies for the supply of needed infrastructure for both the project and the other developments, including timing of necessary expansions.

### **Scope of Work:**

The study is suggested to include the following tasks:

1. Define the infrastructure needed during the construction and operation stages of the project, including the off-site development needed to support the project such as housing.
2. Describe the temporary measures that could be used to supply infrastructure to the project.
3. Describe the infrastructure within the municipality and region.
4. Identify the existing planned expansion of the infrastructure.
5. Identify the limitations of the existing infrastructure including the planned expansions.
6. Describe the options for supply of necessary infrastructure including.
  - a. Define the various build-out scenarios for the infrastructure;
  - b. List and briefly describe all temporary infrastructure that could meet the needs of the project, and for how long that would be sufficient;
  - c. Identify any plans for upgrades and increases to the municipal infrastructure.

**Participants:**

This study will involve the following participants:

- Municipality of South Bruce Public Works
- Hydro One/Local Power distributors
- Local telecommunications suppliers (fibre optic)

**Relation to Other Studies and Impact Assessment**

The the information, analysis and conclusions of this Housing Needs and Demand Analysis Study will be needed for this study.

**References:**

None to date.

## **Local Traffic Effects Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Local Traffic Effects Study is to assess the local traffic effects associated with the NWMO APM Project in the Municipality of South Bruce and neighbouring communities and identify any potential changes required to the Municipal and County road network.

### **Study Proponent:**

This study will be undertaken by the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Describe the traffic load on the existing road system.
2. Describe the traffic effects associated with the NWMO APM Project.
3. Identify potential road improvements and other mitigation strategies.
4. Recommend a proposed monitoring program.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Identify the Study Area (to be done in conjunction with NWMO, South Bruce and the neighbouring communities).
2. Describe the local traffic use/load on roads near the proposed NWMO APM Project.
  - a. Assess whether the Municipality/County has sufficient data on local road use.
  - b. Recommend baseline data collection where data is insufficient.
  - c. Undertake baseline data collection
  - d. Identify roads used by the Mennonite community that will need to enable horse and carriage.
3. Describe the likely proposed traffic associated with the NWMO APM Project. Focus would be on the increase in traffic due to workers coming to and from the Nuclear Facility and the Centre of Expertise but needs to also consider the type of vehicles and necessary improvements to roads for safety or other reasons.
  - a. During Construction (will require information on temporary accommodation).
  - b. During Operations (will require information on expected communities in which the permanent project workers are likely to reside).

4. Assess the capacity of the local and regional roads to handle the proposed project and increased population
5. Recommend potential improvements, potential traffic management strategies, or other mitigation measures (i.e. mass transit of workers).
6. Recommend traffic monitoring programs.

## **Participants**

This study will involve the participation of:

- South Bruce (host community),
- Huron-Kinloss (as the neighbouring community most likely to be affected by an increase in demand for new housing on the Lake Huron shoreline).
- Bruce County Transportation and Environmental Services Department as being responsible for the 'collector and arterial' roads.

## **Relation to Other Studies and Impact Assessment**

The Local Traffic Effects Study should contribute to or be wholly sufficient for the Impact Assessment for the assessment of traffic effects.

The Project Description will be an essential input to this study, specifically number of workers.

The Local Traffic Effects Study would be an important input to the conclusions for the Road Conditions Study.

## **Road Conditions Effects Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Road Conditions Effects Study is to assess the existing municipal, county, and provincial road conditions and recommend any improvements and/or monitoring associated with the NWMO APM Project.

Traffic management is considered in a separate study; it may also identify recommended improvements to the road infrastructure in South Bruce and the neighbouring communities.

### **Study Proponent:**

This study will be undertaken by the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Describe the existing road conditions for roads potentially used for the transportation of equipment and materials to be used during construction and operations, including the eventual transportation of used nuclear fuel.
2. Identify likely needed road improvements.
3. Identify measures that will be implemented to maintain the roads such as routine monitoring and cleaning during construction

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Identify a study area for the project.
2. Describe the existing roads and their existing condition.
3. Assess increased demand associated with the NWMO APM project on existing roads for both the construction and operation stages of the project.
  - a. Consider quantitative changes (volume)
  - b. Consider special and unique needs associated with the Project and transportation.
    - i. Weight/Size or Oversize or Larger Vehicles
    - ii. Consider for Roads, Bridges and other Transportation Infrastructure;
    - iii. Consider need for additional safety or signage measures
    - iv. Consider other measures such as need for increased maintenance or plowing
4. Recommend proposed improvements to roads and road infrastructure

- a. Describe proposed improvements to roads and infrastructure (NWMO to describe level of detail for this).
  - b. Capital cost estimates.
  - c. Identify incremental operating costs.
5. Recommend proposed monitoring programs.

