



Development of Long Term Monitoring and Maintenance Programs for Sister Sites: Tar Ponds/Coke Ovens and Sydney Steel Plant

Allan Gillis, SLR Consulting (Canada) Ltd., Sydney, NS

Kelly Henderson, SLR Consulting (Canada) Ltd., Sydney, NS

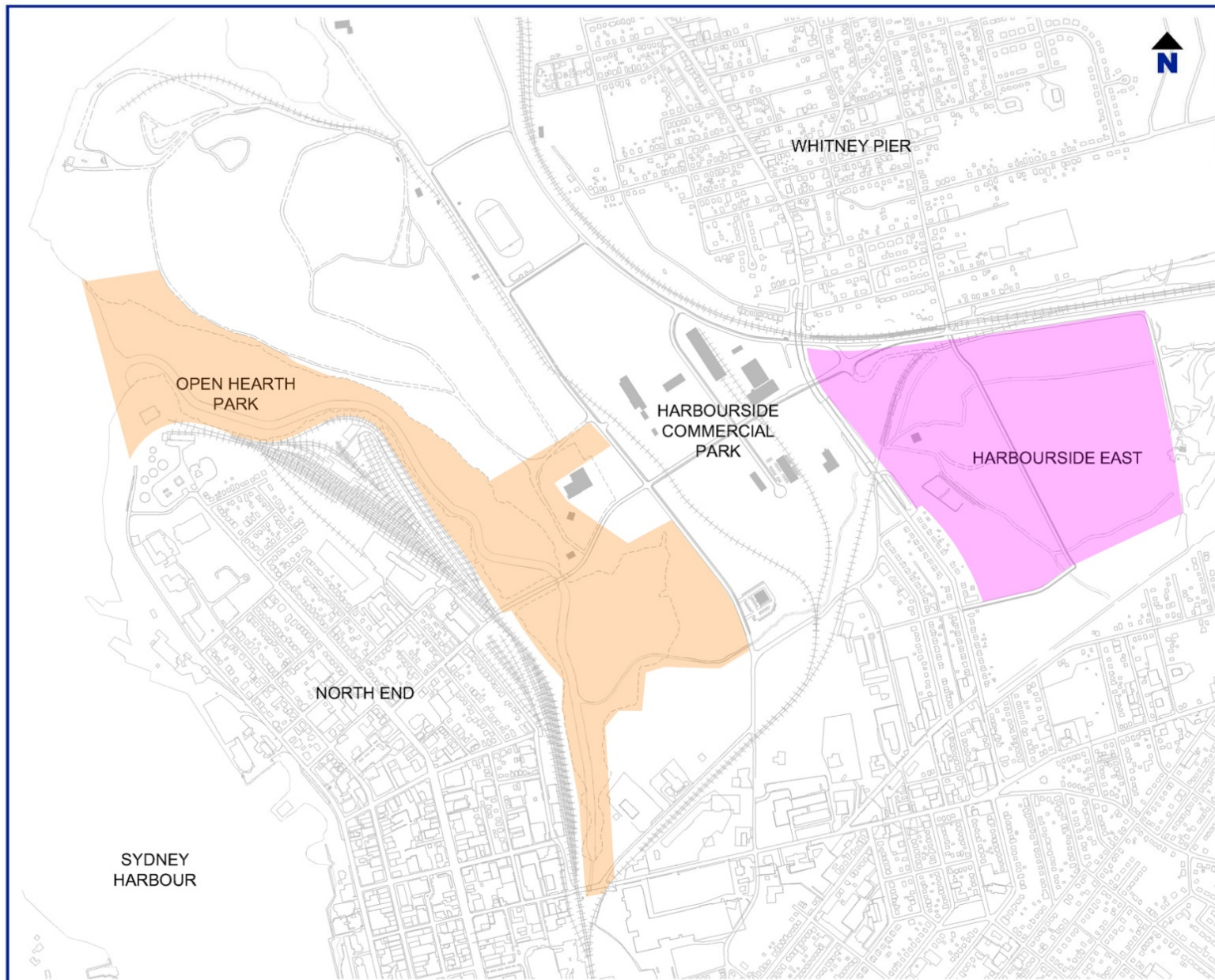
George MacNeil, Nova Scotia Lands Inc., Sydney, NS

