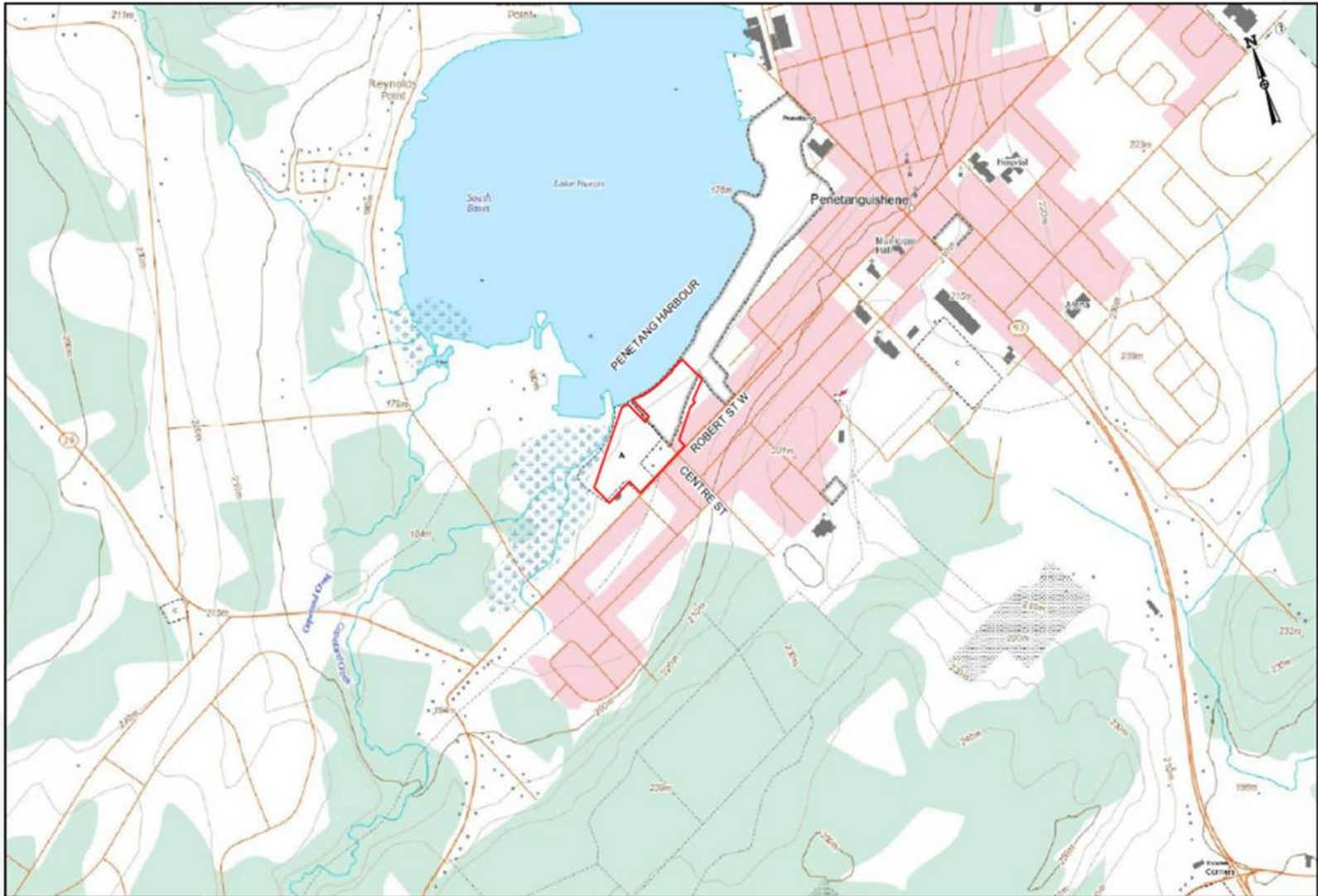




Risk Assessment for Ojibway Landing Property:  
Update Meeting

October 22, 2019

Penetanguishene Town Council



## Project Overview

- Site associated with former landfill and recently a municipal campground.
- Redevelopment requires environmental investigations based on historical impacts.
- Investigations have noted impacts in soil and groundwater (petroleum hydrocarbons, metals and other contaminants).
- Risk Assessment approach is valuable alternative to remediation of entire property.
  - Ontario Ministry of the Environment, Conservation and Parks is regulatory body that oversees the RA process.
  - RA is currently in progress and in consultation with the Town, regulators and other stakeholders.





