



## OPG's Fall 2016 Update

- Western Waste Management Facility
- Deep Geologic Repository Project

November, 2016

**ONTARIO****POWER**  
GENERATION



# Agenda

- OPG's Western Waste Management Facility (WWMF)
  - Update on Licence Renewal
  
- OPG's Deep Geologic Repository (DGR)
  - Response to Federal Request for Additional Information
  
- Questions



# WWMF Licence Renewal



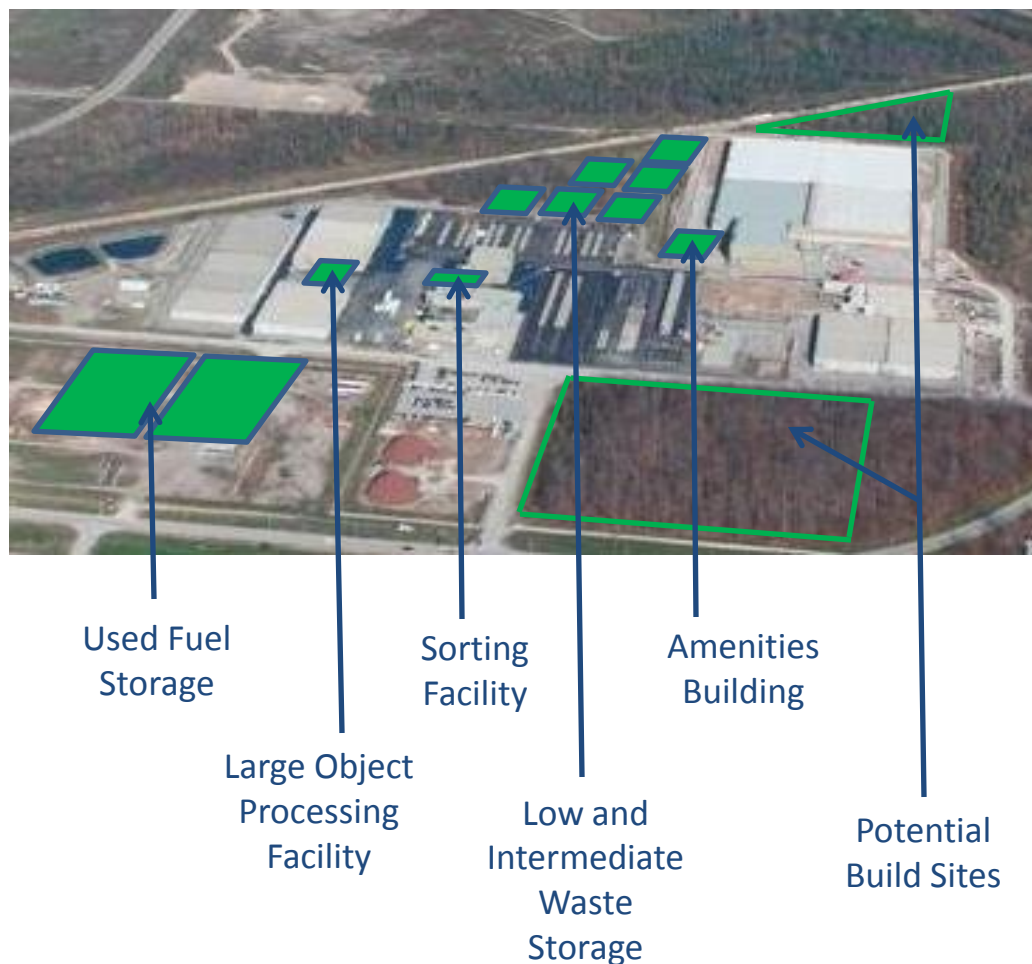
Aerial view of OPG's Western Waste Management Facility, and the site for the proposed DGR, at the Bruce nuclear site in Kincardine, Ontario.

- Applying to Canadian Nuclear Safety Commission to renew licence for next 10 years.
- Hearings in April 2017.
- Seeking licence to expand capacity at current site for continuing “business as usual.”
- Proposed DGR is not part of this licence process – it is a separate regulatory process.





