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INDUSTRY INFORMATION DAY

Port Hope Long Term Waste Management Facility (PH LTWMF)

Presented by: Jimi Arey, PWGSC Senior Project Manager

July 31, 2013



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

Port Hope Project

1:00 – 1:05	Introductions <i>CHAIR: Menelaos Argiropoulos, (PWGSC)</i>
1:05 – 1:20	Opening Remarks <i>Sandra Young (PWGSC) & Dave McCauley (NRCan)</i>
1:20 – 1:30	Buy and Sell <i>Menelaos Argiropoulos, (PWGSC)</i>
1:30 – 2:30	Port Hope Project <i>Jimi Arey, (PWGSC)</i>
2:30 – 2:50	SMART Procurement & Industry Engagement Process <i>Dominique Labrecque, (PWGSC)</i>
2:50 – 3:15	Q&A
3:15 – 3:30	Closing & Next Steps



Port Hope Project

Outline

1. History
2. Overall Port Hope Area Initiative (PHAI)
3. Port Hope Project (PHAI-PH)
4. The Long Term Waste Management Facility
5. Project Elements
6. Project Limitations



Port Hope Project

HISTORY

- 1930: Eldorado Gold Mines found pitchblende on eastern shore of Great Bear Lake, NWT
- 1932: Marcel Pochon assumes role of chief chemist at Port Hope radium refinery
- 1941: Contracts for uranium refining signed with US military
- 1944: Company becomes federal Crown Corporation
- 1944 - 1954: Plant operations shift from radium to uranium refining
- 1933 - 1948 process residues/waste distributed within urban Port Hope
- 1948-1954: process wastes placed at the urban Welcome WMF
- 1955-1988: process wastes placed at the urban Port Granby WMF
- 1988: Eldorado dissolved to become Cameco (private company)



Port Hope Project

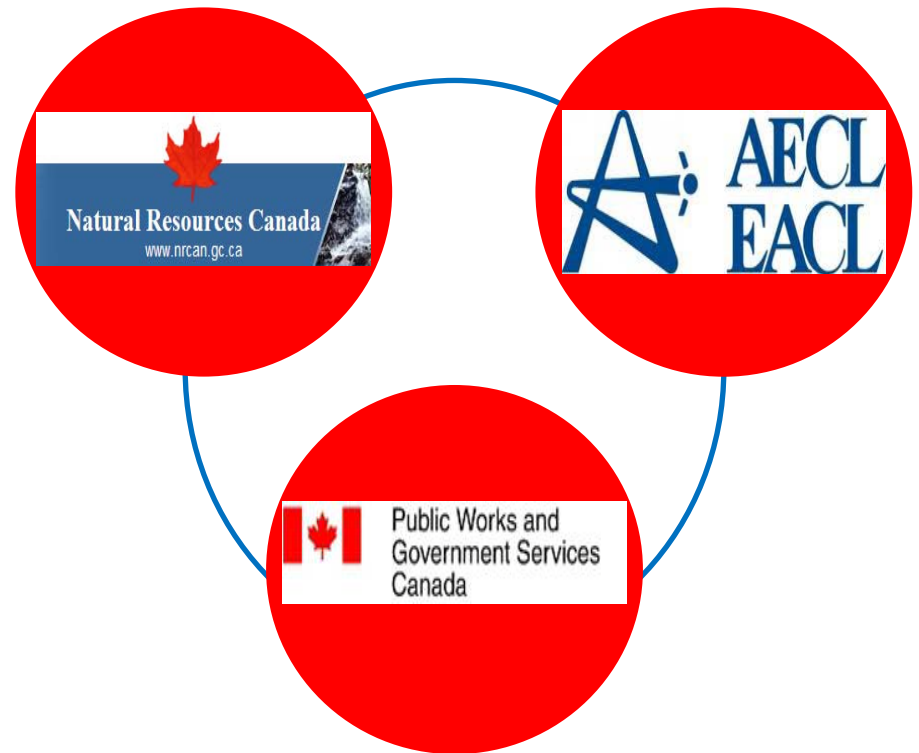
HISTORY Cont'd

- 1976 and onward: the Government starts a program of radiation reduction in Port Hope.
 - Removes more than 100,000 M³ contaminated soil to Chalk River
 - Establishes the Low Level Radioactive Waste Management Office
 - Signs an agreement with the local municipalities – establishes the Port Hope Area Initiative (PHAI) to safely manage the historic radioactive waste.
- 2001: Landmark Agreement was signed between the Government of Canada and the Municipality of Clarington, the Town of Port Hope, and Hope Township committing to the cleanup and local, long-term, safe management of historic LLRW in these communities.



Port Hope Area Initiative (PHAI)

- The Federal Government is funding this multi-year Initiative
- Tripartite Federal organizations: Natural Resources Canada (NRCan), Atomic Energy of Canada (AECL), and Public Works and Government Services Canada (PWGSC).
- PWGSC is the Contracting Authority.



Port Hope Area Initiative (PHAI) – Cont'd

- Two projects within initiative (*geographically separated*)
 - Port Hope Project and
 - Port Granby Project
- Both projects are licensed by the Canadian Nuclear Safety Commission. AECL holds the license.



ONE INITIATIVE, TWO PROJECTS



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Port Hope Project

The relocation of approximately “1,200,000 m³” of mixed historic low-level radioactive waste material and marginally contaminated soils (MCS) from the existing waste management facility, a number of major sites and small scale sites in Port Hope to a new engineered containment facility.



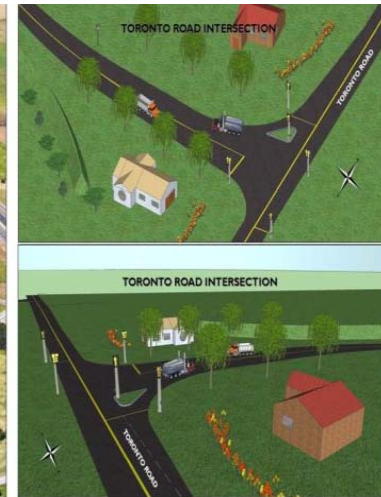
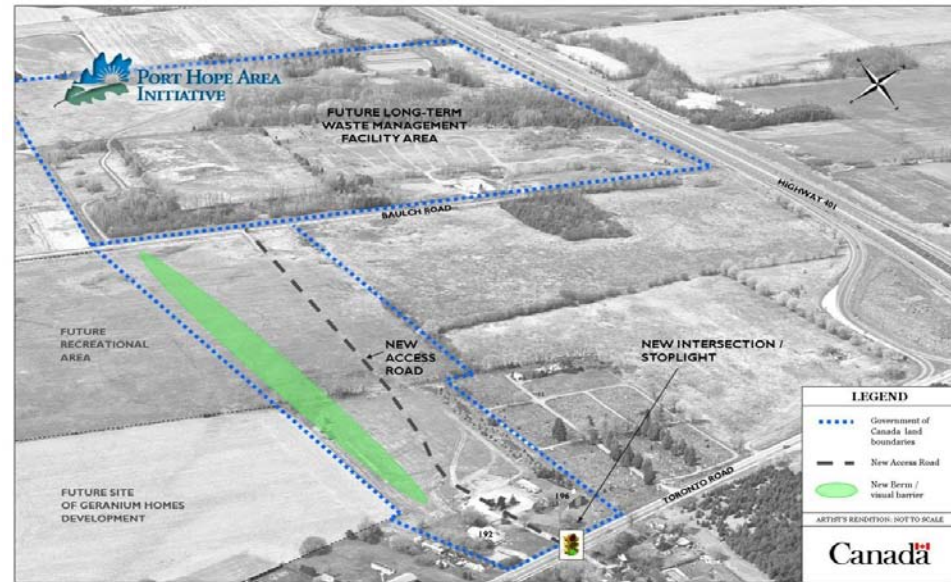
The Port Hope Project is Comprised of