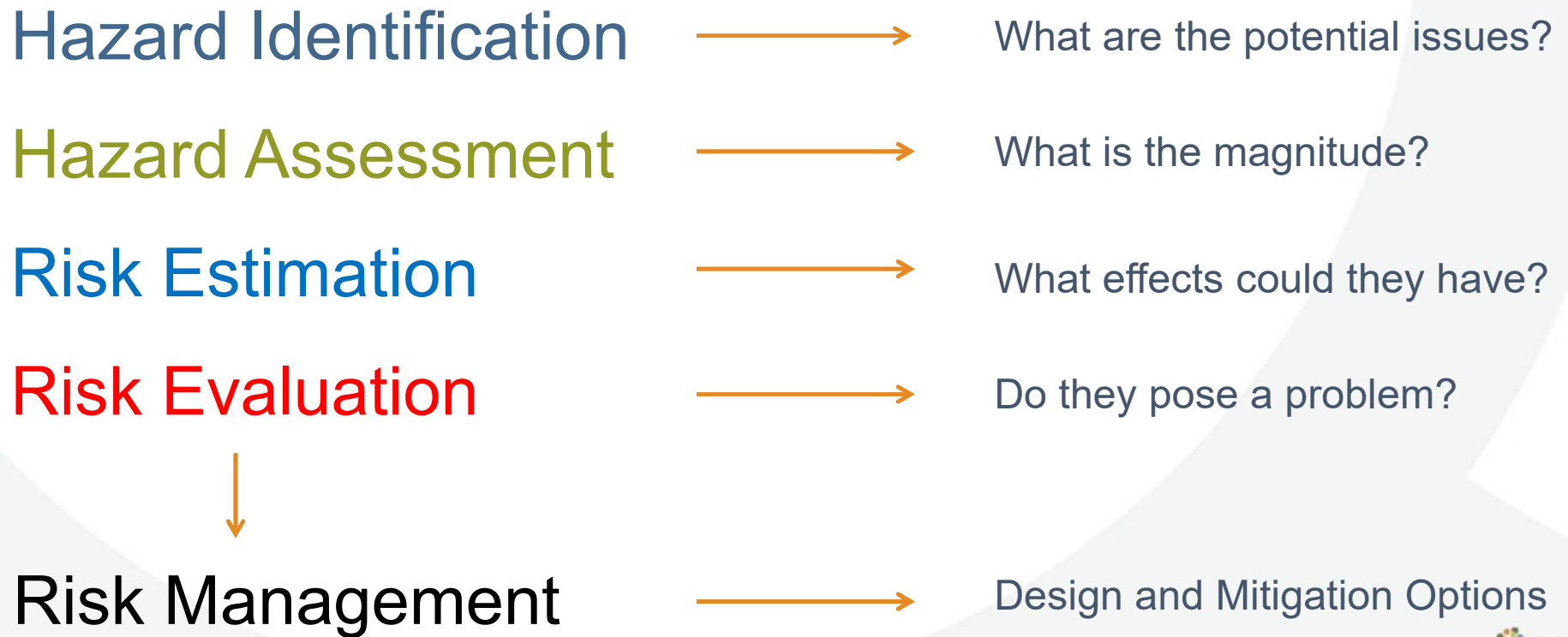
— APPROXIMATE SITE BOUNDARY  
+ + + + + FORMER RAIL LINE / SPUR (FIP 1912 & 1946)



## What is Environmental Risk Assessment?

- examines the risk posed to human health and the natural environment from exposure to a hazard.
- can be used to develop risk-based soil and groundwater standards that protect human health and the environment based on property uses and property specific conditions.
- provides recommendations for risk management that can provide additional protection to human health and the environment, or for less onerous targeted remediation.
- Risk Assessment teams include expertise in human health toxicology, ecology, environmental engineering, hydrogeology and more.

## Risk Assessment Simplified









## Potential Risks Identified

- A. Direct contact with soil and groundwater for human and ecological receptors (vegetation, birds, mammals, etc.).
- B. Inhalation of indoor air.
- C. Potential for the migration of on-Site contaminants in groundwater into the adjacent Penetanguishene Harbour and Copeland Creek area (Provincially Significant Wetland).

STORMWATER FEATURE





## Risk Management Options

- A. A robust set of options for **soil cover** are proposed. These include:
- Unimpacted topsoil or engineered material, with varied required depths depending on types of vegetation (grasses, shrubs or trees).
  - Management of existing treed areas with unimpacted topsoil under canopy.
  - New hard pathways or parking areas.
  - Some landscaping restrictions are required.
- B. Any newly constructed building must have a **vapour mitigation system** that ensures impacted vapours from the subsurface do not enter the building.
- C. Monitoring of ecological habitat and receptors to assess continued health of the wetland and harbour.