### **Relation to Other Studies and Impact Assessment**

The Road Conditions Effects Study should contribute to or be wholly sufficient for the Impact Assessment for the assessment of traffic effects.

The Project Description will be an essential input to this study.

The Traffic Management Study would be an important input to the conclusions for the Road Conditions Study.

## **Aggregate Resources Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Aggregate Resources Study is to determine the demand for and supply of aggregate resources in the study area of the Nuclear Waste Management Organization (NWMO)'s Adaptive Phased Management (APM) project over the identified time period.

### **Study Proponent:**

South Bruce and NWMO are jointly responsible for this study.

### **Specific Objectives:**

A baseline study (i.e., no field investigations or public engagement activities) will be conducted with the following specific objectives:

1. Describe and quantify the existing aggregate resources and supply in the study area.
2. Describe and quantify the existing demand for aggregate resources in the study area.
3. Describe and quantify the future aggregate demand requirements of the APM Project.
4. Describe and quantify the future aggregate supply created by the APM Project

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Establish a study area. An expanded regional study beyond South Bruce will be necessary to identify aggregate sources that, although distant from South Bruce, could be accessed to bring aggregate resources to the project site and community.
2. Identify and describe all existing sources of licenced sources of aggregate (pits, quarries, reserves) within the study area. This should include resource category/subcategory (rock, gravel, sand etc.), estimated capacity/availability (abundance and scarcity), rate of depletion, aggregate quality, distance to project site etc. This would include alternative supplementary sources of aggregate such recycling operations.
3. Describe the current and future estimated total demand and rate of consumption of the identified resources in the study area without the APM project.
4. Identify the potential for expansion of existing licenced sources and to gaining access to known unlicenced resources, taking into account environmental and other constraints (e.g. overlapping environmental, planning and agricultural constraints associated with unlicenced resources) (optional task).

5. Describe the aggregate resource needs of the APM project including type, quality, quantity and timing across the various project phases.
6. Discuss options for recycling of excavated rock material generated as a result of APM project site activities and potential technical or economic challenges or limitations of recycling these materials.
7. Provide a description of estimated future effect of the APM project on the known and potential supply of aggregate created as a result of the construction of the APM project activities including type, quality, quantity and timing across the various project phases.
8. This study is limited to the periods of construction and operations and does not include the effects on aggregate resources that may occur with facility closure and decommissioning given the uncertainty of the availability of licensed or potentially licensed aggregate sources at that time.

**Participants:**

- Teeswater Concrete
- Regional aggregate suppliers

**Relation to Other NWMO Studies and Impact Assessment**

The essential input for this study is the estimated demand the APM project will have for aggregate during the construction phase when the excavated materials are not available for use and operations stage of the NWMO APM project when the excavated materials are potentially available for use. The input will need to identify:

1. Total aggregate required (including category/type, amount, and quality).
2. By year of construction and operation.

Aggregate resources will need to be reviewed in conjunction with other studies such as the Road Impact Study, and Effects Study on Public Infrastructure, both of which will identify the need for aggregate.

**References:**

The study will be conducted using information from existing reference reports or publicly available databases.

## **Community Safety Effects Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Community Safety Effects Study is to provide a public summary that explains the health effects of ionizing radiation emissions potentially associated with the Project.

### **Specific Objectives:**

A study will be conducted with the following specific objectives:

1. Summarize the potential radiological effects of the project, during all its phases, on the safety of the residents of South Bruce.
2. Summarize the potential effects of the radiological emissions of the project, during all its phases, on the safety of vulnerable populations, Indigenous groups, future communities and APM workers at South Bruce.
3. Describe mitigation and/or follow-up measures to be taken if an increase in risk is identified during any phase of the project.

### **Scope of Work:**

The study will include the following tasks, based on existing information and reports available at the end of 2020:

1. Summarize the expected activities during the main phases of the project (site preparation, construction, operation, decommissioning and closure, postclosure) focusing on aspects that could potentially result in radiological emissions.
2. List the potential interactions between these activities and aspects of community safety. For example, the waste emplacement activities conducted during the operation phase may result in radiation dose to workers. Summarize the types of potential radiological effects of the project on community safety during normal operating conditions and under hypothetical accident conditions as well as under hypothetical future disruptive events
3. Provide context on radiological hazards and effects from natural and man-made sources, under normal and potential accident conditions:
  - a. Explain the presence of background natural radiation in Canada: The CNSC (2013) fact sheet on natural background radiation discusses natural radiation sources (e.g., cosmic, terrestrial, inhalation and ingestion) and suggests typical doses received from each of these natural radiation sources.
  - b. Provide information on the regulatory dose limits, how they are established, including information on UNSCEAR and other international radiological safety setting bodies and activities.