- The construction of a new Access Road to the new Long Term Waste Management Facility (LTWMF) **Completed**
- The construction of a new Water Treatment Plant (WTP) at the existing Welcome Waste Management Facility (WWMF) **Under Construction**
- The excavation and placement of contaminated waste located at area where support buildings & underground infrastructure will be located
- The construction of an engineered, above-ground mound cell 1
- The construction of the LTWMF support buildings & underground infrastructure
- The excavation and placement of contaminated waste located on existing WWMF and from all major sites in Port Hope into the new LTWMF.

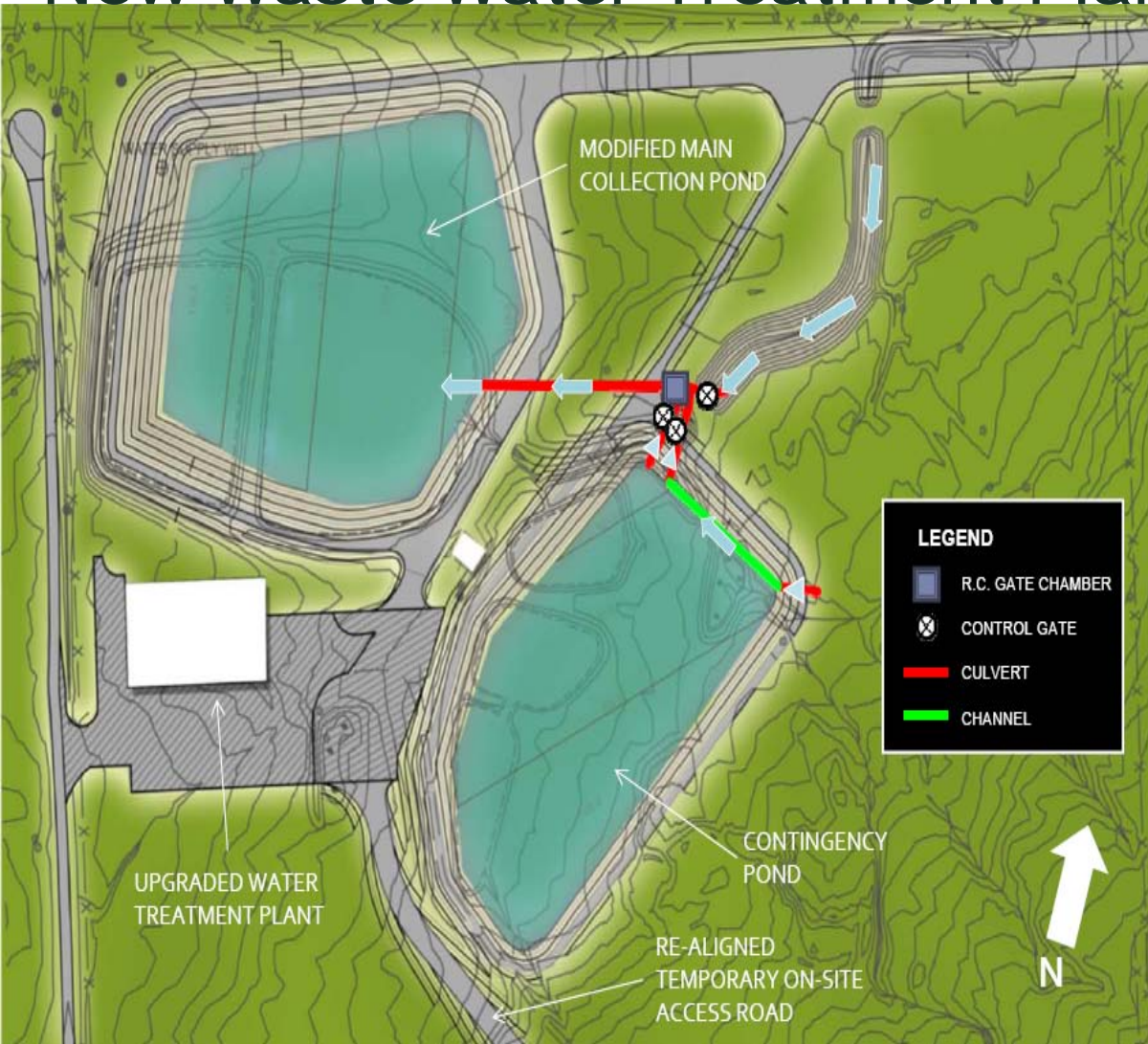


New LTWMF Access Road

- Construction of the new LTWMF access road is completed. Constructed from Toronto Road to Baulch Road it is required to serve the new LTWMF.
- The access road is the first step in building the enabling infrastructure needed to facilitate construction of the new long-term waste management facility and movement of the waste.



New Waste Water Treatment Plant



The new Water Treatment Plant (WTP) is being constructed in the vicinity of the existing Welcome WMF treatment system, adjacent to Brand Road. The WTP is designed to treat any collected leachate and potentially contaminated stormwater collected by the Site stormwater and leachate collection system prior to discharge to Lake Ontario.