EXISTING NATURAL  
VEGETATION



UNDISTURBED SOIL

## Redevelopment Options

- **Parkland** - A portion of the property to remain as public parkland space with trails, dog park and naturalized areas.
- **Residential** Buildings – multi-unit developments (with mixed commercial option)
- **Community** Use Buildings –recreational complex, library, college, etc.
- **Institutional** –art gallery, concert hall, etc.
- **First Nations and Métis** groups will also be consulted on use and function.

*Community Recommendations?*







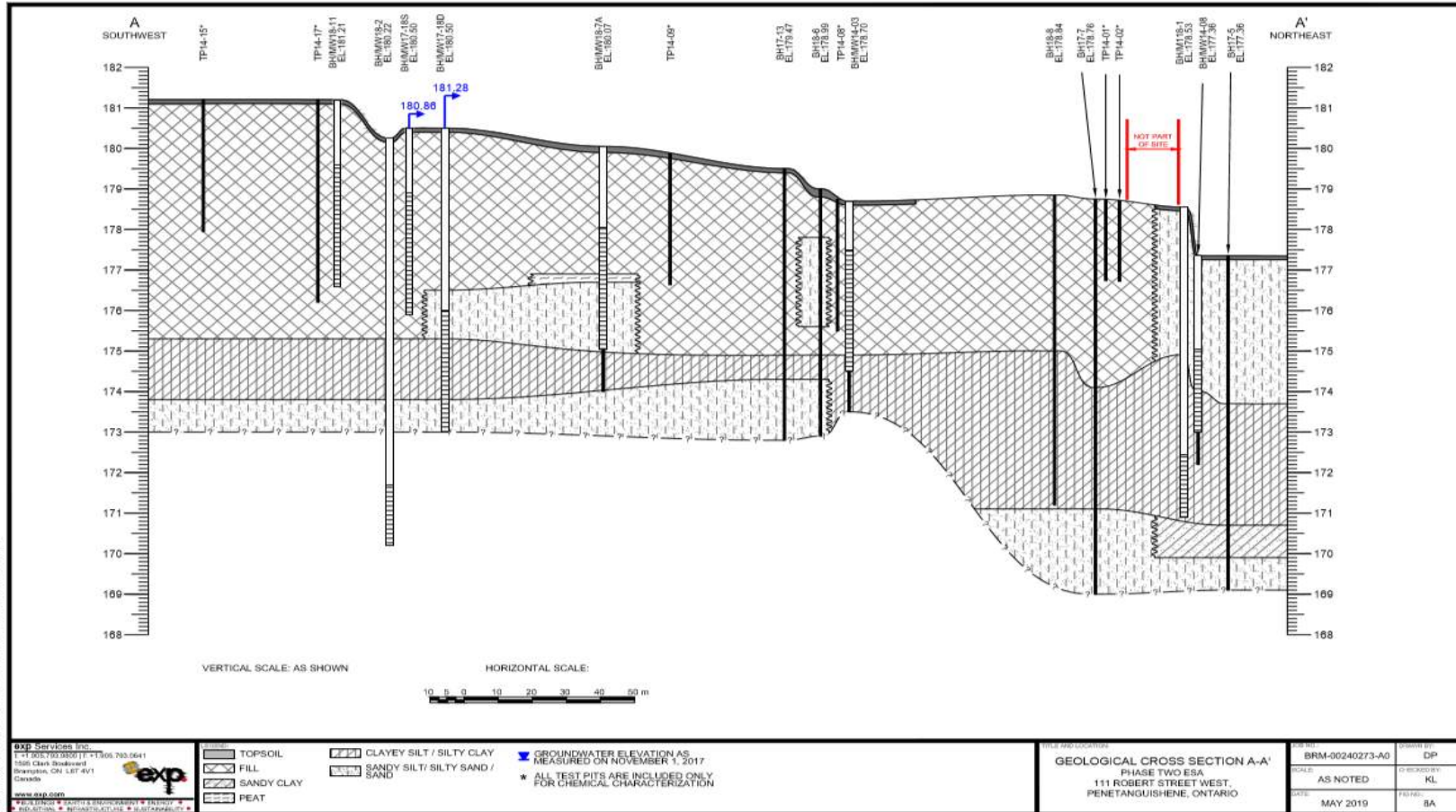
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Additional Slides



