

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES



Site Selection Update

Presented at: Clarington Joint Committees Meeting
September 13, 2021

Presented by: Lise Morton & Norman Sandberg

Nuclear Waste Management Organization (NWMO): Who We Are

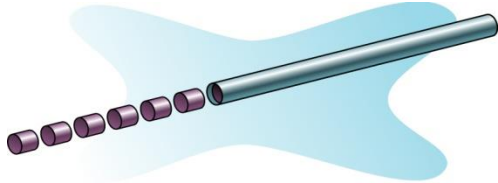
- Formed in 2002 as required by *Nuclear Fuel Waste Act*
- Funded by Canada's nuclear energy corporations
 - Atomic Energy Canada Limited (AECL)
 - Ontario Power Generation (OPG)
 - Hydro Quebec
 - New Brunswick Power
- Operates on a not-for-profit basis



Mission Statement

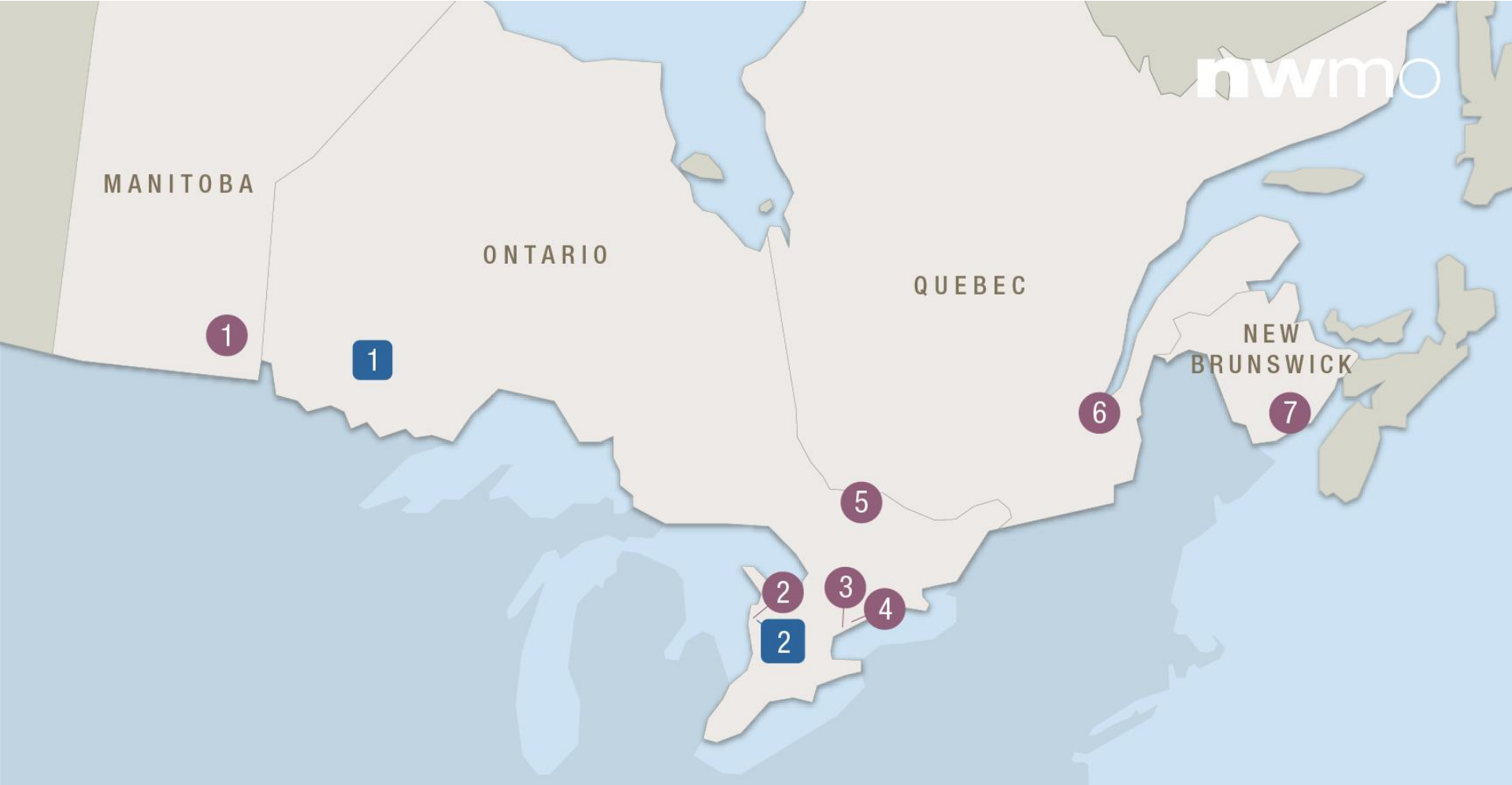
Our mission is to develop and implement collaboratively with Canadians, a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible, and economically feasible.