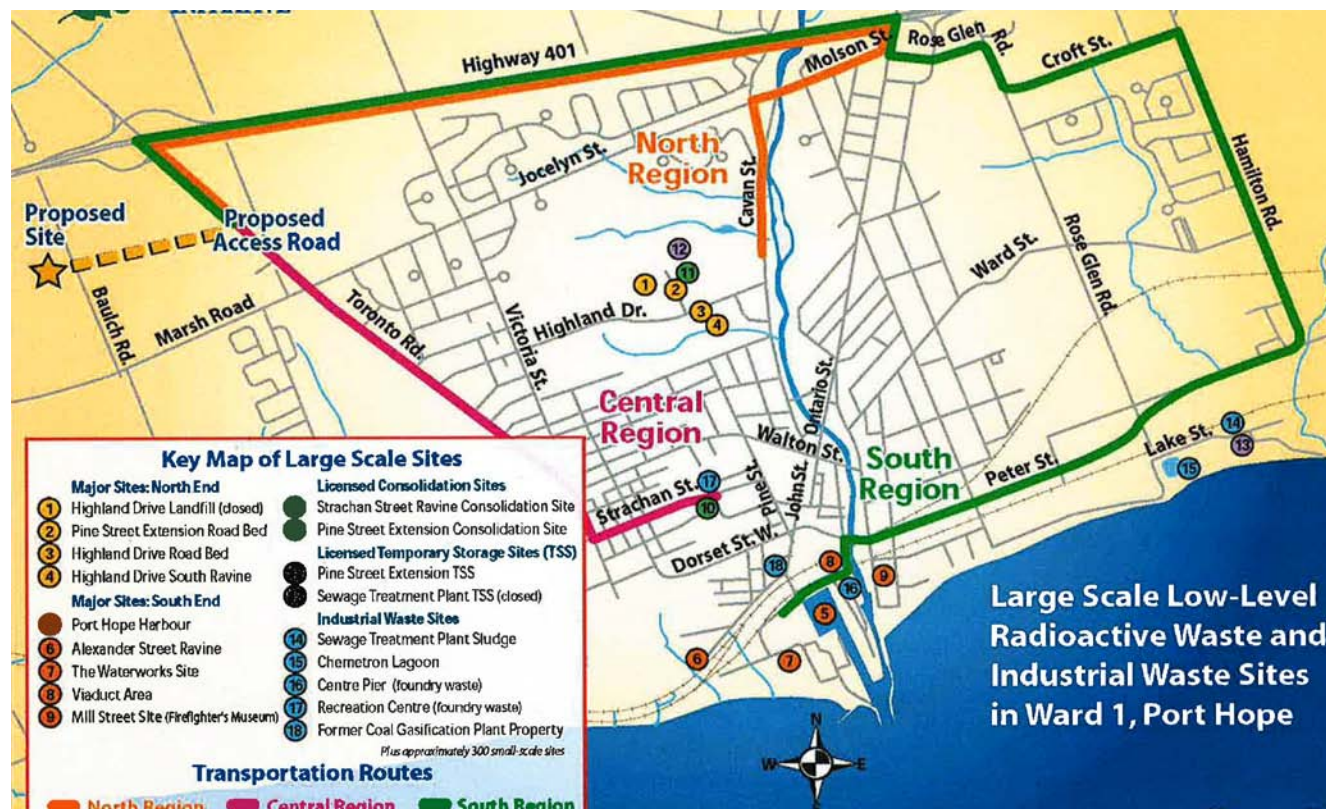


Planned Enabling Infrastructure Projects

- Construction of cell 1 (500,000 m³)
- Support Buildings & Underground Infrastructure
- Clearing and temporary stockpiling of existing LLRW



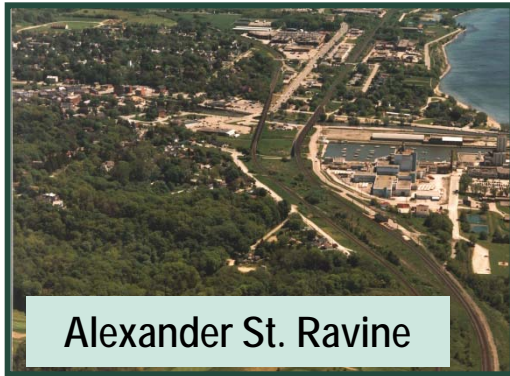
Port Hope Major Site Locations and LTWMF



- GROUP 2A - Ravines
- GROUP 2B - The Harbour
- GROUP 2D – Highland Dr. Landfill Area
- GROUP 3 – LTWMF and WWMF Remediation

GROUP 2A - Ravines

-  Alexander St. Ravine
-  Waterworks Site
-  Strachan St. Ravine Consolidation Site
-  Highland Dr. South Ravine