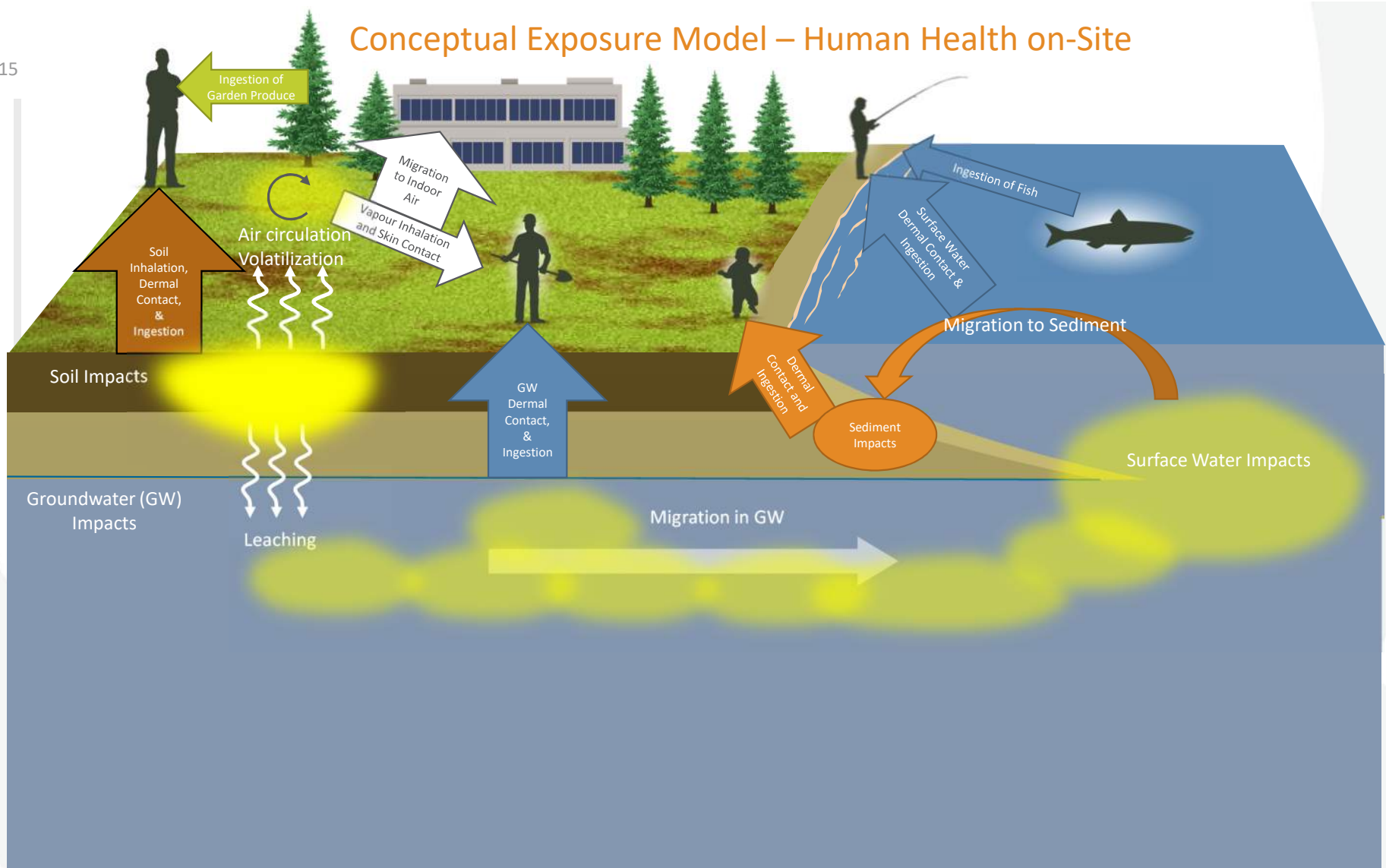


# Cross Section – On-Site Geology

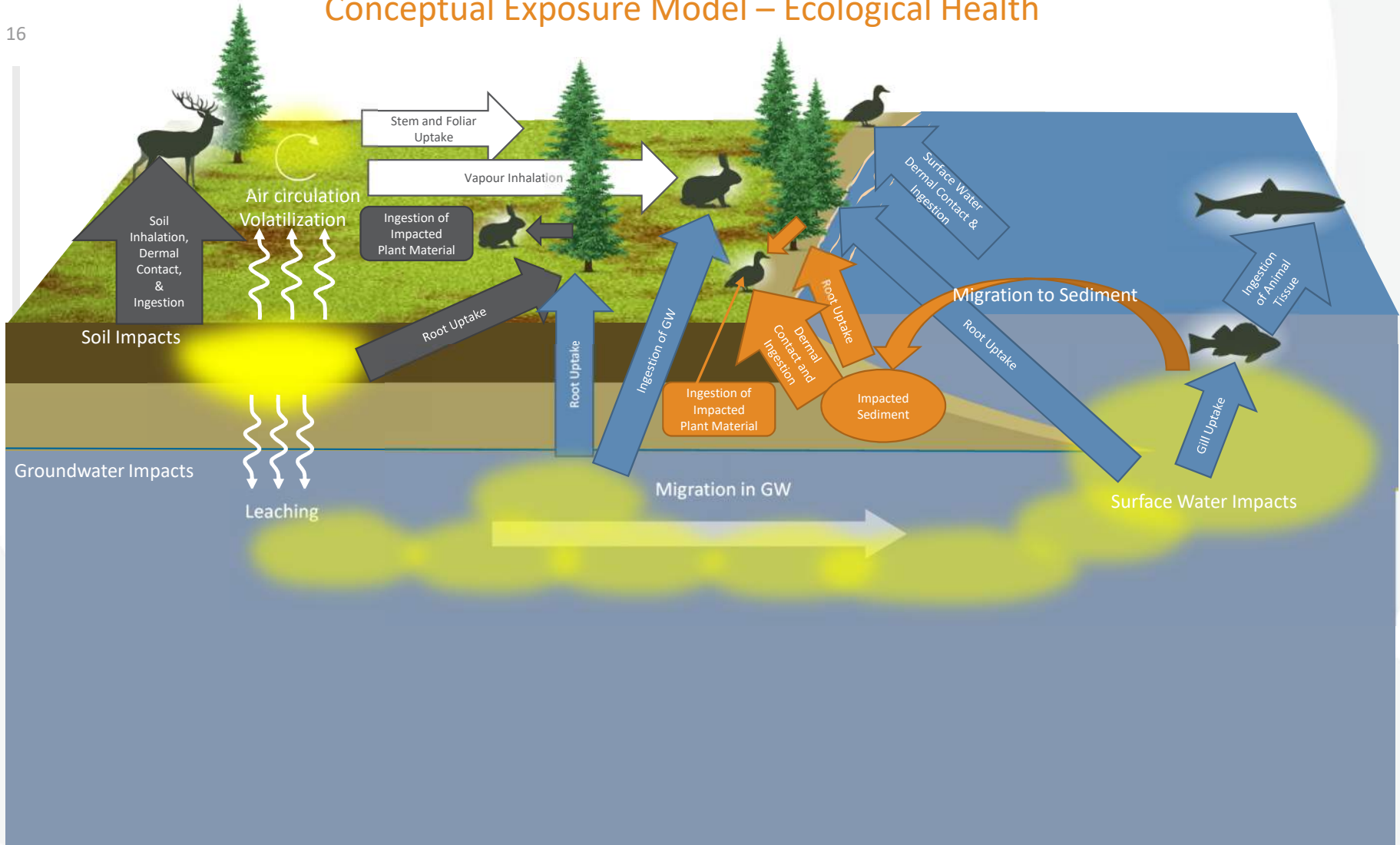




# Conceptual Exposure Model – Human Health on-Site



# Conceptual Exposure Model – Ecological Health





# Landscaping Restriction Area: Deep-Rooting Vegetation

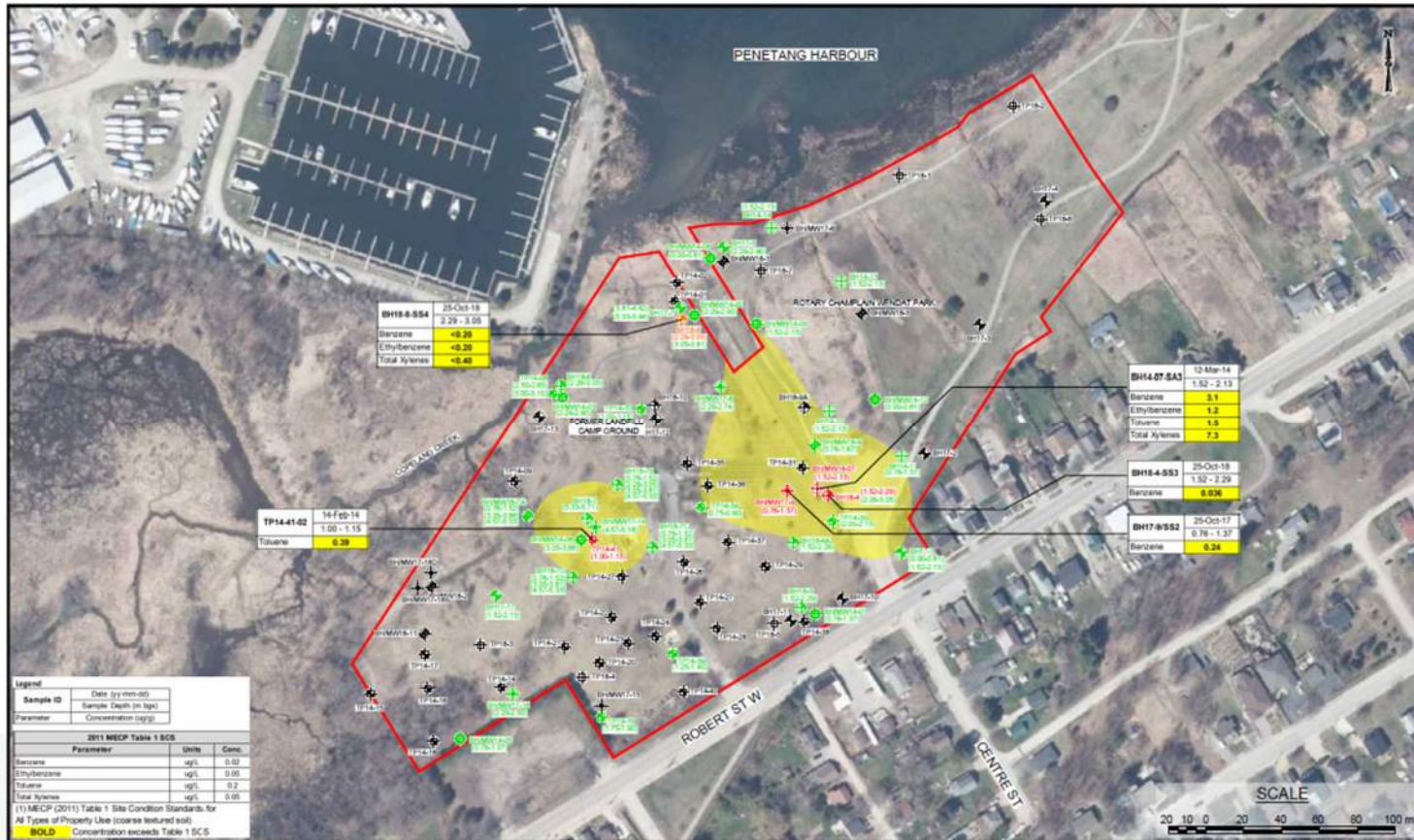


