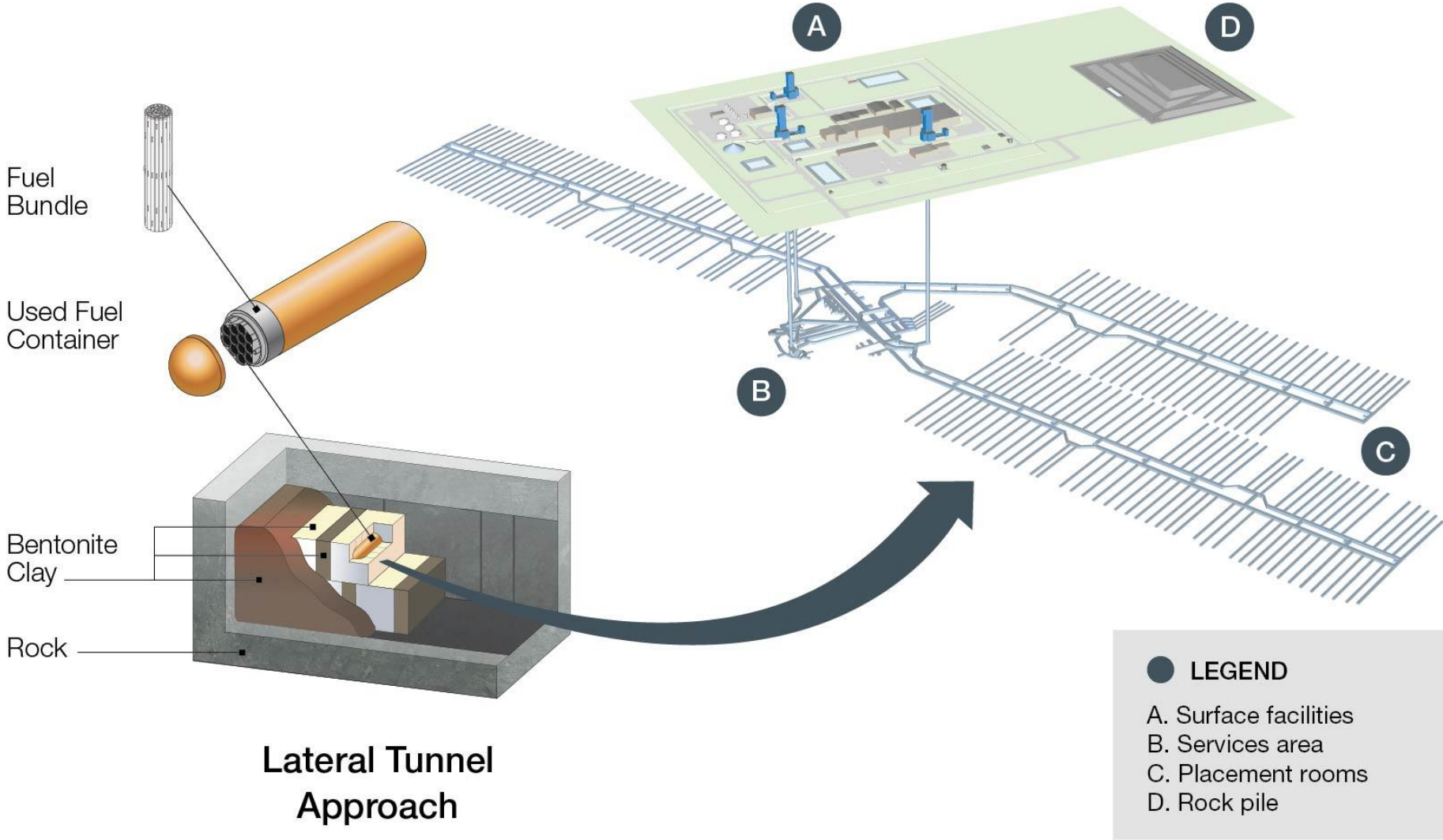# NWMO Project Update and Transportation Planning

Caitlin Burley
Director, Strategic Programs and Transportation (Social)
Nuclear Waste Management Organization
April 19, 2024

Canada's plan

Long-term management

Fuel
Bundle

Used Fuel
Container

Bentonite
Clay

Rock

**Lateral Tunnel
Approach**

A

D

B

C

● **LEGEND**

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

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● **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 / Wabigoon Lake Ojibway Nation
2. South Bruce / Saugeen Ojibway Nation