Alexander St. Ravine



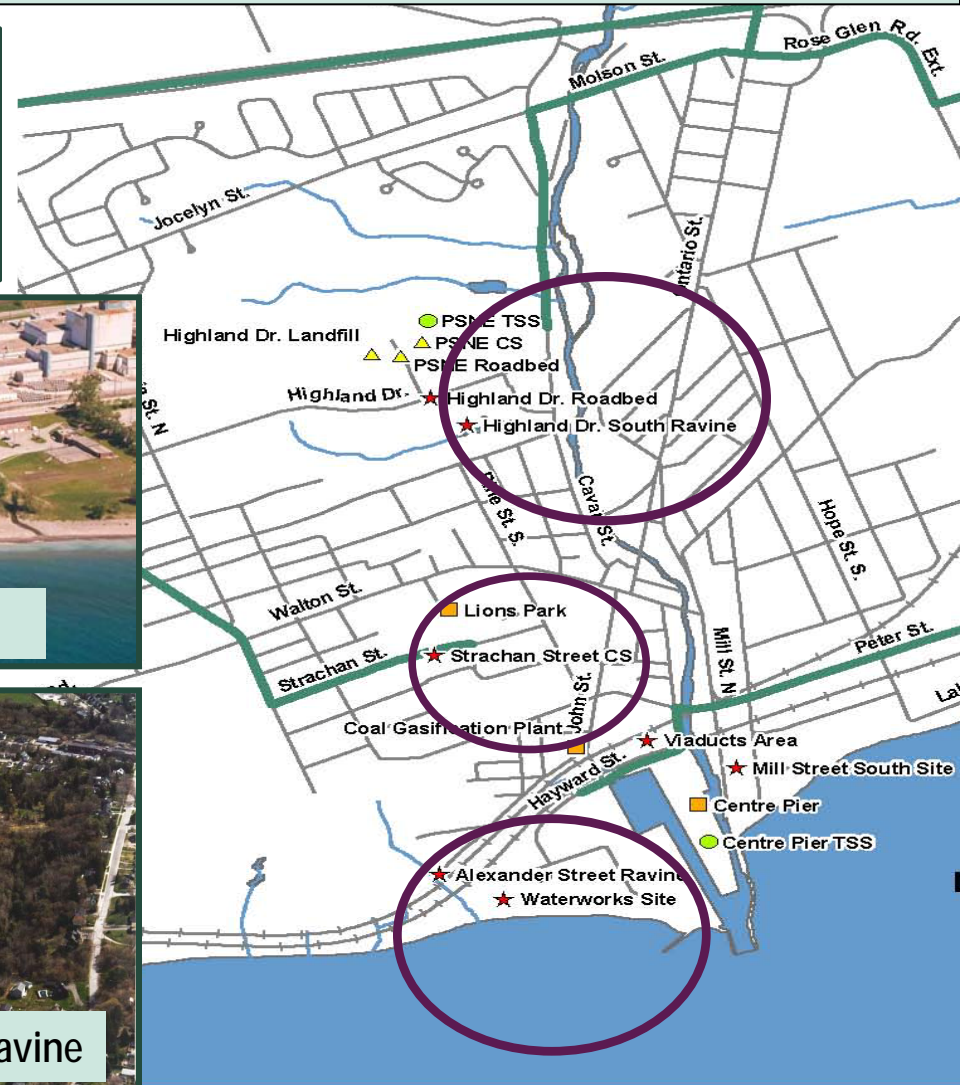
Waterworks Site



Strachan St. Ravine



Highland Dr. South Ravine

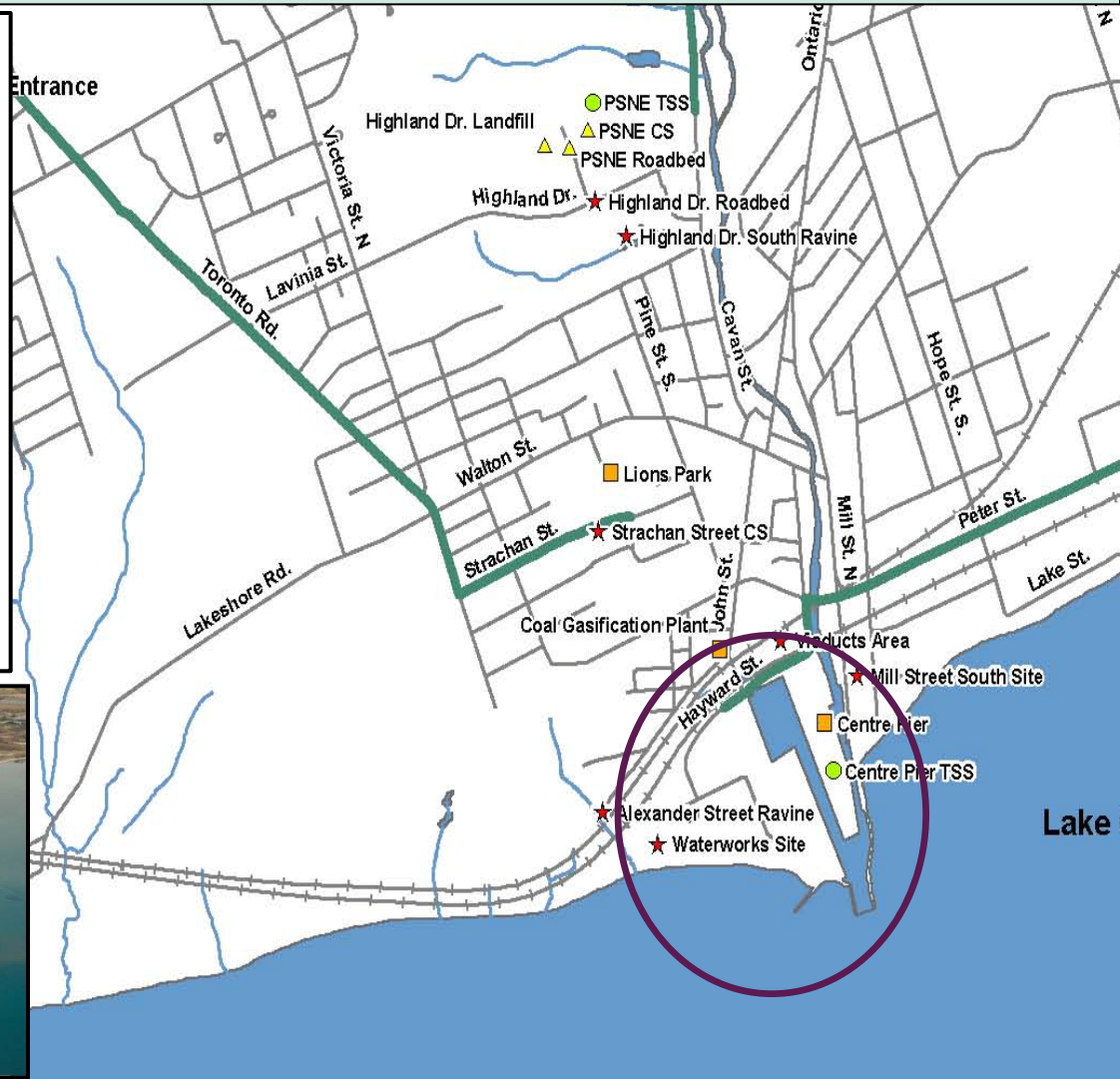


GROUP 2B – The Harbour

The Remediation site covers an area of approximately 4 ha including:

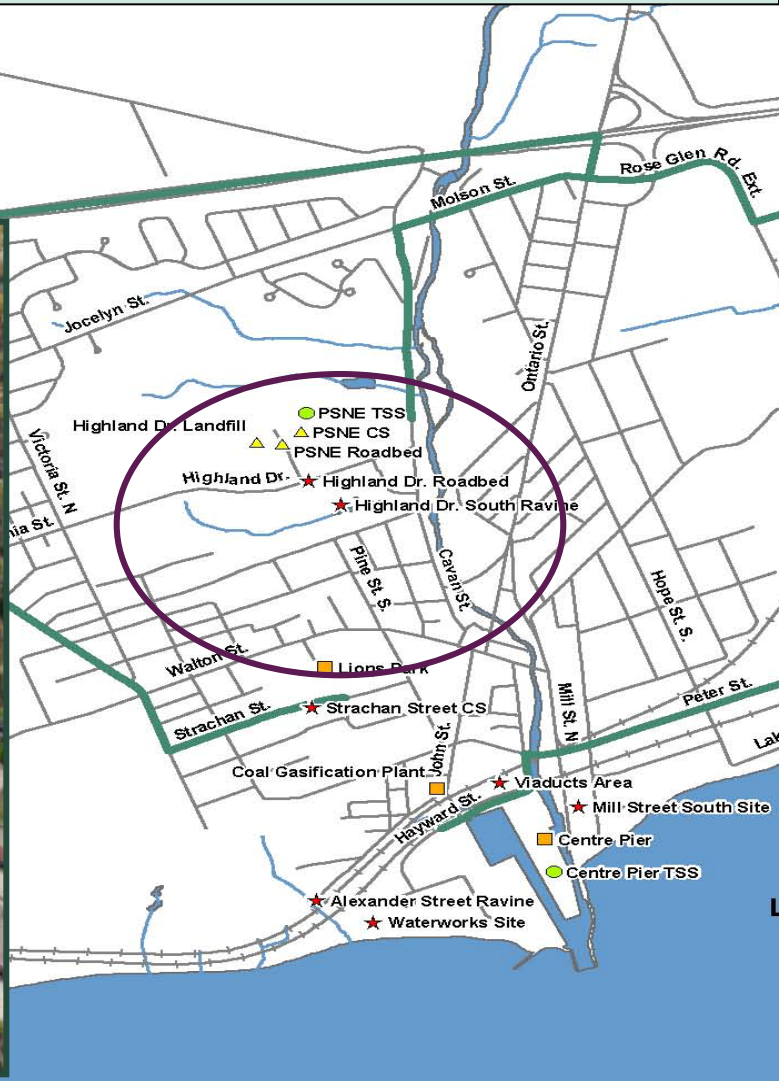
- The Turning Basin
- The Approach Channel

An estimated 110,500 m³ LLRW in the Harbour to be delivered to the LTWMF after dewatering. Contamination present exists as accumulated sediment in the bottom of the Turning Basin and the Approach Channel.