# VOC Impacts: Soil

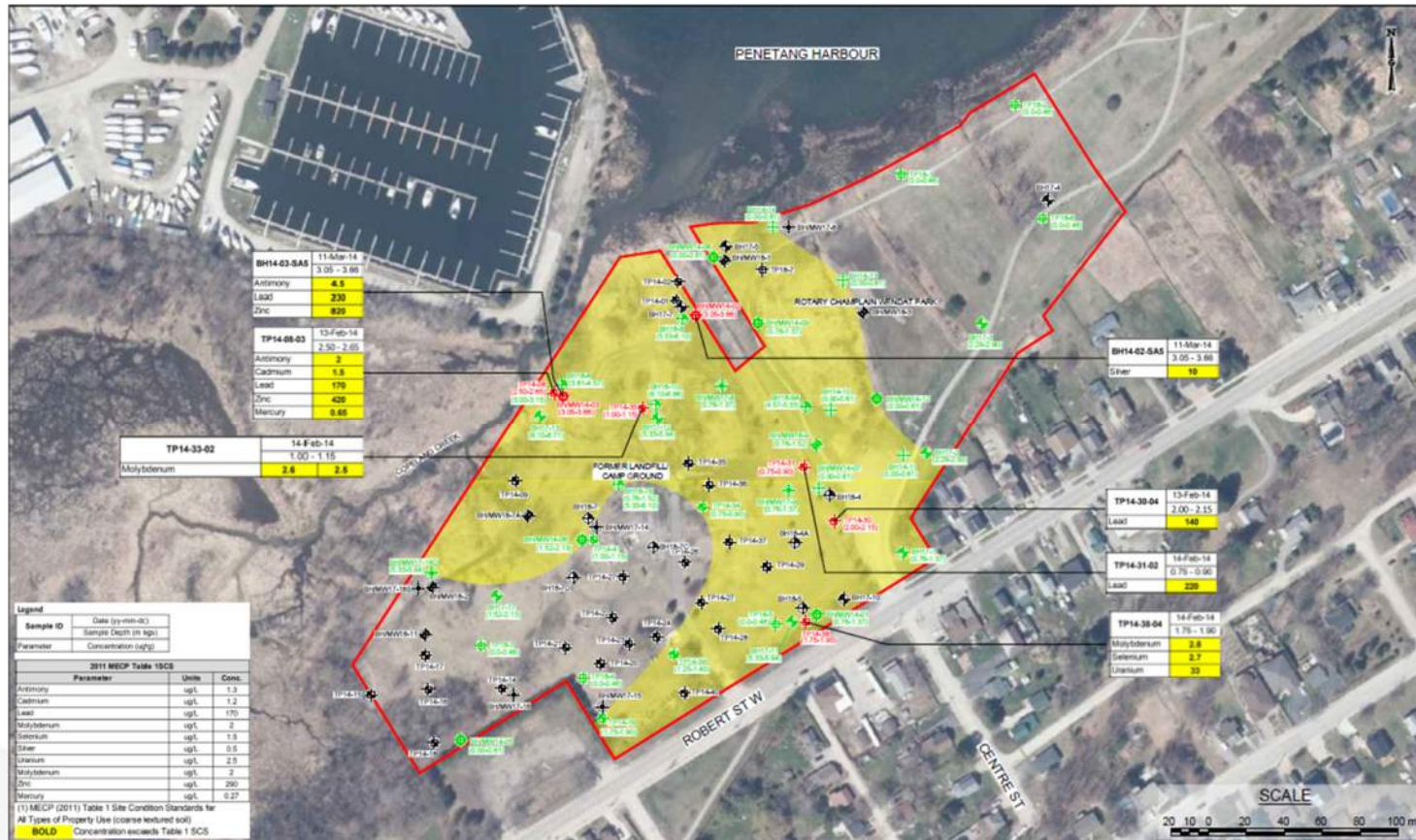




# BTEX Impacts: Soil



# Metals Impacts: Soil





# PAH Impacts: Soil



# VOC Impacts: Groundwater





# PHC Impacts: Groundwater



# BTEX Impacts: Groundwater





# Metals Impacts: Groundwater

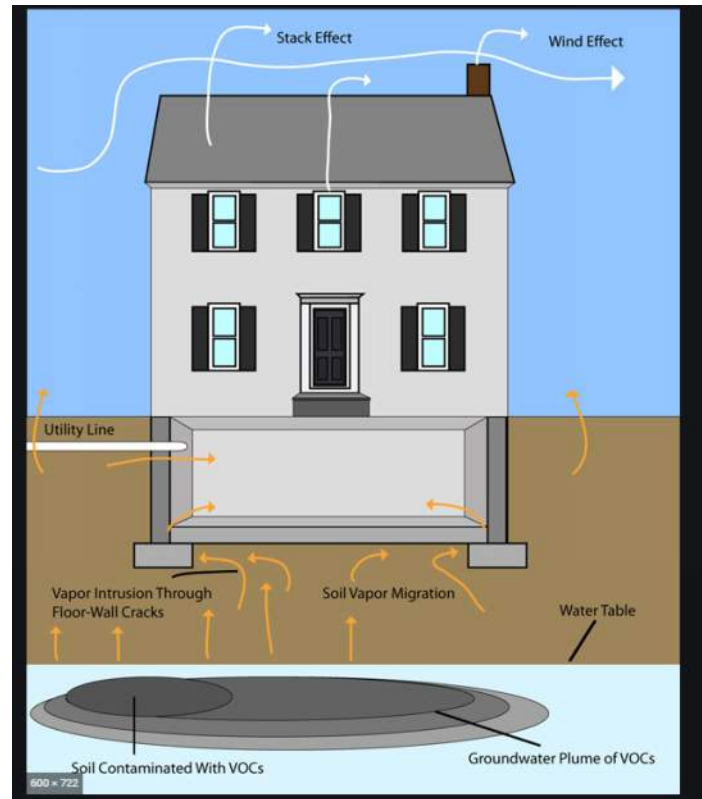