Used Nuclear Fuel



CANDU fuel bundle

- Solid and extremely durable material
- Does not readily dissolve and does not vaporize
- Potential health risk for a very long time
- Must be safely contained and isolated from people and the environment, essentially indefinitely
- Excellent storage safety record



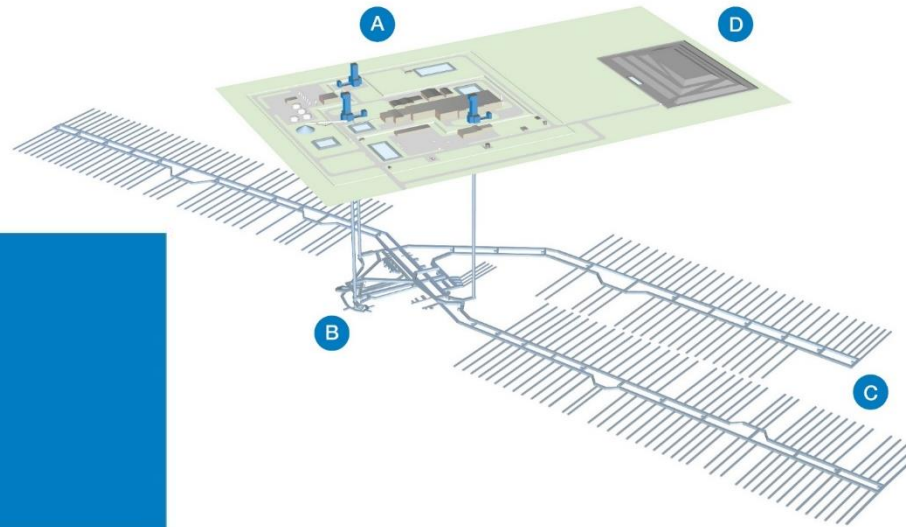
● **Interim Storage Facilities**

- 1. Whiteshell Laboratories, Manitoba
- 2. Bruce Nuclear Generating Station, Ontario
- 3. Pickering Nuclear Generating Station, Ontario
- 4. Darlington Nuclear Generating Station, Ontario
- 5. Chalk River Laboratories, Ontario
- 6. Gentilly Nuclear Generating Station, Quebec
- 7. Point Lepreau Nuclear Generating Station, New Brunswick

■ **Assessments underway in the area**

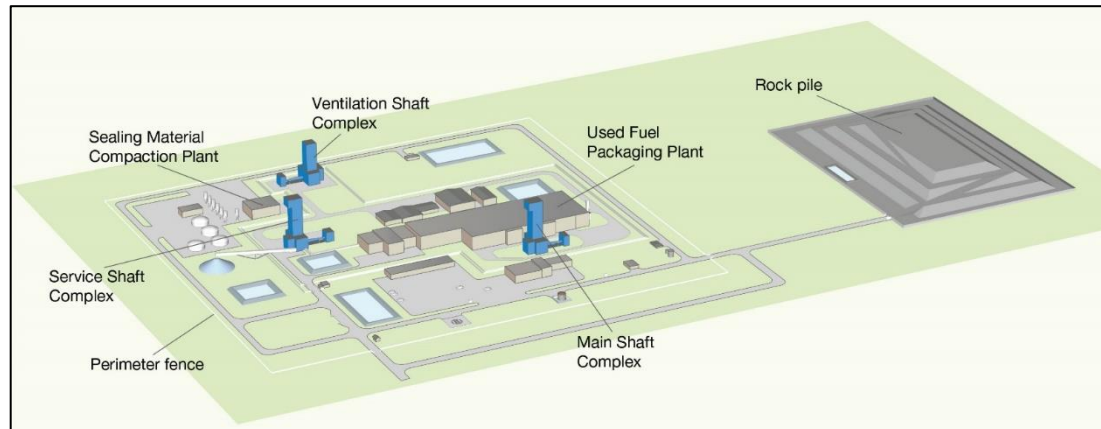
- 1. Ignace, Ontario
- 2. South Bruce, Ontario