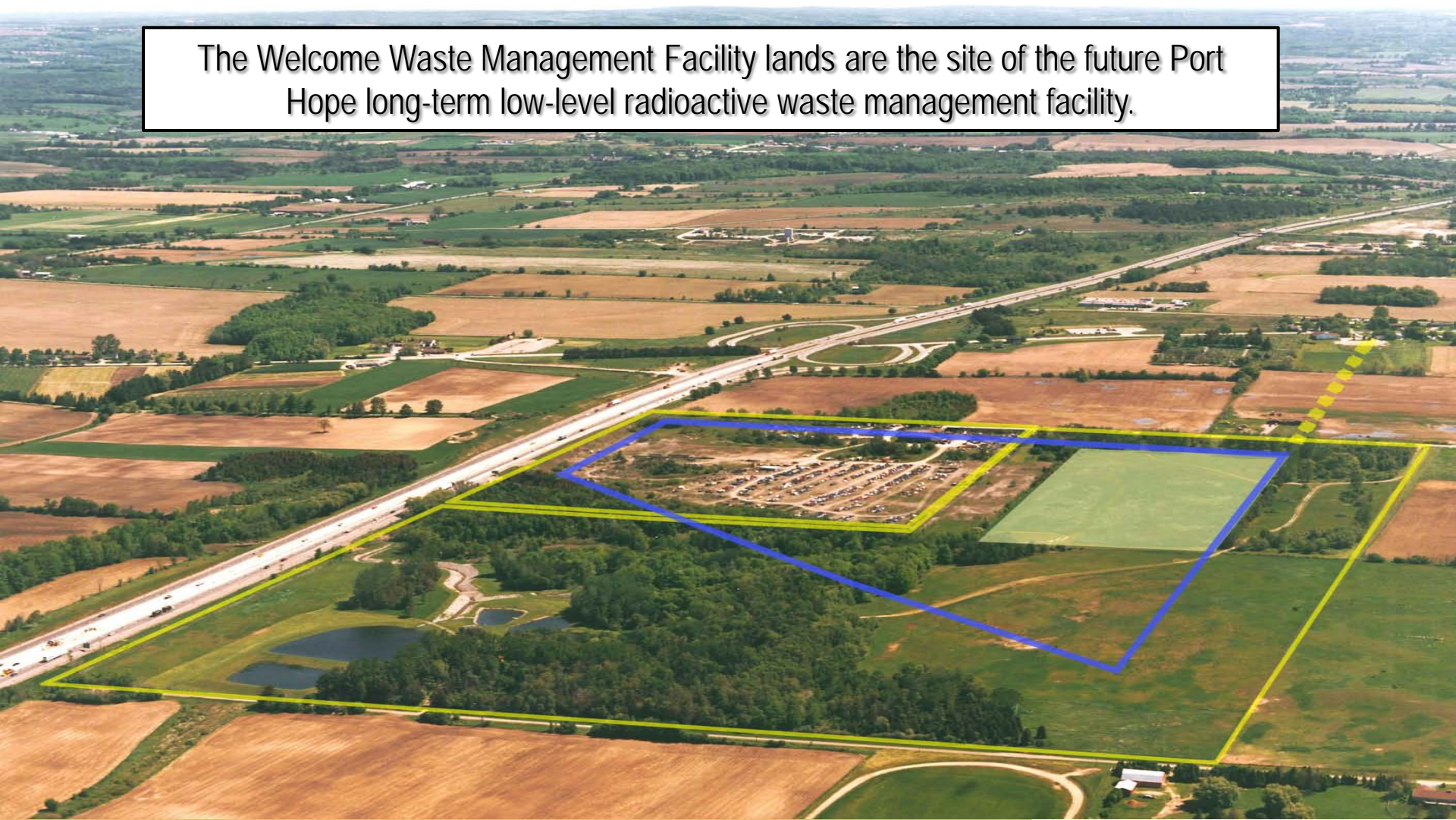
GROUP 2D - Highland Dr. Landfill Area

- Highland Drive Landfill
- Pine Street North Extension Roadbed
- Pine Street North Extension Consolidation Site



GROUP 3 – LTWMF and WWMF Remediation

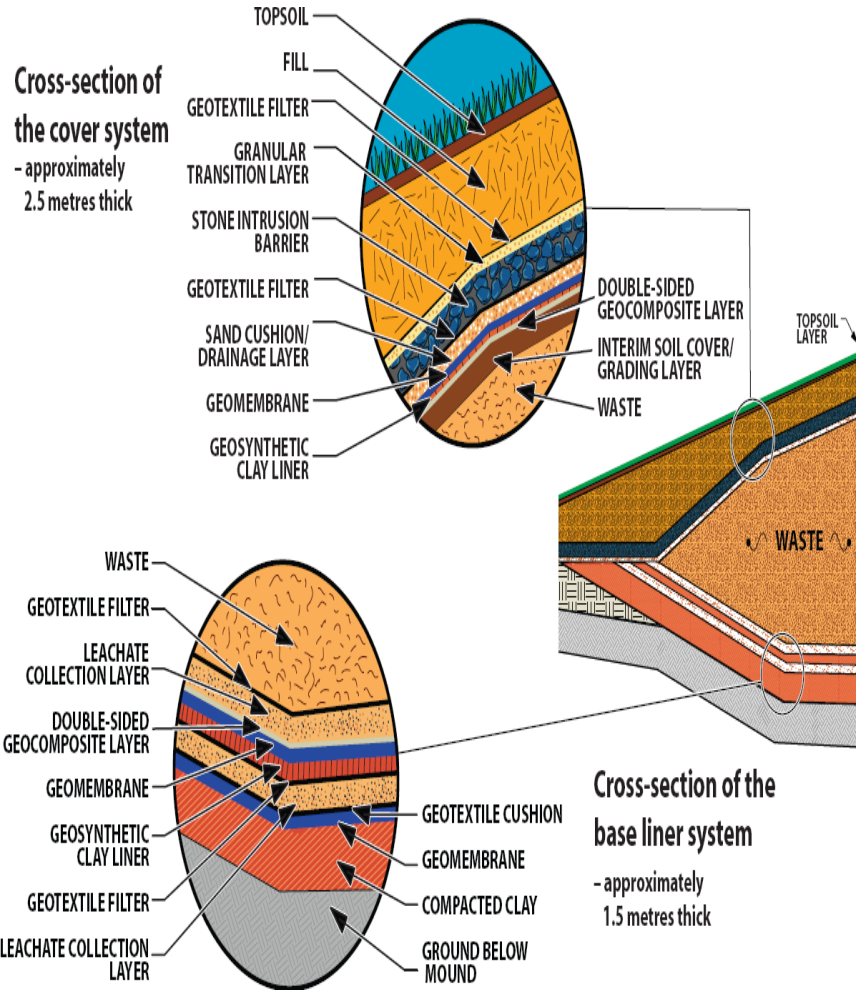
The Welcome Waste Management Facility lands are the site of the future Port Hope long-term low-level radioactive waste management facility.