- c. Provide information on man-made radiation sources and doses, both generic and local: IAEA (2004) provides information on doses from man-made uses of radiation such as weapons testing, medical procedures and occupational exposures. Where available, information on performance of the licensees should be provided..
  - d. Discuss the current knowledge of hazards and effects based on international experience. For example, the U.S. EPA's investigation of the 2014 radioactive material release at the Waste Isolation Pilot Plant (WIPP) in New Mexico, USA found that the releases did not pose a public health concern (U.S. EPA 2014).
4. Describe how safety assessments are performed for the various types of effects and phases of the project at a high level with reference to the Preclosure Safety Assessment anticipated by the end of 2020 and the published Postclosure Safety Assessment (NWMO 2018). Explain how the precautionary principle has been applied. Discuss how the latest regulatory guidance and standards have been followed.
5. Describe the measures that the NWMO commits will be included in the project to protect the public and workers from radiological hazards, based on current practices. These protection measures may include features in the conceptual repository design, or programs that will be undertaken during construction and operations.
6. Describe at a high level the conclusions in the Preclosure and Postclosure Safety Assessment documents available by the end of 2020.
7. Document the above in a Community Safety Effects Study Report. The report will be written in plain language, with high-school educated, non-specialist members of the public as its intended audience.

### **Relation to other NWMO Studies and IA**

NWMO plans to prepare detailed site-specific safety assessments (covering both the pre-closure and post-closure phases of the Project) for the selected site. These would address any potential health effects from the study in detail and will be used to verify the preliminary estimates provided in work based on this SOW.

### **Participation**

It is expected that the following people will participate in this study:

- South Bruce, Grey Medical Officer of Health
- Bruce Power
- CNSC

### **Example References:**

As discussed earlier, the conduct of this study does not require collection of new field information. Sufficient information is available from published sources and analogous facilities. Example references for this study include:

1. Nuclear Waste Management Organization (NWMO) 2018. *Postclosure Safety Assessment of a Used Fuel Repository in Sedimentary Rock*. NWMO-TR-2018-08. December. Accessed from: <https://www.nwmo.ca/~media/Site/Reports/2019/05/28/19/41/NWMOTR201808.ashx?la=en>. This document is often referred to as NWMO's "seventh case study".
2. Nuclear Waste Management Organization (NWMO) 2020 (on-going). *Preclosure Safety Assessment*. Expected to be published in late 2020.
3. Nuclear Waste Management Organization (NWMO) 2016. *Deep Geological Repository Conceptual Design Report – Crystalline/Sedimentary Rock Environment*. APM-REP-00440-0015 R001. May. Accessed from: <https://iaac-aeic.gc.ca/050/documents/p17520/117060E.pdf>
4. Canadian Nuclear Safety Commission (CNSC) 2013. *Fact Sheet: Natural Background Radiation*. January. Accessed from: [https://nuclearsafety.gc.ca/eng/pdfs/Fact\\_Sheets/Fact-Sheet-Background-Radiation-eng.pdf](https://nuclearsafety.gc.ca/eng/pdfs/Fact_Sheets/Fact-Sheet-Background-Radiation-eng.pdf).
5. International Atomic Energy Agency (IAEA) 2004. *Radiation, People and the Environment*. February. Accessed from: <https://www.iaea.org/sites/default/files/radiation0204.pdf>
6. United States Environmental Protection Agency (U.S. EPA) 2014. *Summary of EPA's Response and Findings Related to the February 2014 Radioactive Release at the Waste Isolation Pilot Plant*. Prepared by the Office of Air and Radiation. September. Accessed from: <https://www.epa.gov/sites/production/files/2015-05/documents/Summary-EPA-Response-Findings-Related-February-2014-Radioactive-Release-WIPP.pdf>

## **Vulnerable Populations Baseline and Effects Study – Statement of Work**

### **Overall Objectives:**

The overall objective of the Vulnerable Populations Baseline and Effects Study is to identify the vulnerable populations in the Municipality of South Bruce and surrounding region, the effects that they may feel as a result of the project, and steps that could be taken to mitigate those effects.

### **Study Proponent:**

- NWMO will perform this study.

### **Specific Objectives:**

The following is suggested as the items that would need to be considered in such a study:

1. Identify vulnerable populations (elderly, social assistance program recipients, etc.) within the municipality of South Bruce and region.
2. Identify the programs and other support that is currently provided to vulnerable populations including subsidies for housing.
3. Evaluate the potential effects of the project on those programs and other supports needed by vulnerable populations.
4. Identify strategies to mitigate the potential effects including the potential for those strategies to continue the current levels of support for vulnerable populations.