Repository Engineering & Facility Design

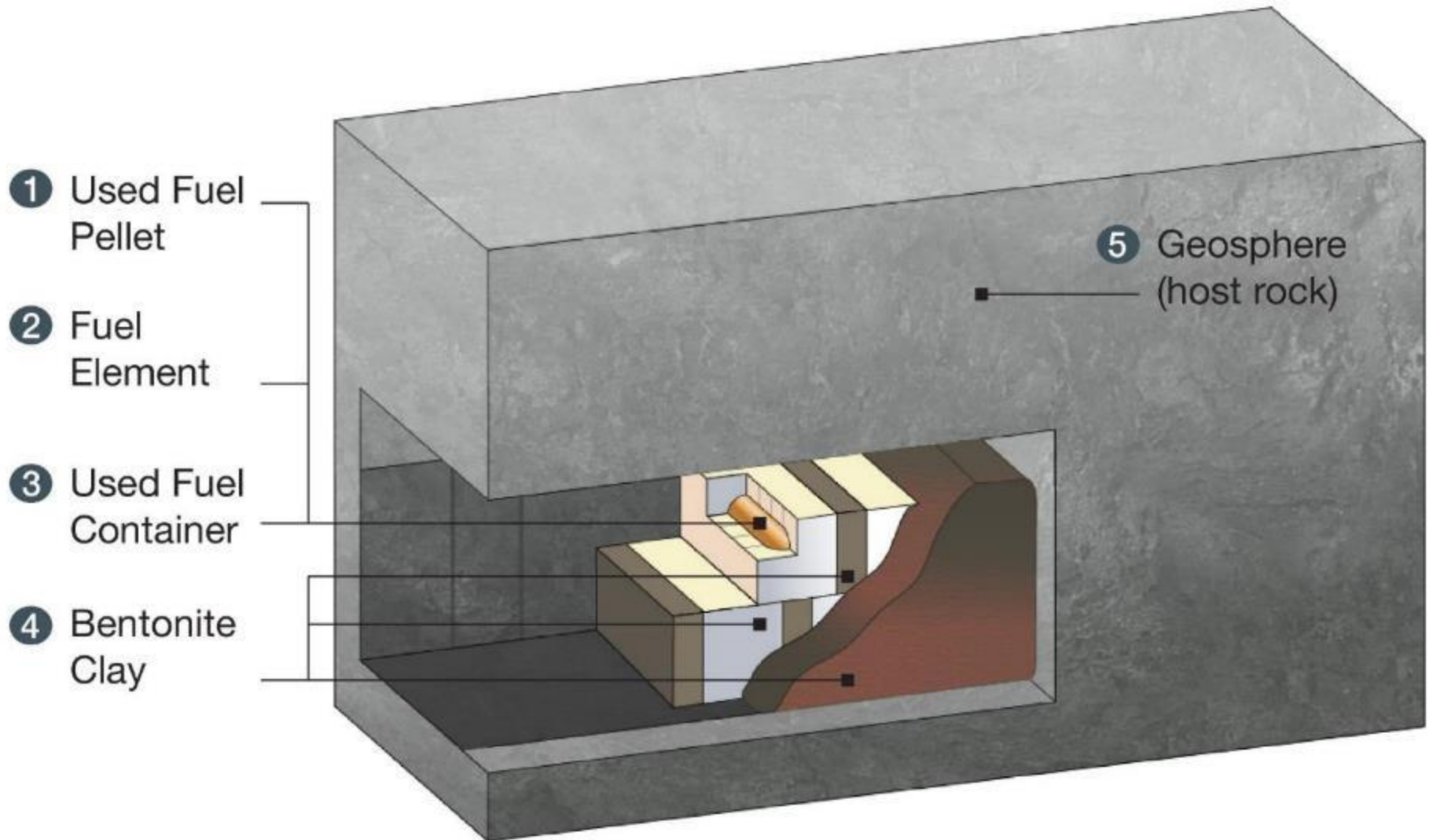


LEGEND

- A. Surface facilities
- B. Services area
- C. Placement rooms
- D. Rock pile



Multiple Barriers to Contain and Isolate



Technical Evaluation Criteria

Six safety functions

1. Safe containment and isolation of used nuclear fuel
2. Long-term resilience to geological processes and climate change
3. Isolation of used nuclear fuel from future human activities
4. Amenable to site characterization and data interpretation activities
5. Safe construction, operation and closure of the repository
6. Safe, secure transportation routes

Council of Elders & Youth

Independent advisory body to advise on interweaving Indigenous Knowledge and establishing meaningful relationships with Indigenous communities.