Craig Chandler, SLR Consulting (Canada) Ltd., Dartmouth, NS

Atlantic Remediation Conference 2014
Wolfville, Nova Scotia
October 29, 2014

Outline of Presentation

- Brief background Tar Ponds/Coke Ovens sites
- Regulatory Context
- Remediation/Management Plans
- LTMM Plan Approval
- Brief background Harbourside Comm. Park
- Regulatory Context
- Remediation/Management Plans
- LTMM Plan Approval
- Conclusions

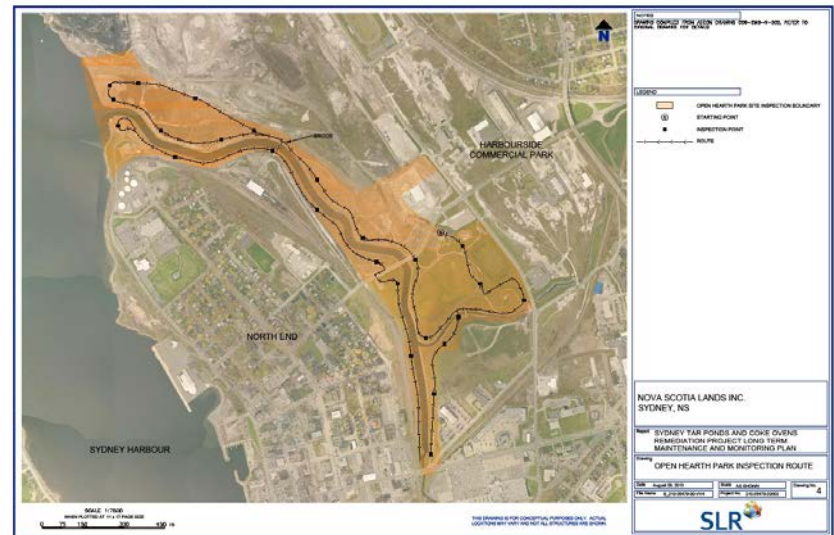


SCALE 1:10,000
WHEN PLOTTED AT 11 x 17 PAGE SIZE
0 100 200 400 600 m

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL
LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

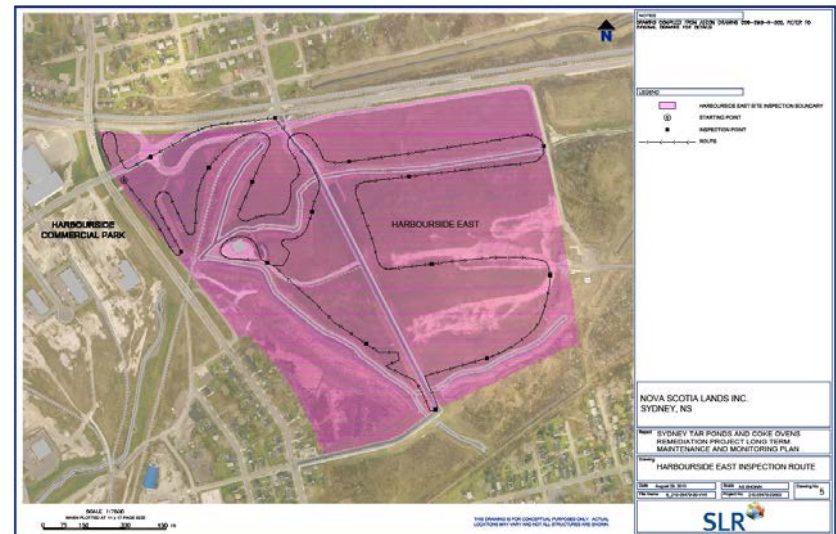
Tar Ponds Map and Issues

- North and South Ponds 34 hectares
- Over 700,000 tonnes of PAH and Metals Contaminated Sediments
- 5% of Sediments Contained PCBs