Long Term Waste Management Facility

In total, some 1.2 million m³ of historic low-level radioactive waste (LLRW), largely in the form of contaminated soils requires cleanup and transport to the new LTWMF.


On-site Support Buildings




Transportation of Waste to LTWMF

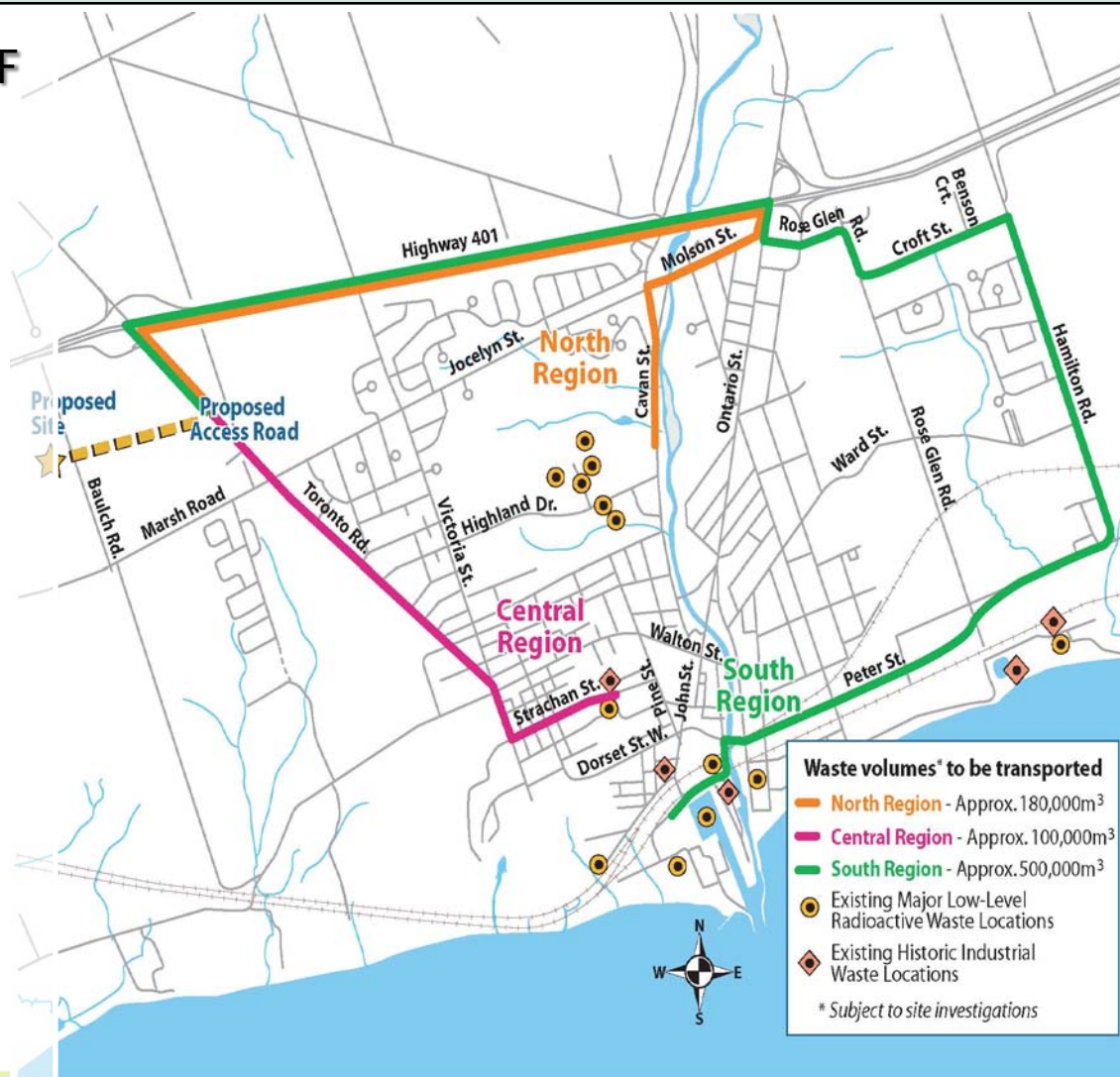
Waste will be transported to the LTWMF in accordance with the PHAI Radioactive Material Transportation Plan (RAMT)

Use of three designated routes:

 **Route A:** Cavan, Molson, Ontario, Highway 401, Toronto, Access Road

 **Route B:** Peter, Hamilton, Croft, Rose Glen, Ontario, Highway 401, Toronto, Access Road

 **Route C:** Toronto, Access Road



Main Elements of The Project

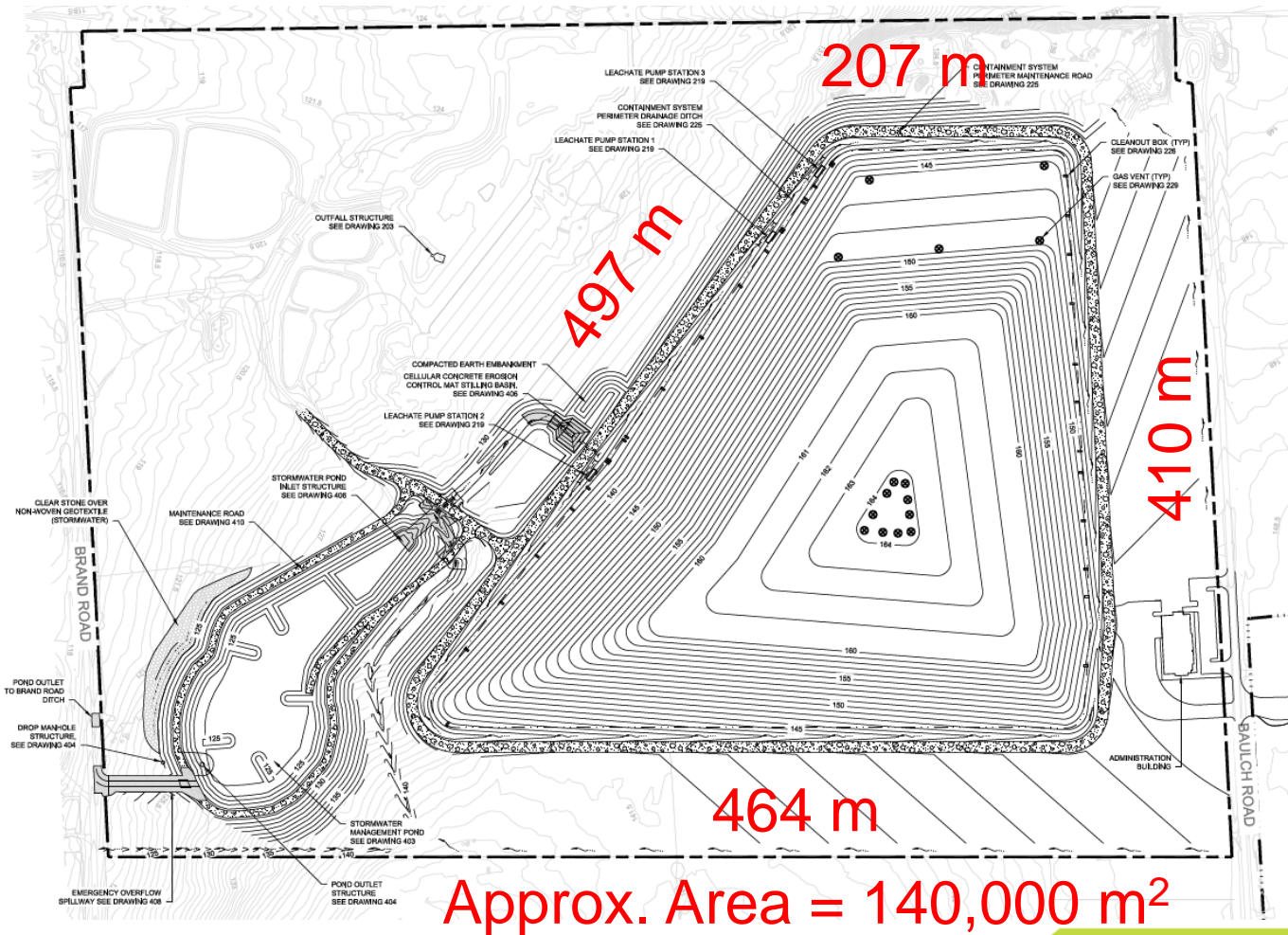
- 1. Complete the containment mound construction including cell 2A, cell 2B and cell 3**
- 2. Excavation and relocation of the waste within the LTWMF site boundary and the waste from major sites in Port Hope outside of the LTWMF site boundary,**
- 3. Receive LLRW waste at LTWMF from outside contractors**
- 4. Mound closure, and**
- 5. Site re-instatement.**



Engineered Containment Mound

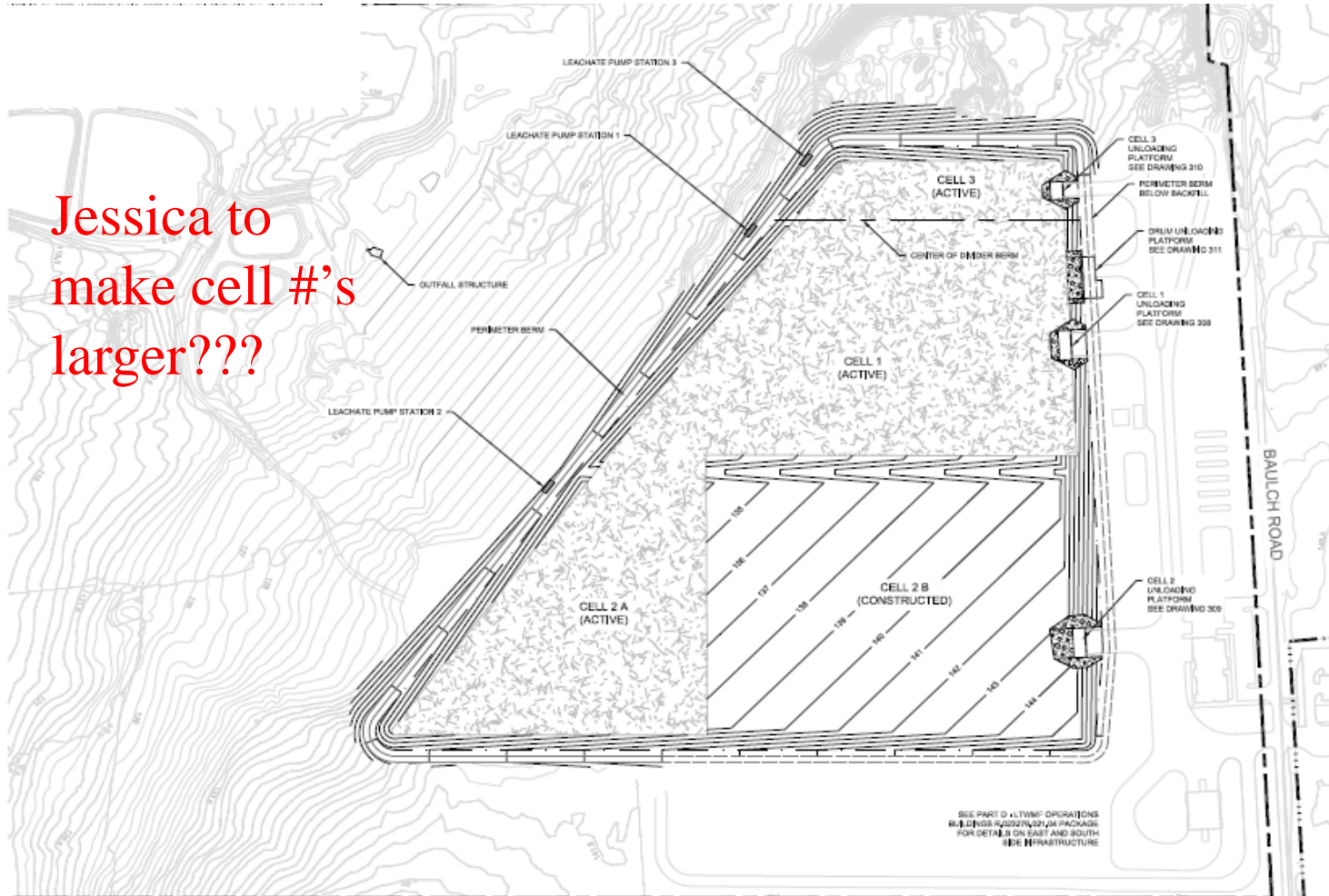
- **Primary and secondary Leachate collection systems including 3 pump stations**
- **Geosynthetic membrane and natural clay liners**
- **Approximate total area for the mound is 140,000 m²**