### **Scope of Work:**

The study is suggested to include the following tasks:

1. Define the vulnerable populations in the communities into suitable classes of individuals for purposes of the assessment.
2. Describe the programs that each class of the vulnerable populations currently rely upon to meet the daily needs of their lives such as shelter, food, clothing, recreation, child care, etc. (e.g. this should identify why that element of the population is vulnerable in comparison to other elements of the population)
3. Describe any non-financial limitations to those programs such as available space.
4. Describe the potential effects of the project on vulnerable populations including increase in costs.
5. Identify the mitigations (funding, program enhancements) that would be available to reduce the consequences of the potential effects of the project

### **Participants:**

This study will involve the following participants:

- Grey Bruce Public Health
- Bruce County Human Services Department
- Bruce County Health Services Department

### **Relation to Other Studies and Impact Assessment**

This information will be needed for the Impact Assessment and will need to meet the quality requirements of the regulatory process including GBA+.

### **References:**

None to date.

## **Local/Regional Educational Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Local/Regional Education Study is to assess the effects of the NWMO APM Project on the local and regional education services (elementary through high school).

### **Study Proponent:**

This study will be jointly undertaken by the NWMO and South Bruce.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Describe the likely increase in enrollment in local schools (K-12)
2. Describes strategies to maintain or enhance the educational infrastructure in South Bruce and the neighbouring community such that it is available in advance of the likely increase in enrollment

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Identify (from other studies) the potential increase in population associated with the NWMO APM Project
2. Describe the likely school age population of South Bruce and the neighbouring communities for the future without the project
3. Describe the potential increased child population arising from the staffing of the APM project in the future (under 18).
  - a. Should be estimated for every year until population stabilizes.
4. Describe the current and projected capacity of local and regional schools (without the NWMO APM Project) including any planned reductions in the educational infrastructure.
5. Project the number of students by grade (or cohort) in the future associated with the population increase associated with the NWMO APM Project.
6. Identify potential differences between the projected funding for the maintenance and construction local and regional schools with and without the APM Project.
7. Identify strategies to maintain existing educational infrastructure or new educational infrastructure to meet the potential increase in the student population.

### **Participants**

This study will be undertaken with the participation of:

- Bluewater District School Board
- Bruce-Grey Catholic District School Board

### **Relation to Other Studies and Impact Assessment**

The Local/Regional Educational Study will coordinate with the Housing Study.

## **Social Programs Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Social Programs Study is to assess the effects of the NWMO APM Project on the community programs offered by Bruce County, such as children's programs including assisted daycare and learning programs, plus community programs for adults, seniors and families that are made available to the residents of South Bruce.

Education programs (elementary through high school), emergency services, and recreational programs are considered in separate studies.

### **Study Proponent:**

This study will be jointly undertaken by South Bruce and the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Describe the current social programs and services available to residents of South Bruce,
2. Identify potential increases in both funding and in demand for specific social services and programs as a result of the NWMO APM project,
3. Identify recommendations to address any imbalance between potential funding and demand.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Describe the projected population increase in South Bruce associated with the NWMO APM Project.
  - a. Describe project in sufficient detail so as to inform reader of potential effect on social services.
  - b. Describe population increase
  - c. Describe demographic change
2. Describe current social facilities and services in South Bruce.
  - a. Children's programs
  - b. Programs for adults, seniors, and families
  - c. Other Support Services
3. Discuss likely impact (positive and negative) on the various social facilities and services. Positive impacts should include the increased tax base.
  - a. Children's programs

- b. Programs for adults, seniors, and families
  - c. Other Support Services
4. Recommend any specific actions
5. Recommend any proposed long-term monitoring programs.

### **Participants**

This study will involve the following participants:

- Bruce County Human Services and Health Services departments

### **Relation to Other Studies and Impact Assessment**

The results of this study should be incorporated into the Impact Assessment.

## **Workforce Development Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Workforce Development Study is to characterize and describe the labour (employment and contracting) needs of the project and describe how NWMO can develop the workforce necessary to undertake the NWMO APM project.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

The following is suggested as the items that would need to be considered in such a study:

1. To ensure the project has all the necessary skills and talents to adequately meet the project needs.
2. To describe strategies to ensure the NWMO will have the necessary workforce.
3. To describe strategies for cooperation in the development of the necessary regional workforce with other businesses that have a similar or overlapping needs (e.g. Bruce Power).

### **Scope of Work:**

The study is limited to the direct hires that the NWMO anticipates it will make for purposes of the project. It does not include the workforce development of businesses that supply goods to the project. It will include the following tasks.