Coke Ovens Map and Issues

- Coke Ovens Site 68 hectares
- 560,000 tonnes of Petroleum Hydrocarbons, PAHs and Metals Impacted Soils
- Add. 1,300 tonnes of PAH Contaminated Sediment in COB and COBC
- Add. 25,000 tonnes Contaminated Soil at Tar Cell



Tar Ponds and Coke Ovens Remediation Plan

- Tar Ponds:
 - Construction of Materials Handling Facility
 - Solidification/Stabilization
 - Channel Construction
 - Surface Cap
- Coke Ovens:
 - Coke Ovens Brook Reconstruction
 - Tar Cell Solidification/Stabilization
 - Cutoff Wall Construction
 - Surface Cap
 - Groundwater Collection System and Water Treatment Plant

Regulatory Context

- Canadian Environmental Assessment Act
- NS Environment Approvals of Components
- Environmental Management Plan
- Env. Protection Plans (General and Component Specific)
- NSE Approval of LTMM Plan

EPP & EEM

- EPP:
 - EEM for construction activities
 - LTMM to provide ongoing data for long term management and maintenance, and compliance commitments to regulatory agencies and other stakeholders
 - Defined groundwater and surface water monitoring programs for EEM and LTMM
 - Monitoring Targets
 - Sampling Locations
 - Sampling Parameters
 - Sampling Frequency and Duration
- EEM:
 - Current and previous analytical sampling results and trending analysis
 - Provided information regarding some changes to original EEM

2013 LTMM Process

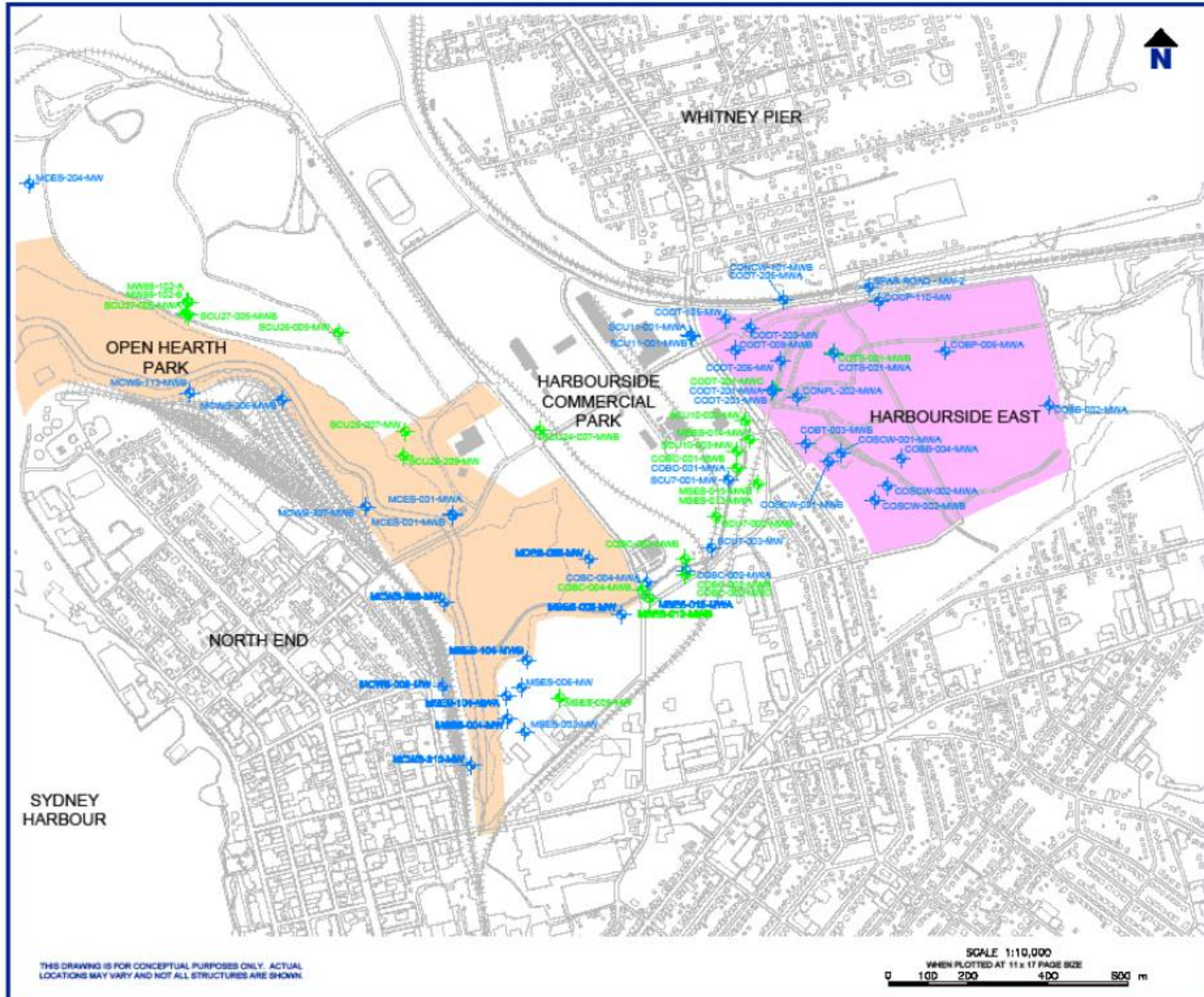
Monitor well selection for the LTMM program was based on:

- Requirements of the project EPPs
- EEM and groundwater monitoring reports
- Changes to the design during construction
- Monitor well location drawings

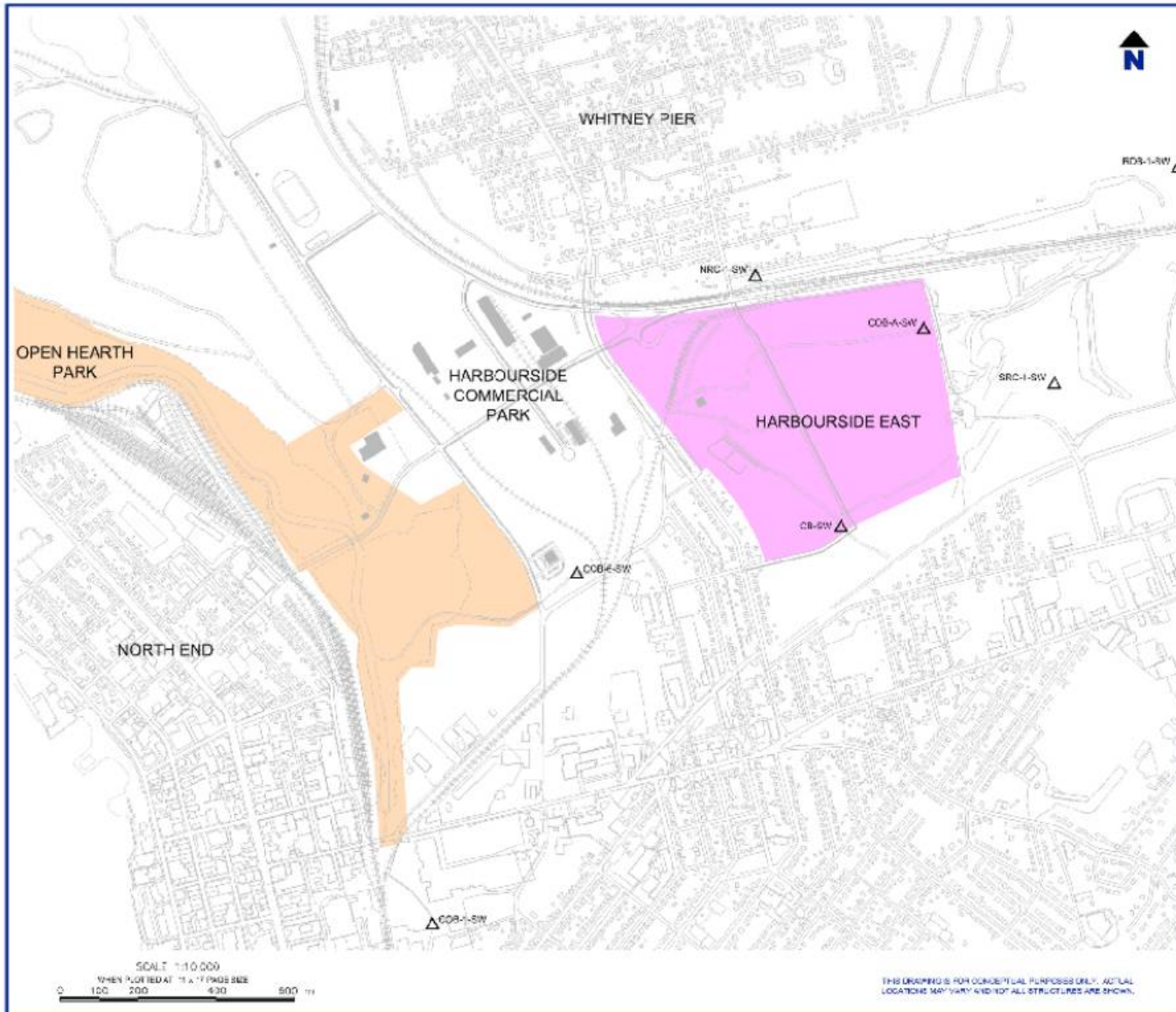
Summary of LTMM

- General Information About LTMM
- Roles and Responsibilities
- Provisions of LTMM
 - Cap Monitoring
 - Surface Water Monitoring
 - Groundwater Monitoring
- Alterations to Original LTMM
- Quality Assurance & Quality Control

MW Location Map



SW Location Map



Harbourside Commercial Park

- Approx. 170 hectares (420 acres)
- 70 hectares of estuary infilled
- Varied surrounding land use
 - Residential (Whitney Pier, North End)
 - Commercial (Terminal Road, Prince St.)
 - Brownfield (Coke Ovens/Tar Ponds)

Demolition

50 buildings and structures demolished.

15 buildings retained, including:

- ✕ Engineering
- ✕ Administration
- ✕ General Warehouse
- ✕ Rail Head Hardening
- ✕ 8 Bay RFM Extension
- ✕ Oxygen Plant
- ✕ Truck and train scale house
- ✕ Fuel cell building
- ✕ North water treatment plant
- ✕ Rail Mill Office
- ✕ North, South and EAF Substations
- ✕ Rail Mill Maintenance Building
- ✕ Portside Aggregates facilities
- ✕ South Water Treatment Plant
- ✕ Port Facility



