

1.0 Executive Summary

Pinchin Environmental Ltd. (“Pinchin”) was retained by Infrastructure Ontario (“Client”) to conduct a Phase Two Environmental Site Assessment (“ESA”) of the property located at 850 and 900 Highbury Avenue, London, Ontario (hereafter referred to as the “Site”). The Site is currently known as the St. Joseph’s Regional Mental Health Centre (“RMHC”) London and previously known as the London Psychiatric Hospital (“LPH”). At the time of Pinchin’s Site visit, the Site was developed with several buildings used for the care of patients. Site Buildings include, but are not limited to: patient wards, offices, a chapel, a recreation hall, a tractor shed, a powerhouse and other buildings collectively referred to within this report as “Site Buildings”. Several Site Buildings, including Pump House, Granary, Storage Barn, Potting Shed and Examination Building are no longer in use and were boarded up. A Key Map is provided in Figure 1 (all Figures are provided within Appendix I). A Site Plan is provided as Figure 2.

Pinchin was advised by the Client that the purpose of the Phase Two ESA was to assess any current potential issues of environmental concern in relation to due diligence requirements for the proposed disposition of the Site.

This Phase II ESA was completed in accordance with the Canadian Standards Association (“CSA”) document entitled “*Phase II Environmental Site Assessment, CSA Standard Z769-00 (reaffirmed 2004)*” (“CSA Standard”) and Ontario Regulation 511/09.

Based on the results of the Phase I ESA completed by Pinchin, the completion of subsurface soil and groundwater sampling (Phase II ESA) was recommended. The Phase II ESA was required at the Site to address the following Areas of Potential Environmental Concerns (“APECs”):

APECs resulting from Phase I ESA				
APEC Number	Potentially Contaminating Activity	Description of Location	Contaminants of Potential Concern	Media Potentially Impacted
APEC-1 Soccer Field	Historical pesticide and herbicide use.	Northeast corner of the Site.	Arsenic, Beryllium, Copper, Lead and Pesticides.	Soil and groundwater.
APEC-2 Site Building B12034 / Powerhouse UST Areas	Two (2) fuel oil Underground Storage Tanks (“USTs”) east of Site Building B12034 and an emergency generator diesel fuel UST located on the south side of Site Building B12034.	South and east of Site Building B12034/ Powerhouse.	PHCs, BTEX.	Soil and groundwater.

APECs resulting from Phase I ESA				
APEC Number	Potentially Contaminating Activity	Description of Location	Contaminants of Potential Concern	Media Potentially Impacted
APEC-3 Open Area Fill and buried debris	Fill has been reported to contain debris and cinders impaired with metals. PHC odours noticed in fill.	West of Site Building B12029/ Recreation Hall.	PHCs, BTEX and Metals.	Soil and groundwater.
APEC-4 Open Area Fill and buried debris	Fill has been reported to contain debris/cinders impaired with metals. PHC odours noticed in fill.	South of Site Building B12019/ Chapel.	PHCs, BTEX.	Groundwater.
APEC-5 Former Fuel UST Area	Former fuel handling activities. Investigations by others show PHC impact to both soil and groundwater.	East of Site Building B20794/ W-Wing.	PHCs, BTEX.	Soil and groundwater.
APEC-6 Site Building B16182/ Tractor Shed Area	Equipment fuelling and maintenance activities. Also road de-icing activities, fuel AST, metals and EC impacted soil area.	Site Building B16182/ Tractor Shed Area.	EC, Lead.	Soil and groundwater.
APEC-7 Former Garage	Equipment maintenance activities.	Off-Site Canadian Forces Base Supply & Maintenance property to the Southwest.	Potential off -Site impact from Canadian Base Supply & Maintenance property (former maintenance yard).	Soil and groundwater.
APEC-8 Former Maintenance Garage	Equipment maintenance activities. This building previously operated as a maintenance garage and has now been renovated into office space. A UST is shown outside of the southwest corner of the building on a 1969 drawing.	Site Building B12150 (900 Highbury Avenue).	Metals, PHCs and VOCs.	Soil and groundwater.

