APPENDIX I

Contamination Overview Study

GANNETT FLEMING

STEVENSON ROAD NORTH ENVIRONMENTAL ASSESSMENT
CONTAMINATION OVERVIEW STUDY

Schedule "C" Municipal Class Environmental Assessment
City of Oshawa
December 2022

Prepared for:
City of Oshawa

Oshawa
Prepare To Be Amazed

GANNETT FLEMING

Authorization

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DOCUMENT REVISION INDEX

Revision	Date	Purpose of Submittal	Comments
Rev A	01-Nov-2022	Draft Report Submission	N/A
Rev 0	22-Dec-2022	Final Report Submission	N/A

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EXECUTIVE SUMMARY

Gannett Fleming Canada ULC (GF) was retained by the City of Oshawa to undertake a Schedule "C" Municipal Class Environmental Assessment Study (M.C.E.A) for upgrades to the Stevenson Road North Corridor from Taunton Road West to Conlin Road West. In addition, GF will review the need for a proposed east-west Northwood Industrial Area mid-block Arterial 'C' road (from Oshawa/Whitby border to Stevenson Road North) or the justification for its removal from the City's Official Plan. GF conducted a Contamination Overview Study (COS) as part of the scope of work. The Study Area limits for the COS include:

- Stevenson Road North Corridor from 100 metres (m) south of Taunton Road West to 80 m north of Conlin Road West; and
- Areas approximately 150 m east and west of the abovementioned Stevenson Road North Corridor.

The Study Area for the COS is shown in **Figure 1**. It should be noted that this COS is intended as a broad-level assessment of actual and potential sources of site contamination within a given area and is based solely on the known, current and former land uses/activities within and surrounding the corridor. This study is not a full environmental liability assessment of each property potentially impacted by the undertaking, and it does not constitute a Phase One Environmental Site Assessment (ESA) as defined by the Canadian Standards Association (CSA Z768-01) and Ontario Regulation 153/04 (O. Reg. 153/04), as amended.

The primary objective of the COS was to identify and review properties and areas with actual or potential sources of contamination that may impact future road improvements and to determine appropriate environmental studies and mitigation measures required to be implemented during the design and construction phases of the project.

For this study, contamination is defined as a material or condition present in the soil, groundwater, surface water, air or buildings/structures that may adversely affect human health or the natural environment (e.g. soil, water, land and buildings).

Based on the findings of this report, APECs with high and moderate potential for contamination have been identified within the Study Area. Four (4) areas of high potential for contamination were identified in the Study Area and seven (7) areas of moderate potential for contamination were identified in the Study Area.

The four (4) areas identified for high potential for contamination are:

- CI1 - 1725 Stevenson Road North
- AC1 - 550 Taunton Road West
- TNP1 - Southern Portion of the Study Area
- MA1 – 1319 and 1320 Airport Boulevard

The seven (7) areas identified for the moderate potential for contamination are:

- CI2 – 1560 Stevenson Road North
- SY1 - 1618 Stevenson Road North
- SY2 – 1520 Stevenson Road North
- SY3 – 1410 Stevenson Road North
- SY4 – 500 Taunton Road West
- AH1 – 1319 Airport Boulevard
- AH2 – 1320 Airport Boulevard

Recommendations:

Environmental Due Diligence for Property Acquisitions

To undertake the roadway improvements, if property acquisitions are required within APECs of high to moderate potential for contamination, it is recommended that property specific Phase One ESAs (and if necessary, Phase Two ESAs) are completed in general accordance with O. Reg, 153/04 for environmental due diligence.

Road Construction and Management of Excess Soil

Concerning construction activities and management of excess soil, GF recommends that an Assessment of Past Uses, Sampling and Analysis Plan (if required) and Soil Characterization Report (if required) is completed, where excavation is proposed in accordance with O. Reg. 406/19: On-Site and Excess Soil Management.

INTRODUCTION

Gannett Fleming Canada ULC (GF) was retained by the City of Oshawa to undertake a Schedule "C" Municipal Class Environmental Assessment Study (M.C.E.A) for upgrades to the Steven Road North Corridor from Taunton Road West to Conlin Road West. In addition, GF will review the need for a proposed east-west Northwood Industrial Area mid-block Arterial 'C' road (from Oshawa/Whitby border to Stevenson Road North) or the justification for its removal from the City's Official Plan. GF conducted a Contamination Overview Study (COS) as part of the scope of work. The Study Area limits for the COS include:

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The Study Area for the COS is shown in **Figure 1**. It should be noted that this COS is intended as a broad-level assessment of actual and potential sources of site contamination within a given area and is based solely on the known, current and former land uses/activities within and surrounding the corridor. This study is not a full environmental liability assessment of each property potentially impacted by the undertaking, and it does not constitute a Phase One Environmental Site Assessment (ESA) as defined by the Canadian Standards Association (CSA Z768-01) and Ontario Regulation 153/04 (O. Reg. 153/04), as amended.