Path to Site Selection

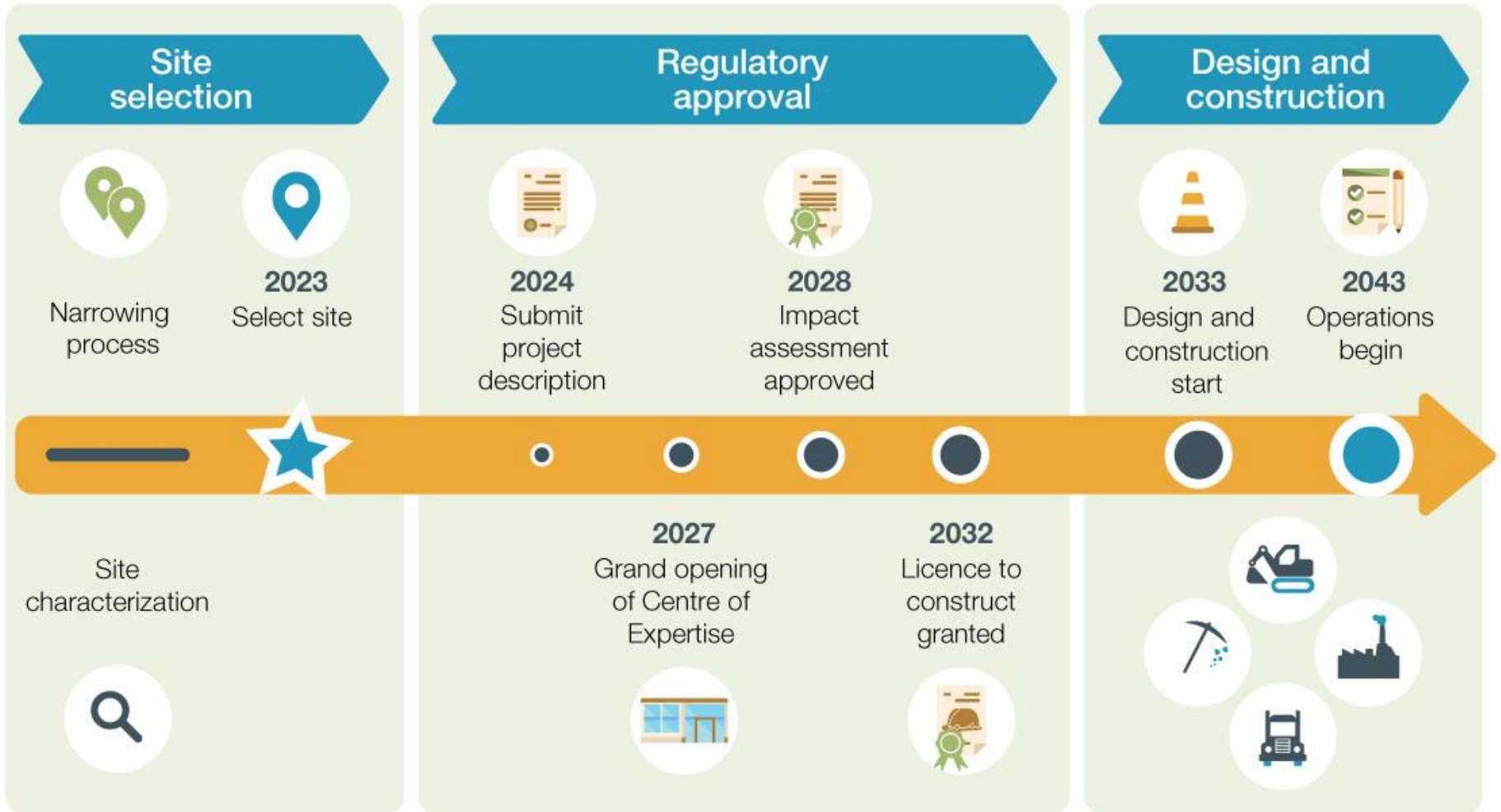


Community Well-Being

- Project commitment to contribute to long-term well-being
- Communities encouraged to consider project in context of long-term interests
- Community needs to be involved to help plan in a way that enhances well-being
- The extent to which the project contributes to the communities' vision is a matter for the communities to discuss and assess