Port Hope LTWMF



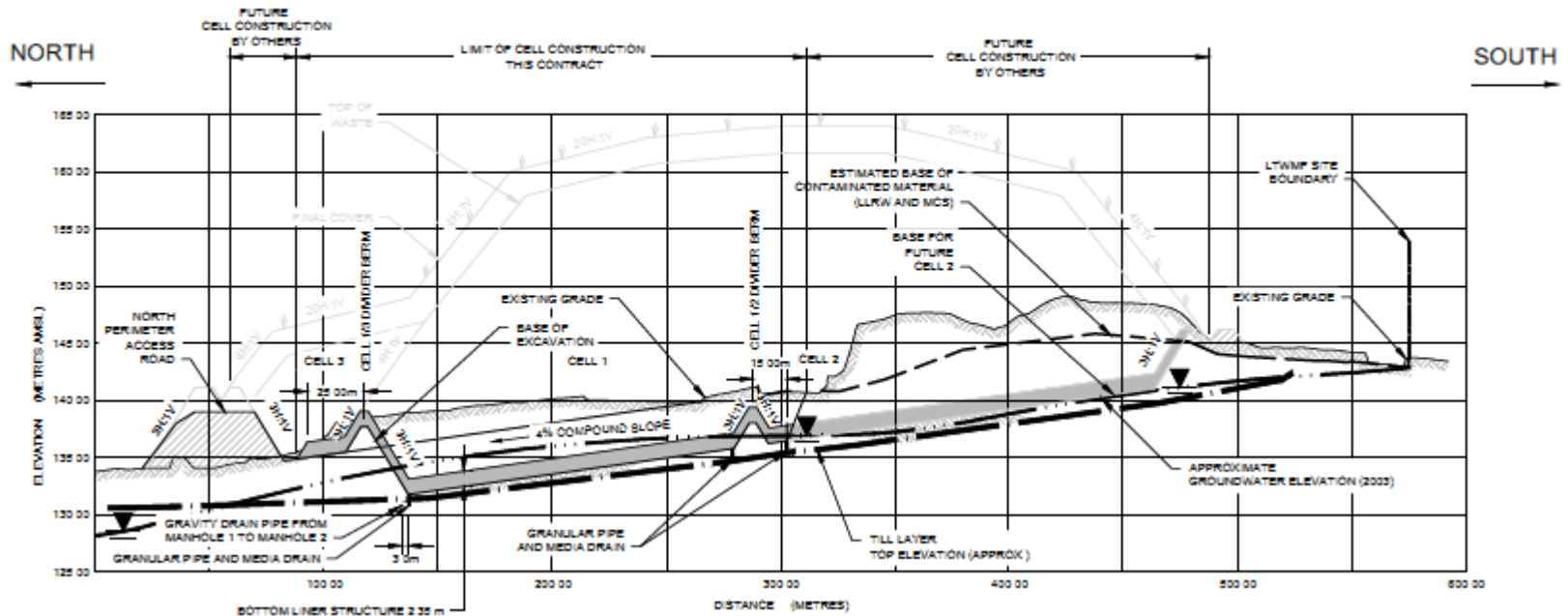
Stage Development

Jessica to
make cell #'s
larger???



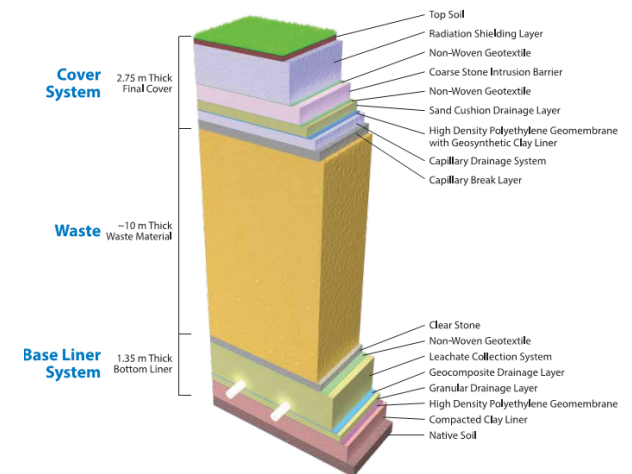
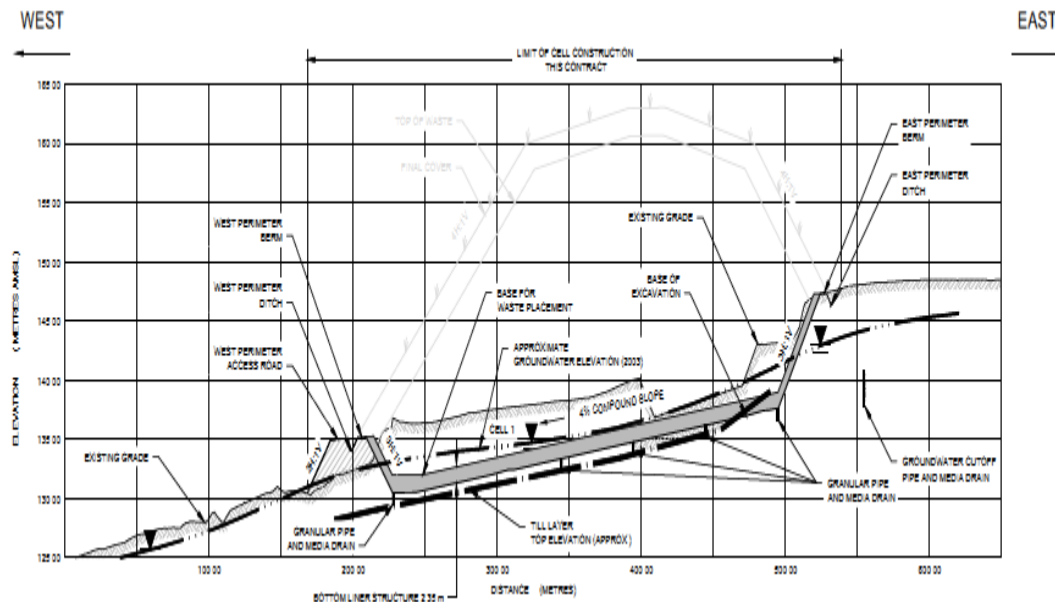
Port Hope LTWMF

Engineered Containment Mound (North – South cross section)



Port Hope LTWWMF

Engineered Containment Mound (West – East cross section)



Port Hope LTWWMF

Waste Source Volumes

- 455,000 m³ from existing WWMF
- 389,700 m³ from Remediation On-Land Sites
- 51,900 m³ from Highland Drive Landfill
- 110,000 m³ from Port Hope Harbour
- 49,400 m³ from Industrial Waste Sites
- 150,000 m³ from Cameco



Port Hope LTWMF

Containment Mound Volume Total

- 1,200,000 m³ of LLRW and MCS
 - Daily cover soil allowance adds 240,000 m³
 - Plus 25% contingency
- Containment Mound designed for a total volume of 1,900,000 m³



Port Hope LTWMF

Limitations and Framework for Alternative Approaches

- **Legal Agreement between Canada and Municipality**
- **Existing Environmental Assessment**
- **CNSC license restrictions**
- **Examples: traffic routes, hours of work, noise restrictions, dust control, oversight, reporting**





Port Hope Project

THANK YOU!

for ATTENDING PHP LTWMF INDUSTRY DAY