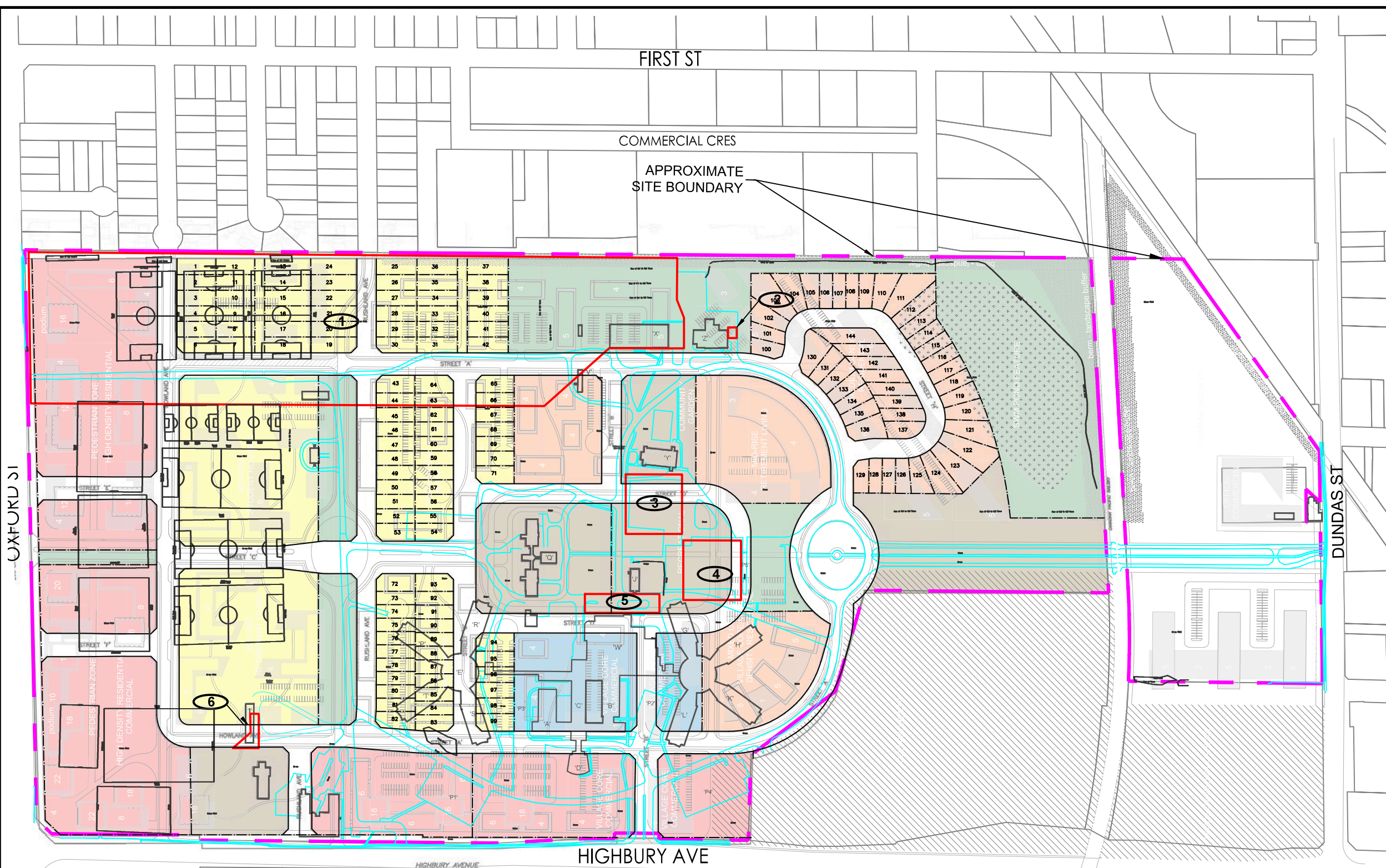
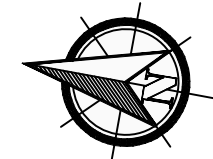
In addition to the APECs listed above, Pinchin recommended completing a geophysical survey at the Site, specifically near the southwest corner of Site Building B12150 / 900 Highbury Avenue as a 1969 drawing depicted an underground “oil tank” in this area. Pinchin also reviewed a previous report summarizing the removal of an underground storage tank (“UST”) in APEC 5; however, documentation of the removal was limited and the former UST location was not adequately reported.