Project Timelines



MARCH 2021



Site Selection Update

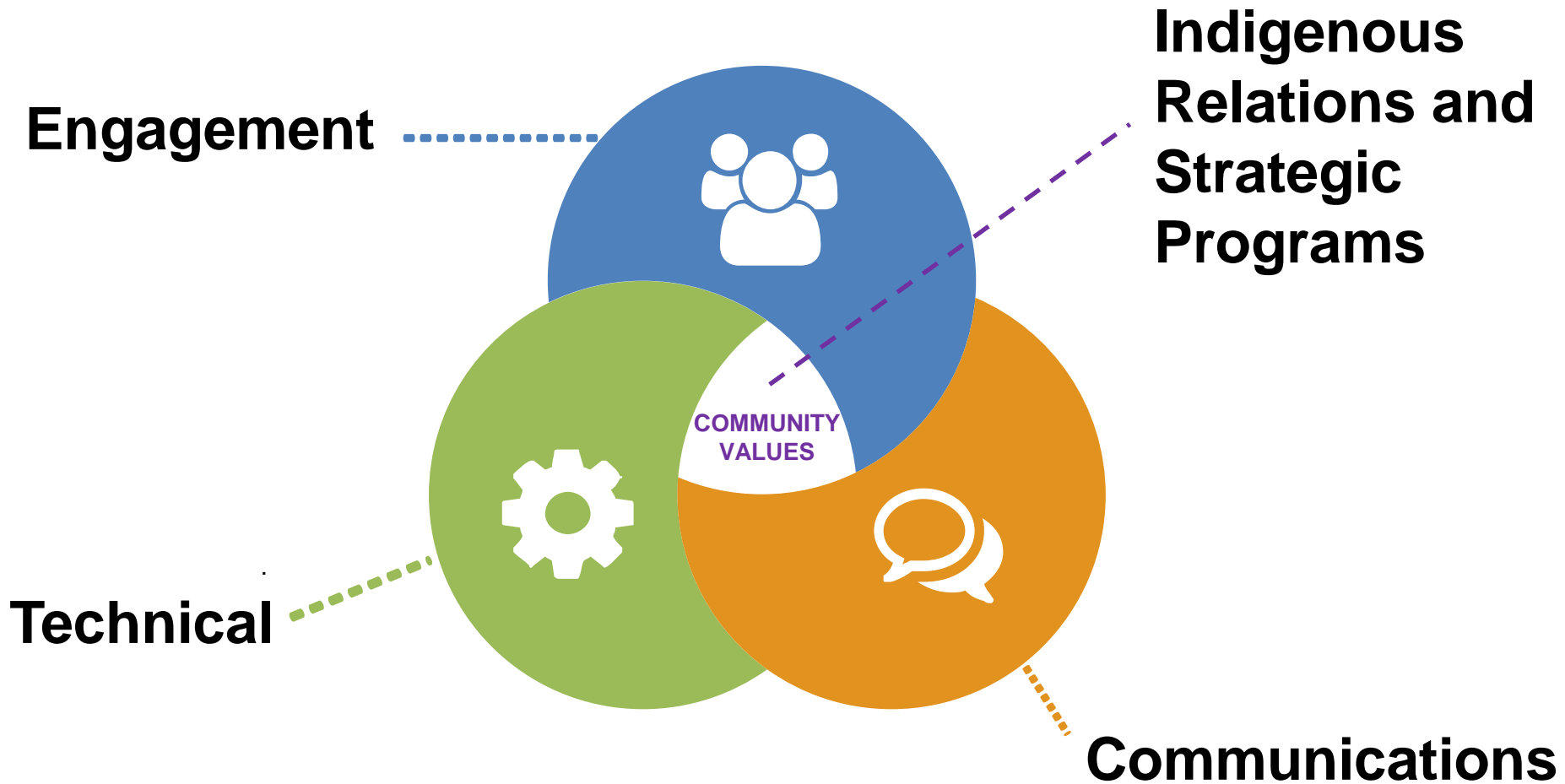
Site Selection Update

- Ignace: Four boreholes drilled to date. Boreholes 5 & 6 began April 2021; borehole 5 complete.
- South Bruce: Borehole 1 began April 2021. Current depth 600+m.
- Exploring the potential of partnerships
- Ongoing local and regional engagement to build awareness of the project and safety
- Engagement with Indigenous communities
- Undertaking socio-economic studies