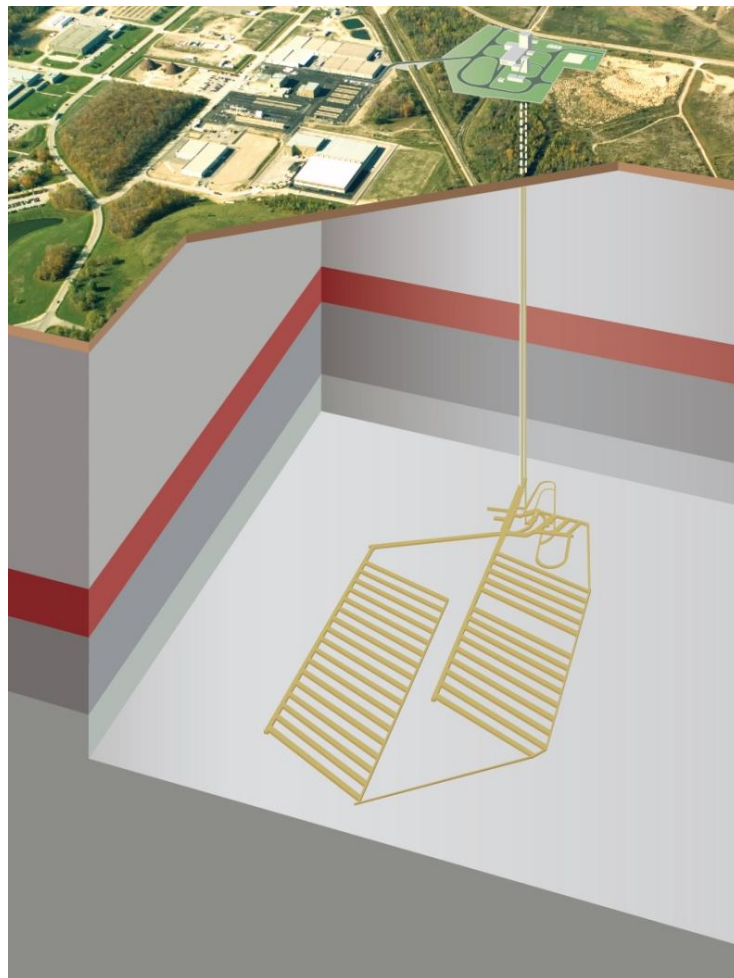
# WWMF – Adding Capacity



- Licence application envisions additional structures, due to:
  - Darlington refurbishment and continued operation
  - Pickering continued operation to 2024
  - Bruce Power refurbishment and continued operation
  - New facilities for sorting and diverting low level waste and segmenting large metal components
- Additional structures would be constructed on an as-needed basis