1. Summarize (in as much detail as possible) the permanent labour force requirements for the NWMO for both the construction and operation stages of the project.
  - a. Efforts will need to be made to establish professional and trade employment categorizations used within the nuclear and energy sectors.
  - b. Where data is insufficient or lacking in detail provide comment to NWMO on what more information is required.
2. For each major category of employment describe required education, training, professional and work requirements (i.e. career paths). Research and interviews will need to be undertaken to describe these.
  - a. Research on the demand and supply for these major job categories;
  - b. Research on Ontario universities and college programs for these major job categories; and,

- c. Interviews (regionally and provincially) with major employers (Bruce Power, OPG, etc.), universities and colleges on current and future labour availability.
3. Quantify and describe likely future availability of relevant workforce.
4. Identify strategies for NWMO to take to ensure any gaps between the Baseline available workforce and the needs of the project are met, including opportunities to develop a regional workforce that has transferable qualifications that can meet the routine temporary demands for increased workforce.

### **Inputs to the Study:**

The Conceptual Project Implementation Plan and the Workforce Model are essential inputs for this study.

### **Participants:**

This study will involve the following participants:

- Local Colleges and Universities
- OPG
- Bruce Power
- Workforce Development Planning Board

### **Relation to Other Studies and Impact Assessment**

Employment associated with the project will be part of the Impact Assessment. This study will need to meet the quality requirements of the regulatory process.

As already indicated, this Study is dependent on the proposed Labour Supply Baseline which is also to be conducted by NWMO. As well, this study will interact with the Local Economic Development study, the Regional Economic Development study and the Economic Development Study for Youth. All these studies are interrelated, rely on some common inputs and are mutually supportive.

## **Local Hiring Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Local Hiring Study is to maximize employment by the project of people residing within South Bruce, while sustaining the workforce that is needed by the existing businesses and the Municipality.

### **Study Proponent:**

South Bruce is responsible for this study.

### **Specific Objectives:**

A study (i.e., no field investigations or public engagement activities) will be conducted with the following specific objectives:

1. To describe the workforce needs of the project for both the construction and operation phases of the project.
2. To identify potential competing demands for that workforce as between existing local businesses and the Municipality.
3. To identify strategies to maximize local employment associated with the project while ensuring the community has a sufficiently skilled workforce to meet its ongoing needs.
1. To identify strategies to encourage businesses to bring their workforce into South Bruce as a means of addressing any potential shortfall between the needs of the project and the needs of the community.
2. Undertake an assessment of challenges and opportunities associated with maximizing local employment.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Summarize the labour force requirements for the NWMO APM Project for both the construction and operation stages of the project.
  - a. Efforts may need to be made to compare professional and trade employment categorizations used in the nuclear and energy sectors with categorizations used in local businesses
2. Summarize the key findings from the Local Labour Supply (baseline) Study that described expected labour force availability.

3. Undertake key person and local business interviews to confirm the anticipated demand of the businesses in South Bruce for the labour categorizations that are common to the project (e.g. trades, truck drivers, etc.).
4. Consider broad based strategies for local people to enter into professions in which there is expected to be local business and project demand.
5. Consider focused strategies for local people to be hired during the construction stage of the project, and thereafter become available to satisfy the workforce demands of the community.
6. Considered focused strategies for local people to be hired during the operational stage of the project. Given that the operational stage is some years away, preparing the local workforce for operations may by nature focus more on youth population. Time will also allow for young people to be prepared for the project. (see SOW for Economic Development Study on Youth)
7. Identify strategies to get service suppliers to locate locally with a view to meeting the future needs of the project and the community.

## **Participants**

This study will involve the following participants:

- 

## **Relation to Other Studies and Impact Assessment**

NWMO will need to describe the effects on the local and regional economy, including mitigation measures that reduce any negative effects, as part of the Impact Assessment. This study will provide information that will be used in the Impact Assessment and must meet the regulatory requirements for quality.

This Local Hiring Study is closely related to the proposed Local Labour Supply Baseline and Workforce Development Studies. All these studies are interrelated, rely on some common inputs and are mutually supportive.

## **Housing Needs and Demand Analysis Study – Statement of Work**

### **Overall Objectives:**

The overall objective of the Housing Needs and Demand Analysis Study is to assess, identify and plan for sufficient housing/accommodation for the NWMO APM project needs at the commencement of construction and at the commencement of operations.

### **Definitions:**

- Accommodation – Refers to all types of temporary and permanent accommodation and housing ranging from: hotels/motels; rental housing, apartments and owner owned single family housing.
- Temporary Accommodation – Refers specifically to accommodation that will be utilized for short durations and/or peaks workforce during the construction and operations period.
- Housing – Refers to accommodation that will be used by the permanent workforce that will reside within the region.