MANITOBA

ONTARIO

QUEBEC

NEW BRUNSWICK

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1889

1908

Treaty 5

1875

1929-30

Treaty 9

Treaty 6
1876

MANITOBA

ONTARIO

QUEBEC

NEW
BRUNSWICK

1905

Robinson-Huron
Treaty 1850

Treaty 4
1874

Treaty 2
1871

Treaty 1
1871

Treaty 3
1873

Robinson-Superior
Treaty 1850

Williams Treaties
1923

⑥

⑦

Peace and
Friendship Treaties

⑤

Manitoulin Island
Treaty 1862

② ③

④

Upper Canada
Treaties

● Interim Storage Facilities

1. Whiteshell Laboratories, Manitoba
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   New Brunswick

■ Assessments underway in the area

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Siting Update

Site Investigation:
Wabigoon Lake Ojibway Nation - Ignace

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Site Investigation:
Saugeen Ojibway Nation - South Bruce

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Site Selection Criteria

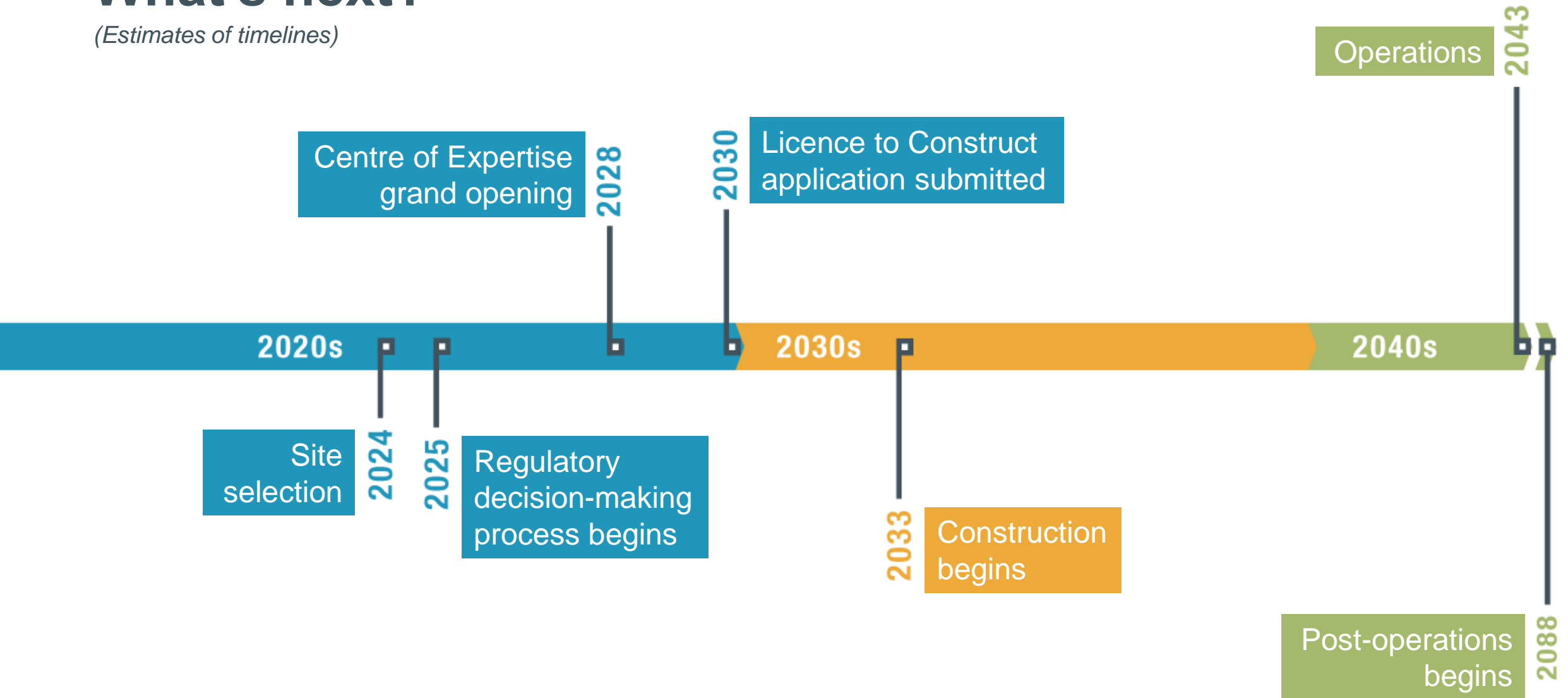To identify a preferred location to take into detailed site characterization