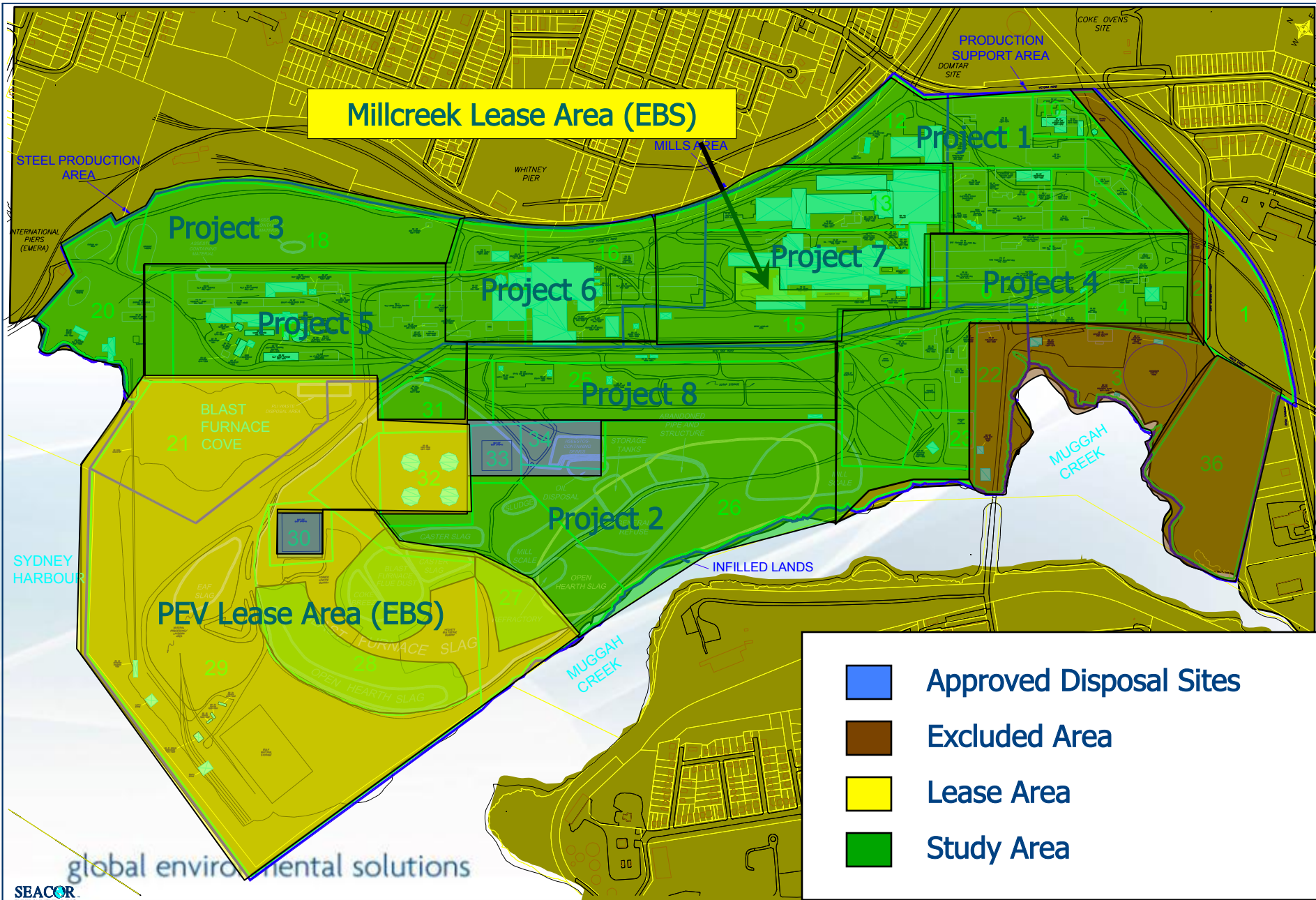




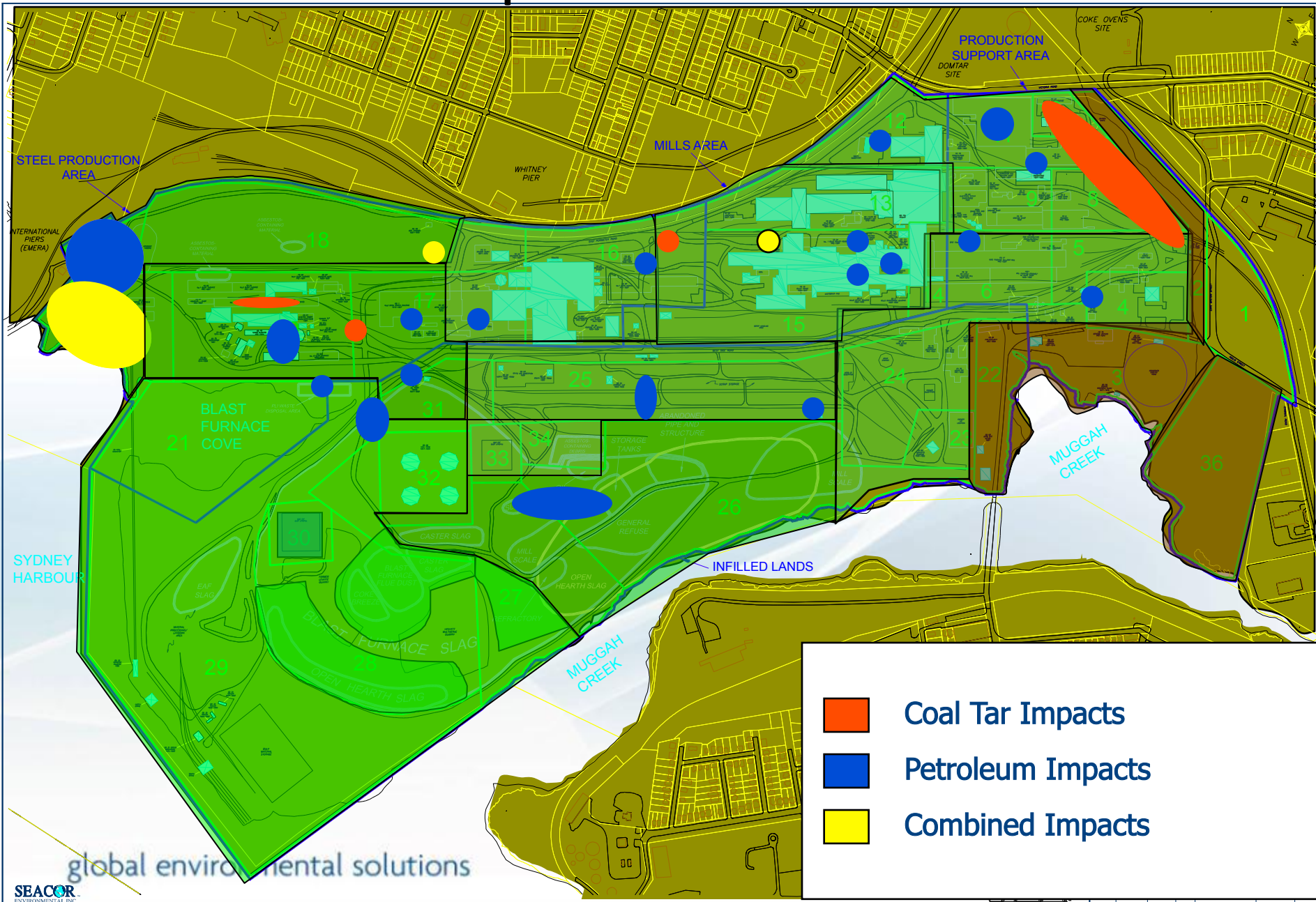
Regulatory Context

- No triggers for a federal or provincial environmental assessment
- Nova Scotia Environment Approval required under the Activities Designation Regulations (reclamation of an iron and steel mill)
- Voluntary adherence to NS Contaminated Sites Guidelines

Phased Environmental Site Assessment



Impacted Areas



Remedial Approach

- Risk Management through development of SSTLs
- Excavation and ex situ solidification / stabilization of petroleum- and PAH-impacted soils
- Bioremediation of select materials

Risk Management

- Statistical evaluation of data
- Development of Site-Specific cleanup criteria
- Remediation of isolated petroleum impacts
- Long-term management:
 - ✗ Land use restrictions
 - ✗ Site operations protocols
- Development of Environmental Management Plan as part of NSE Approval
- Ongoing groundwater monitoring and updating of EMP

Environmental Management Plan

- Surface Soil
- Subsurface Soil
- Groundwater
- Surface Water
- Air Quality
- Erosion and Sediment Control
- Imported Fill Quality Control
- Remedial Activities

Current Situation

- Habourside Commercial Park has assumed ownership of former Tar Ponds and Coke Ovens sites
- Tar Ponds → Open Hearth Park
- Coke Ovens → Harbourside East
- Nova Scotia Lands Inc. responsible for LTMM for all three sites
- Approved monitoring plans in place

Conclusions

- 3 sites with a shared history and notoriety now under control of one organization
- Two separate LTMM plans but data will be compiled by one organization
- Cohesive and comprehensive monitoring and response plans



Photo: Chronicle Herald