Transportation

Transportation at the NWMO



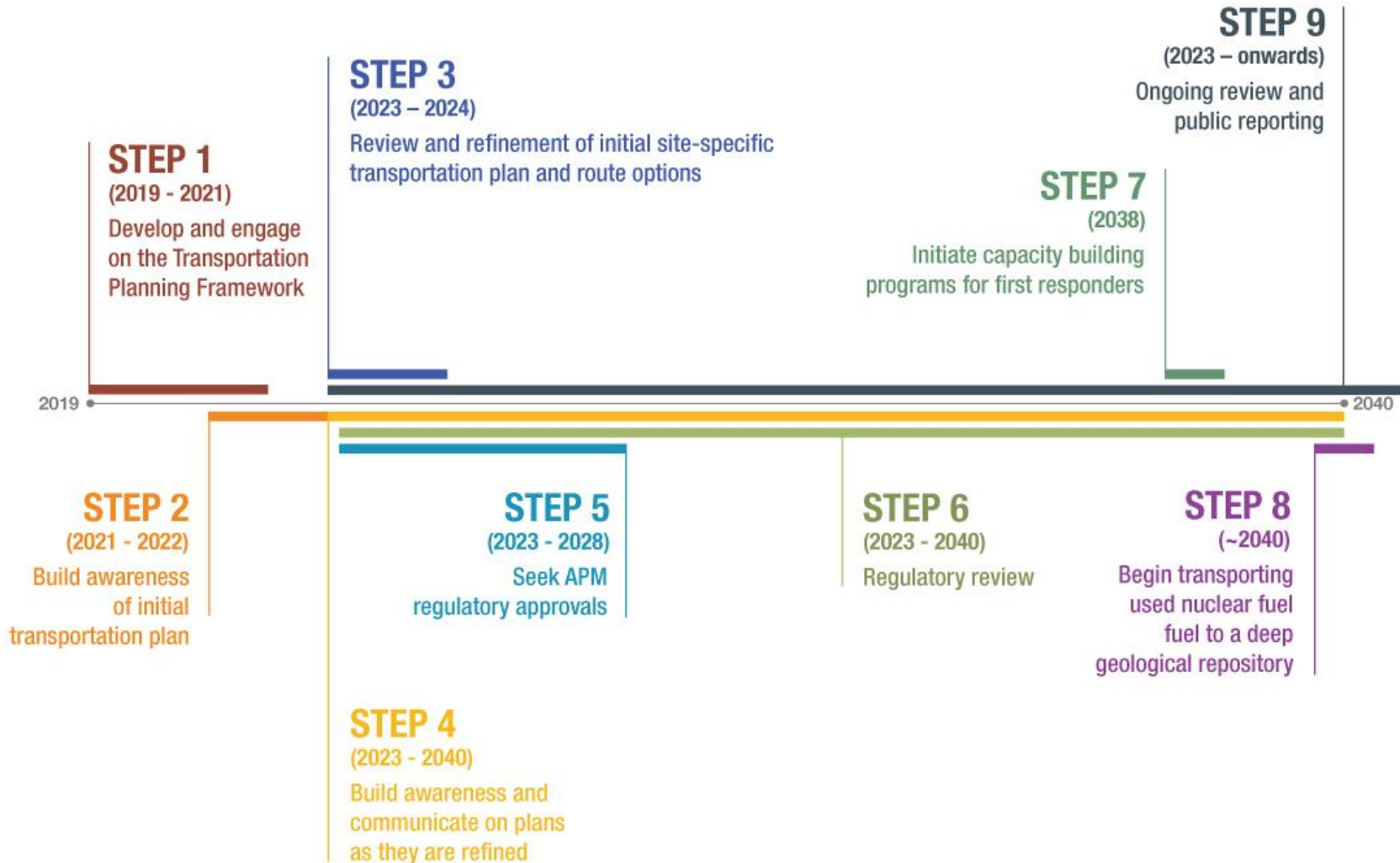
Transportation is Safe and Secure



What about Modes and Routes?



NWMO's Approach to Transportation





National & International Collaboration

National & International Collaboration

International Organizations



Canadian Universities



National Labs



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Nuclear Waste Management Organization