Safety

1 — 2 — 3

Transportation
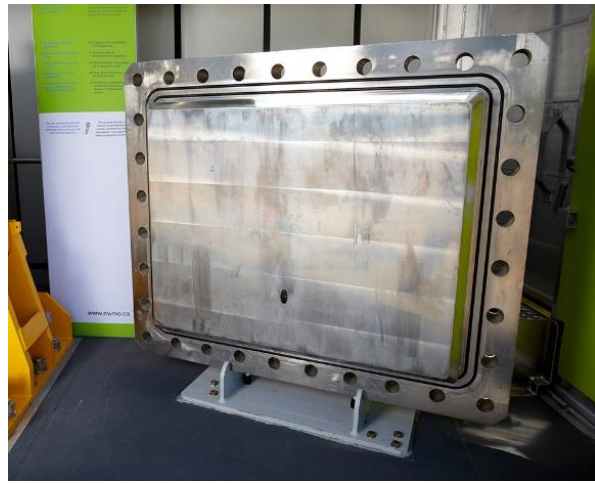
Partnership

What's next?

(Estimates of timelines)

Operations — 2043

Centre of Expertise grand opening — 2028

Licence to Construct application submitted — 2030

Site selection — 2024

2025 — Regulatory decision-making process begins

2033 — Construction begins

Post-operations begins — 2088

2020s   2030s   2040s

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Introduction to transportation of used nuclear fuel

Transportation is safe and secure
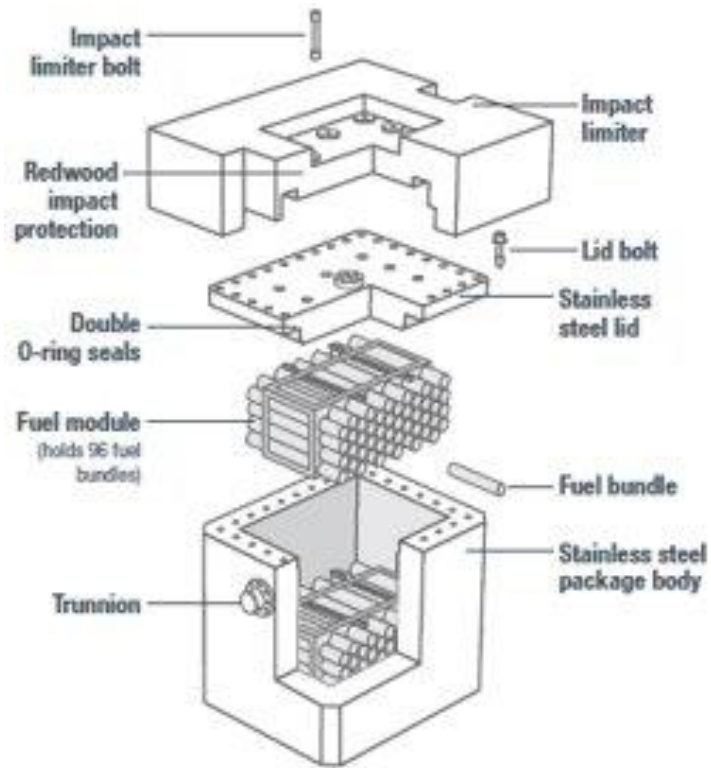
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The NWMO's multi-layered safety program