### **Study Proponent:**

- NWMO and South Bruce will perform this study jointly

### **Specific Objectives:**

The following is suggested as the items that would need to be considered in such a study:

1. Describe the Accommodation that is currently available within the proximity of the project.
2. Identify the incremental quantity (e.g., number of accommodation units by year) of Temporary Accommodation needed in readiness of the commencement of the construction phase of the project.
3. Identify the incremental quantity of Housing needed in readiness of the operation phase of the project.
4. Work with the local municipality to identify the serviced or serviceable residential lands that are currently available for construction of Temporary Accommodation and available for Housing.
5. Work with the municipality to identify the potential for expansion of the serviced or serviceable residential lands to enable incremental accommodation while sustaining the character of the residential areas within South Bruce.
6. Identify secondary uses for the Temporary Accommodation that could support economic or social programs in South Bruce once the accommodation is no longer required for the project.
7. Identify strategies that could be implemented during the project to influence worker choice to occupy accommodation in South Bruce.

## Scope of Work:

The study is suggested to include the following tasks:

1. Define the construction and operation stages accommodation study areas for the project (it is expected that the accommodation supply necessary for the market would go beyond the local municipality to adjacent and nearby municipalities but data needs to be disaggregated and assessed for each municipality and rolled up into broader study area).
2. Describe the temporary accommodation market.
  - a. Define the various types of temporary accommodation;
  - b. List and briefly describe all temporary accommodation;
  - c. Quantify the number of units and capacity for each accommodation; and,
  - d. Identify any plans for upgrades and increases or decreases to each.
3. Describe the current housing market.
  - a. Describe housing stock in study area.
  - b. Describe housing stock availability in the study area (for a and b sources of information will include: municipal government data, census data, Statistics Canada Administrative data, Canada Mortgage and Housing Corporation (CHMC) information, and Multiple List Services (MLS)).
  - c. Describe any planned changes to housing stock in the study:
    - i. Identify any proposed new housing stock coming to the market; and,
    - ii. Identify any identified impediments to increases in housing stock in area municipalities (note growth might be constrained by infrastructure (i.e. need for new sewage treatment plant) or policy which prevent them from easily increasing housing supply or certain types of housing supply).
  - d. Consider the demand trends in the housing market study area and whether there are other large planned projects coming on-line or going off-line for the time horizons considered by NWMO.
  - e. Consider any existing housing concerns/needs in the study area (e.g. the need for subsidized housing or the need for accommodations for seniors).
4. Forecast construction stage temporary accommodation needs.
  - a. Identify temporary accommodation needs including those of the project.
  - b. Assess whether local market can meet the forecasted needs.
  - c. Develop strategy in conjunction with municipality to address temporary accommodation needs and interests.
5. Forecast operation stage housing needs.

- a. Identify housing demand for operational stage of the project.
  - b. Assess whether NWMO operational demand can be met by current or planned housing supply.
  - c. Identify housing supply options should demand exceed supply or result in significant inflation in local housing market. Develop a housing strategy should future demand exceed supply.
6. Address secondary use of temporary accommodation to meet social program needs of the Municipality of South Bruce.

### **Participants:**

This study will involve the following participants:

- Realtors Association
- Local developers

### **Relation to Other Studies and Impact Assessment**

This study will require the following inputs:

1. Labour need forecast for the construction stage of the project.
2. Labour need forecast for the operation stage of the project.
3. Projected population change (increase or decrease) in absence of the project and population changes that are forecast for existing settlement areas in proximity to the project (Teeswater, Formosa, Mildmay)
4. Mobilization plan to locate NWMO permanent positions at work locations within the Municipality.
5. Projected population increase as a result of the NWMO project (workers will bring families during the operational stage of the project and therefore accommodation needs to be planned for families rather than workers for construction stage).

The labour forecasts are done for each year of the construction and the commencement of the operational phase of the project, at which point the need for accommodation is expected to reach a maximum point.

The population forecasts without and with the project will be included in the Impact Assessment and will need to meet the quality requirements for the regulatory process. This includes consideration of the requirement to include GBA+ in the collection of baseline and effects information.

It is expected that the information, analysis and conclusions of this Housing Needs and Demand Analysis Study will be needed for the Impact Assessment.

**References:**

None to date.

## **Emergency Services Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Emergency Services Study is to assess the effects of the NWMO APM Project on emergency services locally and regionally in the construction period and the operations period.

### **Study Proponent:**

This is a study to be undertaken by the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

- NWMO will identify what changes may be required to the South Bruce & Bruce County Emergency Response Plans, including the nature of the nuclear emergency response capability would need to be maintained for the operations period of the project.
- The NWMO will identify the incremental fire and injury response capability that may be needed from Bruce County and the Municipality of South Bruce during the construction period.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Describe current emergency services South Bruce and the broader region (Bruce County).
  - a. Nuclear Emergency Response capability
  - b. Fire response capability of South Bruce
  - c. Paramedic, Ambulance, and Air Ambulance capability of Bruce County, and
  - d. Hospital services in proximity to the potential nuclear site.
2. Describe NWMO Proposed internal conventional Emergency Services (including contractor performed emergency services during construction)
3. Describe NWMO Mine Safety and Rescue Emergency Services and other collaborating Parties
4. Describe strategies for Emergency Services during construction and operations (such as mutual aid arrangements).
5. Describe the potential changes to the Nuclear Emergency Response capability that may occur during the operations period.
6. Recommend any proposed long-term monitoring programs.