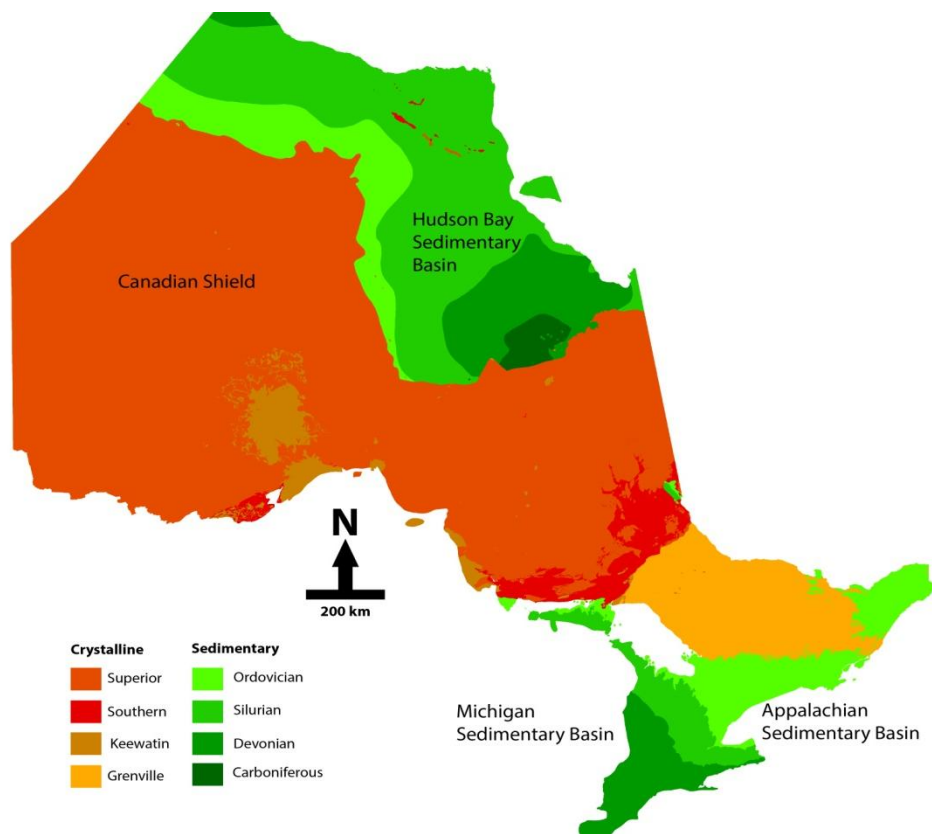
# OPG's Deep Geologic Repository



- OPG's proposal for the long-term management of nuclear waste is a Deep Geologic Repository (DGR) at the Bruce site.
- The DGR will safely store low and intermediate level waste 680 metres underground in impermeable rock.
- OPG is seeking regulatory approval.
- In February, federal government requested three additional studies:
  1. Environmental Effects of Alternate Locations including transportation
  2. Update of Cumulative Effects Analysis
  3. Consolidation of Mitigation Commitments



# Alternate Site – Preliminary Findings



- OPG examined the environmental effects of the DGR at alternate locations in two different geologic regions in Ontario:
  - Sedimentary region in Southern Ontario (the green area)
  - Granite/crystalline region in Northern Ontario (the orange area)
- Reference locations were designed to be representative of environmental features that would be found in those regions



## Alternate Locations – More Effects

**Environmental Effects  
at a Fractured  
Crystalline Location**

**Environmental  
Effects at an  
Alternate  
Sedimentary  
Location**

**Environmental  
Effects at the Bruce  
Nuclear Site**

- More environmental effects occur at the Alternate Locations due to:
  - Acquisition of new land.
  - Creation of a new, secure nuclear facility.
  - Installation of site infrastructure.
  - Additional waste packaging and transportation.
- The effects would be on all aspects of the environment:
  - Land use, terrestrial, aquatic, atmospheric
  - Additional GHG emissions
- Mitigation measures are expected to eliminate, minimize or control the majority of these effects
  - No significant adverse effects are predicted





## Alternate Locations – More Uncertainty

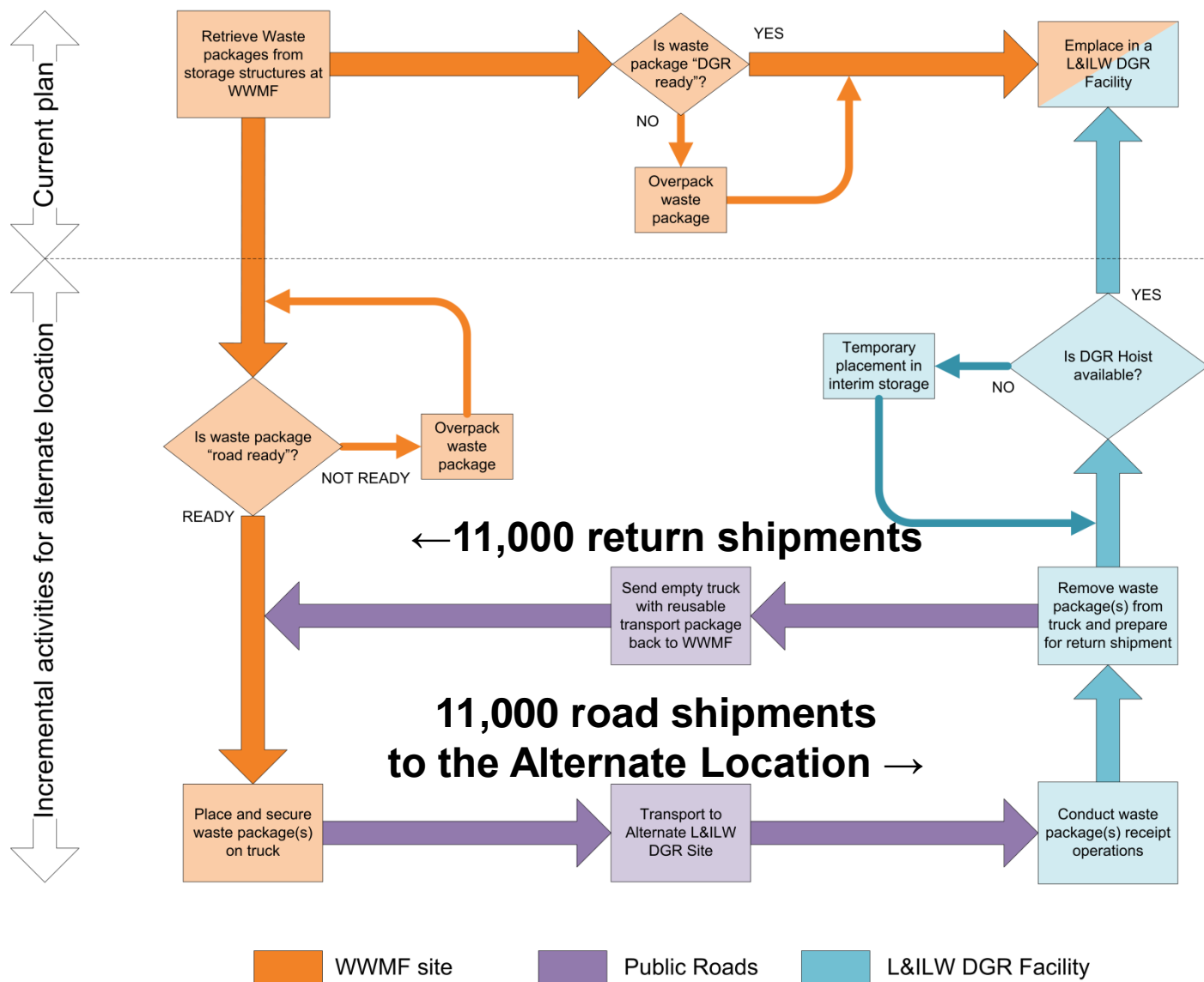
- Developing an Alternate Location would also result in:
  - An increase in transportation risks: 22,000 shipments on public roadways.
  - Increased uncertainty (schedule, cost) arising from siting and licensing requirements.
  - Extended operation of WWMF to store waste until alternate DGR is created.
  - A multi-billion dollar cost impact (fractured crystalline has highest potential cost),
  - No assurance of improved safety.
- Keeping the DGR at the Bruce Nuclear site remains the preferred plan.