Management system and compliance assurance
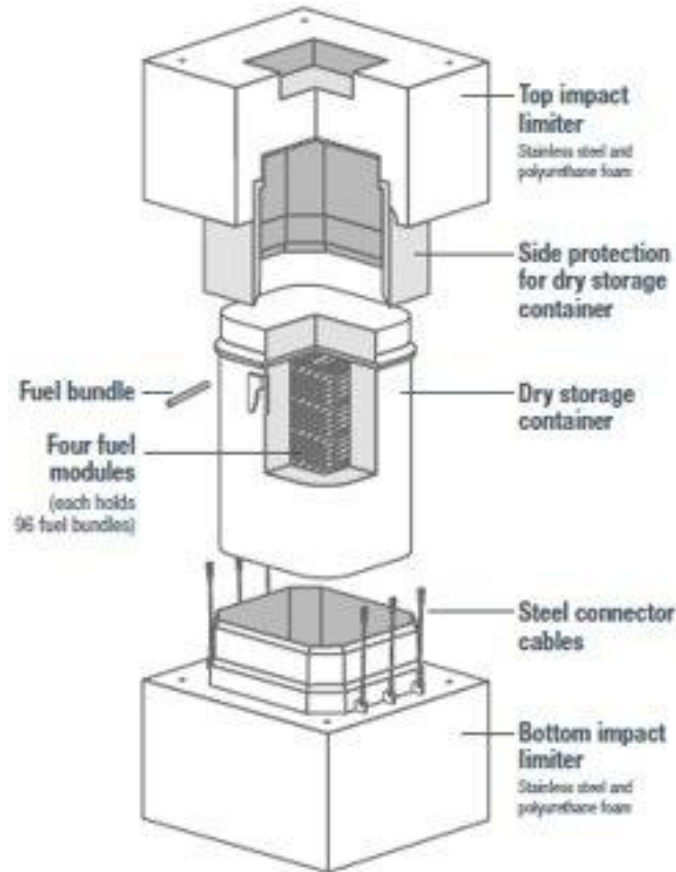
Security and emergency management

Operational controls
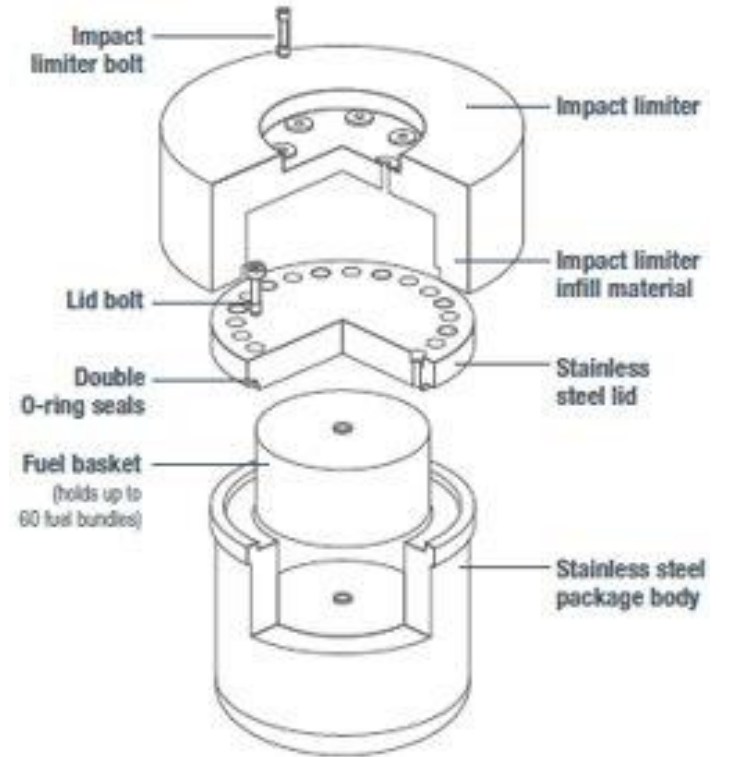
Certified and registered packages

Transportation packages
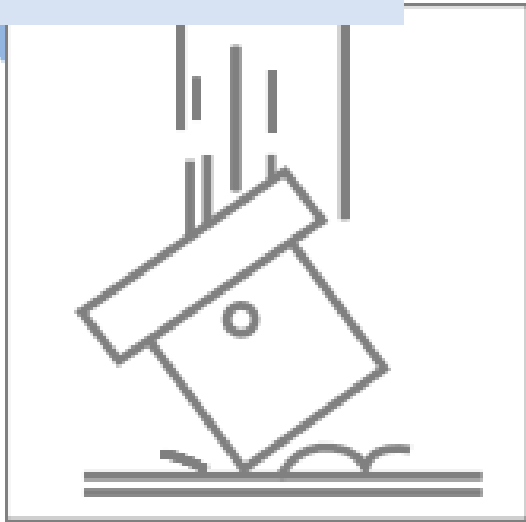

Used Fuel Transportation Package (UFTP)