### **Participation**

The performance of this study will need the participation of:

- Bruce County Public Safety and Emergency Services
- Municipality of South Bruce Fire Rescue Services
- Municipality of South Bruce Emergency Control Group

### **Relation to Other Studies and Impact Assessment**

The results of this study would need to be incorporated into the Impact Assessment.

## **Property Value Monitoring Program – Statement of Work**

### **Overall objectives**

The overall objective of the Property Value Monitoring Program will be to establish a program to comparatively monitor values of various property types in South Bruce and the surrounding neighbouring communities against properties unaffected by the APM Project.

### **Study Proponent:**

This study will be by the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

- Development of a program to enable comparison of the value for regional properties to similar properties that are remote to the potential site.
- Design an information sharing program that will enable residents of South Bruce to access the property value monitoring program results.

### **Scope of Work:**

1. Identify the current and planned land uses within the community of South Bruce and neighbouring communities.
2. Identify the current basis of land value in South Bruce and the neighbouring communities.
3. Identify historic changes in land value and the attributes associated with those changes.
4. Identify target comparative communities whose land values are affected by the same attributes.
5. Identify sources of land value tracking information that can be incorporated into the land value monitoring program.
6. Develop a program that will access the sources of land value tracking and show changes in value over time.
7. Develop a land value monitoring program interface that will enable residents of South Bruce and the neighbouring communities.

### **Participants:**

No other participants are identified at this time.

### **Relation to Other Studies and Impact Assessment**

This study will integrate with the follow-up monitoring program that will be included in the IA.

## **Land Use Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Land Use Study is to assess the likely changes in present and planned land use and development patterns that will occur with the NWMO APM Project in the Municipality of South Bruce and the neighbouring communities and its interaction with the emergency response plan for the future facility.

### **Study Proponent:**

This will be a joint study by South Bruce and the NWMO.

### **Specific Objectives:**

The study will address the following specific objectives:

1. Identify the current land uses and how they may change resulting from the NWMO APM Project.
2. Confirm that there are no current land uses that would challenge the implementation of the emergency response plan.
3. Identify strategies to prevent future changes to land uses that would introduce challenges to the implementation of the emergency response plan.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Research any federal (i.e. CNSC) and provincial (i.e. provincial policy statement, provincial emergency response plans) requirements with respect to land use in proximity to a nuclear facility
2. Research any strategies other municipalities that host nuclear facilities have established with respect to nuclear facilities.
3. Describe the current SB Official Plan and related planning documents in the Municipality at present. Consider any other planning initiatives such as:
  - a. OP Reviews
  - b. Secondary Plans
  - c. Growth Management Studies
  - d. Zoning By-Law
  - e. Urban Design Studies
  - f. Environmental Assessment Studies
  - g. Development Applications
4. Describe the current Official Plans (and if relevant Secondary Plans) for adjacent and nearby municipalities and identify proximity (proximity should be determined based on research from (1)) to the proposed NWMO APM project. Repeat (4) if

other municipalities are defined as being close enough that warrant this level of analysis.

5. Describe the Regional Official Plan for Bruce County and document any relevant policies.
6. Describe scenarios for land use changes for the lands proposed for the NWMO APM Project as well as adjacent and nearby lands that may be impacted by the proposed project.
  - a. Based on research from (1) consider how far away from proposed NWMO APM site controls on land use may be required.
  - b. Describe scenarios for proposed future land uses taking into consideration any applicable controls.
7. Identify strategies that could be implemented to ensure the controls are implemented.
8. Identify potential changes to the Official Plan and Zoning By-Law for South Bruce.
9. Recommend a program to monitor land use changes in the study area going forward.

### **Participants**

- The South Bruce Planner provided by the County of Bruce;
- This study will involve neighbouring community planning departments, as necessary.

### **Relation to Other Studies and Impact Assessment**

The Land Use Study will be submitted as part of the application for the CNSC Licence to Prepare Site. This study will integrate with the Emergency Services Study.

The Land Use Study should consider the work resulting from other studies including:

- Housing Study,
- Traffic Study,
- Social Programs Study,
- Education Study.