Based on the geophysical survey, sampling and analysis program completed, the following is a summary of the activities and findings of this Phase II ESA:

1. On February 23, 2011, Pinchin retained Multiview Locates Inc. (“Multiview”) to complete a geophysical survey at two (2) locations within the Site. The results of the geophysical survey indicated the probable presence of an UST located adjacent to the southwest corner of Site Building B12150 (also known as 900 Highbury Avenue) and adjacent to the northeast corner of Site Building B20794 / W-Wing;
2. On February 25, 2011, March 1, 2011 and March 4 2011, Pinchin retained Strata Soil Sampling Inc. (“Strata”) to advance eleven (11) boreholes at the Site. The boreholes were advanced to a maximum depth of 9.45 metres below ground surface (“mbgs”). Eight (8) of the eleven (11) of the boreholes were instrumented with monitoring wells to enable groundwater monitoring and sampling;
3. On February 28, 2011, Pinchin retained 291 Construction Ltd. to advance nine (9) test pits at the Site. The test pits were advanced to a maximum depth of approximately 2.44 mbgs using a rubber tire backhoe;
4. The soil stratigraphy at the Site generally consisted of mixed fill material comprised of sand and gravel with some stone throughout the Site to a maximum depth of 3.05 mbgs. Native subsurface material underlying the fill material was observed to generally consist of silt till with some sand in some areas of the Site to a maximum depth of approximately 9.45 mbgs;
5. Groundwater levels in the monitoring wells at the Site ranged from 0.51 metres below top of pipe (“m bTOP”) (BH09-03) and 3.88 m bTOP (BH1-11). The surveyed groundwater elevation data indicated that groundwater at the Site was flowing to the south;
6. Pinchin compared the analytical results to the 2004 and 2009 Ontario Ministry of the Environment (“MOE”) *Table 3 Standards* for:
 - Coarse textured soils; and
 - Residential/parkland/institutional property use.
7. Soil sample analysis indicated that concentrations of petroleum hydrocarbons (“PHCs”) (*F4G-sg - Gravimetric Heavy Hydrocarbons*), benzene, toluene, ethylbenzene and xylenes (collectively referred to as “BTEX”) (*Benzene*), pesticides (*DDE*) and inorganics (metals) (*Arsenic, Copper, Lead*) parameters exceeded the *Current and Future Table 3 Standards*. Soil sample analytical results indicated concentrations of volatile organic compounds (“VOCs”) were below the 2004 and 2009 *Table 3 Standards*.
8. Groundwater analysis indicated that concentrations of PHC (*F2, F3*), VOCs (*Chloroform*) and inorganics (metals) (*Sodium*) parameters exceeded the 2004 and 2009 *Table 3 Standards*. Groundwater analytical results indicated concentrations of BTEX were below the 2004 and 2009 *Table 3 Standards*.

Pinchin notes that a letter which presents proposed options for future assessment, remediation and/or risk assessment (including budget estimates for activities required to carry out the necessary work), along with the recommended course of action is being provided to the Client under a separate cover.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.



OXFORD ST

DUNDAS ST

FIRST ST

COMMERCIAL CRES

APPROXIMATE SITE BOUNDARY

HIGHBURY AVE

LEGEND

- 2 AREA OF POTENTIAL ENVIRONMENTAL CONCERNS (APEC) NUMBER
- APPROXIMATE EXTENT OF APEC
- EXISTING BUILDINGS OUTLINE
- TRANSIT ORIENTED CORRIDOR
- SOUTH RESIDENTIAL
- NORTH RESIDENTIAL
- VILLAGE CORE
- OPEN SPACE
- HERITAGE

NOTE:
FUTURE REDEVELOPMENT
PROVIDED BY STANTEC
BROWNFIELD DEVELOPMENT PLAN
DATED JULY 2, 2019



PROJECT NAME
BROWNFIELD REDEVELOPMENT

CLIENT NAME
OLD OAK PROPERTIES

PROJECT LOCATION
**850 AND 900 Highbury Avenue
LONDON, ontario**

FIGURE NAME
**SITE PLAN AND AREAS OF
POTENTIAL ENVIRONMENTAL
CONCERNS**

APPROXIMATE SCALE
AS SHOWN

PROJECT NO.
245065

DATE
MAY 2021

FIGURE NO.
2

APEC NO.	SITE LOCATION	CONTAMINANT OF CONCERN
1	FORMER ORCHARD AREA	METALS, MERCURY AND OC PESTICIDE
2	POWERHOUSE FUEL TANK AREA	PETROLEUM HYDROCARBON F2, F3 AND F4
3	DEMOLITION DEBRIS-BACKFILLED BUILDING FOUNDATION, WEST OF RECREATION HALL BUILDING	METALS, MERCURY AND SODIUM ABSORPTION RATIO (SAR)
4	DEMOLITION DEBRIS-BACKFILLED BUILDING FOUNDATION, SOUTH OF CHAPEL BUILDING	CONDUCTIVITY, METALS, MERCURY, PAHS AND PHC F3 & F4
5	POTENTIAL UST EAST OF CHAPEL	BTEX, CONDUCTIVITY, PHC F1 & F2 AND SAR
6	TRACTOR SHED AREA	METALS AND MERCURY

SCALE BAR 1:1000