Dry Storage Container Transportation Package (DSC-TP)
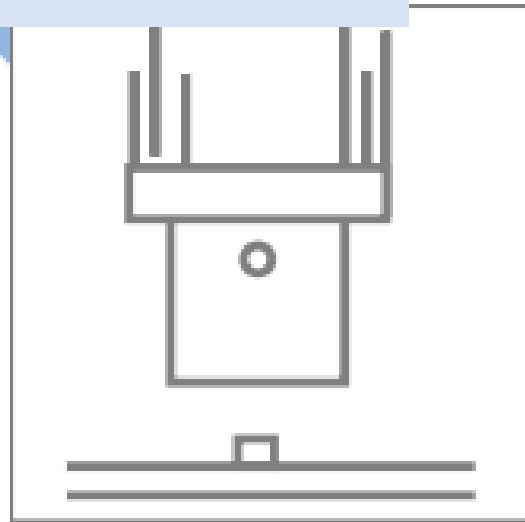
Basket Transportation Package (BTP)
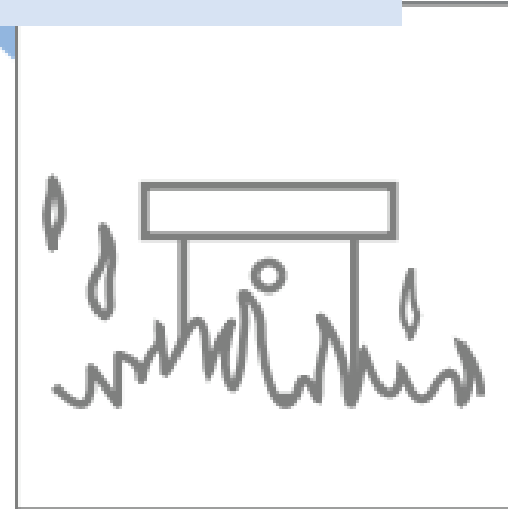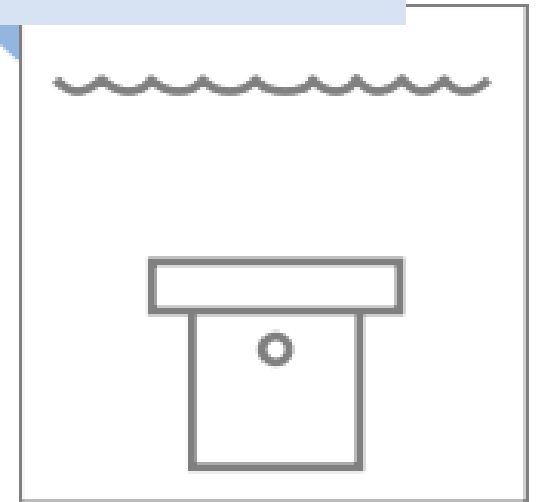
Transportation package testing

Free-drop test

Puncture test

Thermal test

Immersion test

Radiation safety

Comparison of Sources of Radiation

The graphic below compares dose rates from common sources of radiation to what members of the public would encounter if they were located 30 metres from a transportation route for used nuclear fuel and experienced all 620 truck shipments or 62 train shipments. Based on a generic dose study, the annual dose would be 0.000032 mSv, which is significantly lower than the public dose limit of 1 mSv set by the regulator.