## **Regional Economic Development Study – Statement of Work**

### **Overall objectives:**

The overall objective of the Regional Economic Development Study is to identify the economic development opportunities for the municipalities that are within the region of economic benefit of the NWMO APM Project. The Local Economic Development of South Bruce is excluded from consideration in this study as it is being independently assessed.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

As this study focuses on the non-host municipalities, the specific objectives of the study will focus on economic development opportunities that are not directly tied to the location of the APM project. The study will focus on the following objectives.

1. Define the area that reflects the regional economy.
2. Describe the major contributors to the regional economy.
3. Describe the economic and commercial development opportunities associated with the APM Project.
4. Identify regional employers that could provide services to the APM Project.
5. Identify regionally based businesses that could supply equipment and material products to the APM Project.
6. Identify opportunities to work with the major contributors to the regional economy to leverage the regional service, equipment, and material product suppliers such that the needs of the NWMO and the regional businesses can result in the maximization of regional economic benefits.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

This study will include the following:

1. Describe the Regional Economy:
  - a. Describe the regional energy and nuclear sector; and,
  - b. Describe the regional construction sector.
2. Describe the potential business needs of the NWMO respecting the services, equipment, and materials it expects to procure during the construction and operations phases of the APM Project.

3. Examination of Sectors specifically related to the project to identify the existing capability of the regional energy, nuclear, and construction sectors to meet the potential business needs of the NWMO.
4. Develop strategies in co-operation with other major contributors to the regional economy to maximize the ability of regional businesses in the energy, nuclear, and construction sectors to meet the anticipated demand.

### **Inputs to the Study:**

An essential input for this study is to determine the potential services, equipment and materials potentially needed by the APM Project. This information will also be an essential input to the Local Economic Development study that will be conducted by South Bruce.

### **Participants:**

This study will involve the following participants:

- Bruce County
- Huron County
- Grey County

### **Relation to Other Studies and Impact Assessment**

The Local and Regional Economic studies will need to be coordinated to ensure they use common assumptions and do not result in competing strategies for maximizing the economic benefits of the APM project.

The Workforce Development Studies will need to be coordinated to ensure the expectations respecting the workforce retained by the NWMO is consistent with the expected procurement of support services. By their nature, support services are expected to be needed on a periodic or short-term basis or needed as they provide skills and capabilities that the NWMO will require solely for a phase of the project (such as initial construction).

The Aggregate Resources study, Tourism study, and Youth Economic Development study will also provide content to and integrate with this study.

This study will contribute to the economic baseline and impact assessment studies and will need to be undertaken in a manner that is consistent with the future regulatory approvals process quality requirements, including GBA+.

## **Labour Baseline Study Program – Statement of Work**

### **Overall objectives:**

The overall objective of the Labour Force Baseline Study is to describe and characterize the local/regional labour supply market.

### **Study Proponent:**

NWMO is responsible for this study.

### **Specific Objectives:**

A study will be conducted with the following specific objectives:

1. Describe the local labour supply in terms of education and professional classifications.
2. Describe the local labour supply in terms of employment status (i.e. in the workforce, or employable but not in the workforce, permanent or temporary).
3. Describe the local labour needed to sustain and grow the existing businesses in the community, accounting for demographic information respecting potential demands due to retirements.

### **Scope of Work:**

The following is suggested as the items that would need to be considered in such a study:

1. Define the Study Area(s) for the Labour Baseline Study. The Study Area likely goes beyond the local municipalities and should cover the distance that workers could reasonably commute to the proposed work site (data should be organized discreetly by municipality for further analysis).
2. Quantify and describe local and regional labour supply by professions/trades expected to be needed for the NWMO project. This will include establishing professional and trade employment categorizations used within the nuclear, mining, and energy sectors. Information will be collected through:
  - a. Interviews with trade unions, Bruce Power, Economic Development Staff, agricultural operators, aggregate operators, other major related employers, etc.
3. Identify and describe trends in employment in the study area(s) for the relevant professions/trades and forecast likely employment trends for relevant existing employers.
4. Identify likely surplus/deficit in local/regional supply (i.e. determine # of workers required) to meet the anticipated demands of the existing local and regional businesses,

### **Inputs to the Study:**

An essential input for this study is to determine labour requirements for the construction and operations stage of the NWMO APM project. This will enable the study to be focused on the labour which will be affected by the demand of the project.

### **Participants:**

This study will involve the following participants:

- OPG
- Bruce Power
- Suppliers to Bruce Power and OPG
- Other relevant regional businesses

### **Relation to Other Studies and Impact Assessment**

NWMO will need to describe direct (and indirect and induced) employment associated with the project as part of the Impact Assessment. The Baseline information will need to meet the quality requirements of the regulatory process, including GBA+.

This Local Labour Supply Baseline Study will provide information needed for the proposed Workforce Development and Local Hiring Program Study, and the Economic Benefits for Youth Study. All these studies are interrelated, rely on some common inputs and are mutually supportive.