# PAH Impacts: Groundwater



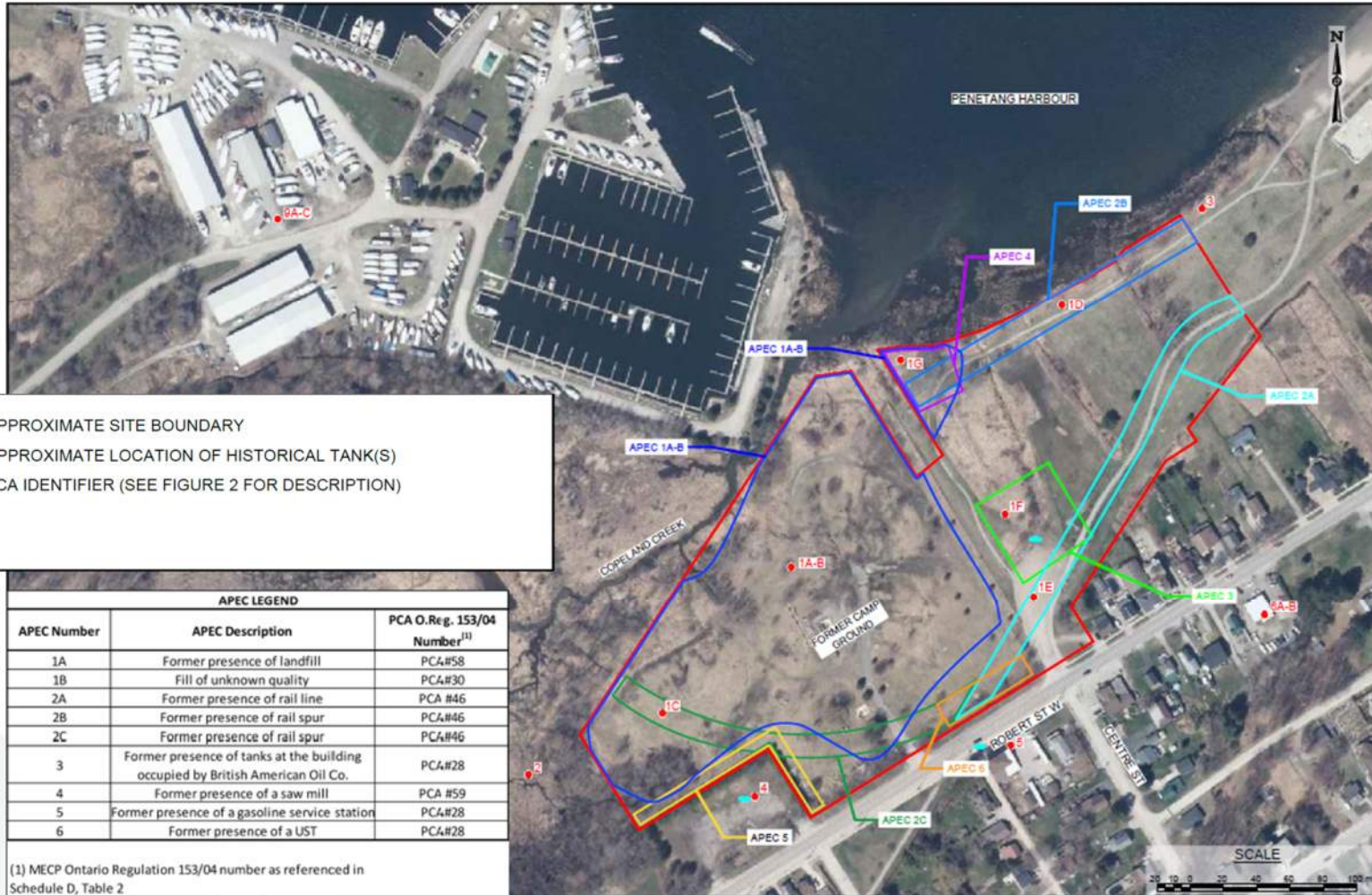
# Vapour Intrusion



Source: Erickson foundation supportworks



SITE PLAN AND AREAS OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)



LEGEND:  
 — APPROXIMATE SITE BOUNDARY  
 ○ APPROXIMATE LOCATION OF HISTORICAL TANK(S)  
 ● PCA IDENTIFIER (SEE FIGURE 2 FOR DESCRIPTION)

APEC LEGEND		
APEC Number	APEC Description	PCA O.Reg. 153/04 Number <sup>(1)</sup>
1A	Former presence of landfill	PCA#58
1B	Fill of unknown quality	PCA#30
2A	Former presence of rail line	PCA #46
2B	Former presence of rail spur	PCA#46
2C	Former presence of rail spur	PCA#46
3	Former presence of tanks at the building occupied by British American Oil Co.	PCA#28
4	Former presence of a saw mill	PCA #59
5	Former presence of a gasoline service station	PCA#28
6	Former presence of a UST	PCA#28

(1) MECP Ontario Regulation 153/04 number as referenced in Schedule D, Table 2