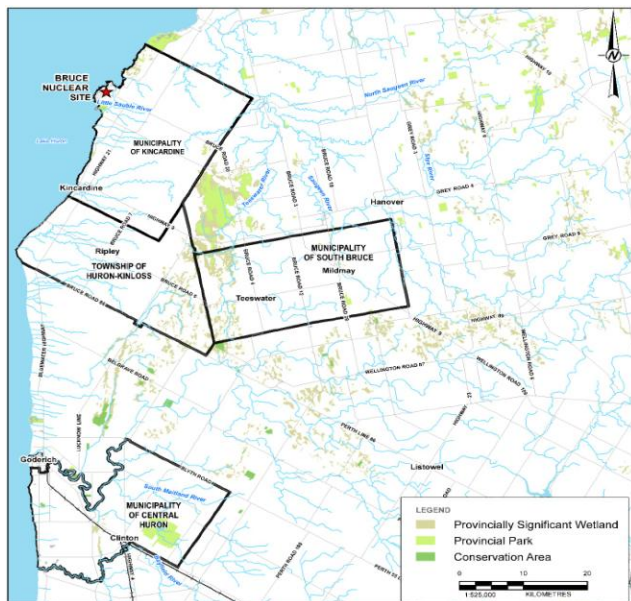


# Alternate Locations – Transport of Waste





# DGR Cumulative Effects Analysis



- The Cumulative Effects Analysis was updated to determine combined environmental effects if one region hosts two different DGRs:
  1. OPG's DGR for low and intermediate level waste
  2. Future Nuclear Waste Management Organization's Adaptive Phased Management (APM) DGR, for used fuel
    - *It was recognized that no sites have been identified for the APM DGR and no community has volunteered to accept the project.*
- Potential interactions with several environmental components were identified for study.
- Conclusion: No potential exists for likely adverse cumulative effects.



# DGR Environmental Mitigations

Dust Suppression

Groundwater Monitoring

Visual Screening

- OPG made over 1,300 commitments in the Environment Impact Statement and during the DGR hearings.
- About 800 of the commitments were associated with environmental effects and environmental monitoring.
- These were consolidated into 150 commitments (considering any completed, updated or redundant commitments).
- The work is documented in one report, in a way that is traceable –for transparency and accountability.



## DGR – Next Steps

- OPG is on track to provide the Canadian Environmental Assessment Agency the requested information in December.
  - OPG will also post the information on its website
- This information supports the current plan for OPG's DGR at the Bruce Nuclear site as a safe, cost-effective, long-term waste-management solution.
- The Agency will announce plans for a public review of OPG's work prior to a decision on the Environmental Assessment.
  - Public funding is available to participate in the review.
- OPG remains committed to good stewardship of nuclear waste, with lasting solutions, for peace of mind.





Thank you

Questions?