7 mSv/event
Chest CT Scan

1.8 mSv/year
Average natural background radiation in Canada

7 mSv

1.8 mSv

1 mSv

Regulatory Dose Limit: 1 mSv/year

0.03 mSv/event
Flight Toronto-Vancouver

0.01 mSv/event
Dental X-ray

0.03 mSv

<0.001 mSv/year
Boundary of the DGR

0.01 mSv

0.0001 mSv/item
Eating a banana

0.000032 mSv/year
Public along transport route

0.001 mSv
0.0001 mSv

0.000032 mSv

0 mSv
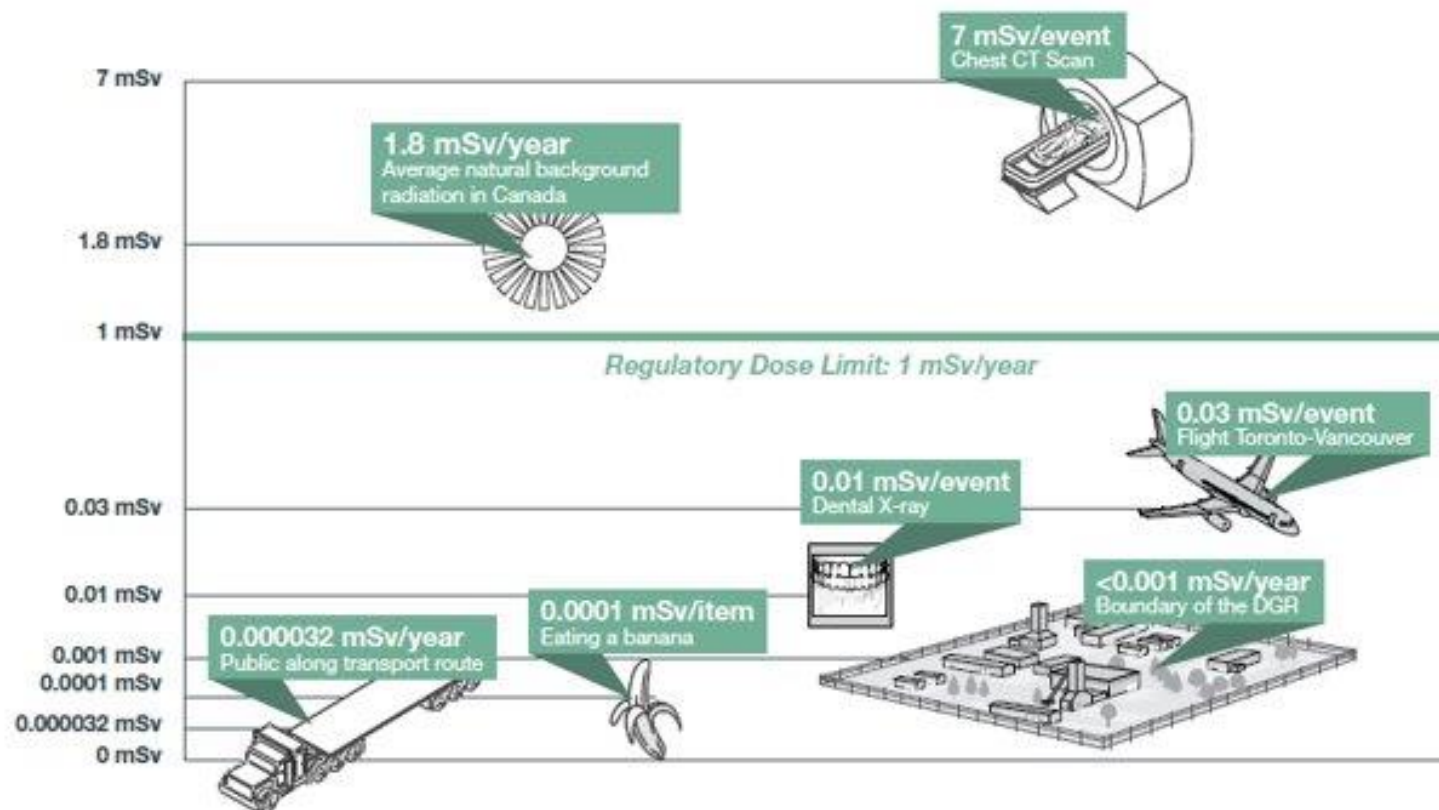
Hearing from the public on priorities, questions and concerns

- Since 2015 we have heard from thousands of individuals and groups on the subject
  - Over 1,000 meetings
  - Engage with roughly 5,000 people every year

Transportation Planning Framework

Public-identified priorities

Safety is the primary consideration

Protecting the environment

Respectful relationship with First Nation and Métis communities

Security

Emergency response planning

Drawing on international lessons learned

Ensuring that the plan is adaptive

Training

Monitoring, tracking and auditing

Communication, education and engagement

Ensuring program sustainability

Considering infrastructure

Proposed approach to implementing framework

The approach will be flexible and adaptive, and continue to involve people at key milestones along the way

Implement collaborative planning

Based on advice and recommendations, move forward with implementation, to be reviewed every three years.

Seek feedback on framework

Continuously seek feedback on priorities, objectives and principles in the framework through:
» Council of Elders and Youth;
» Triennial Reconciliation assessment; and
» Engagement.

Seek feedback on implementation

Seek feedback on culture-centred implementation approach through:
» Council of Elders and Youth;
» Community-based working group;
» Internal working group; and
» Engagement.

Revise and update framework

Revise the document every three years to reflect feedback.

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