Study Objective

The primary objective of the COS was to identify and review properties and areas with actual or potential sources of contamination that may impact future road improvements and to determine appropriate environmental studies and mitigation measures required to be implemented during the design and construction phases of the project.

For this study, contamination is defined as a material or condition present in the soil, groundwater, surface water, air or buildings/structures that may adversely affect human health or the natural environment (e.g. soil, water, land and buildings).

Scope of Work

The COS was carried out by GF in general accordance with the Ontario Ministry of Transportation (MTO) document Environmental Guide for Contaminated Property Identification and Management (MTO, 2006). The scope of work for the COS included the following tasks:

(a) Records Review

- *Review of Physiographic, Geological Maps and Reports* – to identify the general physiography and geology within Study Area and surrounding areas to understand the general fate of any actual or potential site contamination.
- *Review of Existing Reports and Historical Records* – to review any relevant contamination information previously collected for the Study Area and surrounding properties.
- *Review of Aerial Photographs* – to identify areas of potential concern within and adjacent to the Study Area.
- *Review of Historical Fire Insurance Plans* – to identify areas of potential concern within and adjacent to the Study Area.
- *Review of Ontario Ministry of the Environment, Conservation and Parks (MECP) Data* – to review any previously collected information on former waste disposal sites, former coal gasification plants, Brownfield Sites registered under the Environmental Bill of Rights Registry (EBR), Ontario Regulation 347 (O. Reg.

347) registered waste generators and polychlorinated biphenyl (PCB) storage sites located within the Study Area.
- *Review of private source data for the Study Area and areas located within 250 m of the boundaries of the Study Area through an EcoLog Environmental Risk Information Services (ERIS) Report* – to provide relevant information on private and retail fuel storage tanks, automotive wrecking and supply facilities and waste disposal sites.
- *Review of Municipal and Regional Data* – to identify potentially contaminated sites within the Study Area.

(b) Study Area Reconnaissance

- *Visual Inspection of the Study Area* - to broadly identify properties/areas which represent a potential for site contamination, either based on the nature of their operations/land use (e.g., service stations, industrial areas) or by visual evidence of contamination (e.g., piles of waste, surface staining). This inspection was limited to a non-intrusive roadside inspection.

(c) Reporting

- *Compilation, Evaluation and Discussion of Key Findings* - compilation, evaluation and discussion of all relevant information.
- *Conclusions* - concluding remarks on the presence/probability of actual or potential contamination within the Study Area.
- *Recommendations* – recommendations for any follow-up work based on the findings detailed in the COS report.

STUDY AREA DESCRIPTION AND SETTING

Description of the Study Area

The Study Area included the Right-of-Way along Stevenson Road North from approximately 100 m south of Taunton Road West to approximately 80 m north of Conlin Road West, and the areas between approximately 150 m east and west of the aforementioned Stevenson Road North Corridor. The Study Area is shown in **Figure 1**.

Current and Surrounding Land Uses

Current land uses within the Study Area included undeveloped, agricultural, residential, community, commercial, and industrial. A Trans-Northern Pipeline running in an east to west direction traverses the southern part of the Study Area. The pipeline is located approximately 220 m north of Taunton Road West. Oshawa Creek passes through the northeast portion of the Study Area and runs in a north-south direction east of the Study Area. Goodman Creek is located west of the Study Area.

Lands in or adjacent to the Study Area are shown on **Figure 1**.

Topography and Drainage

Topographic mapping at a scale of 1:17500 available through the Natural Resources of Canada Website was reviewed. The ground surface elevation within the Study Area slopes towards the southern portion of the Study Area and ranges from approximately 150 metres above sea level (masl) in the northwest to 140 masl in the south. The groundwater flow direction is inferred to the southwest and southeast towards Goodman Creek and Oshawa Creek, respectively which flows into Lake Ontario.

Physiography

According to Chapman and Putnam's "The Physiography of Southern Ontario, Third Edition" (1984), the northern portion of the Study Area is located within the physiographic region consisting of till plains (drumlinized) and the southern portion consists of sand plains. The central portion of the Study Area consists of beaches and shorecliffs in the east to west direction.

Geology

Based on the surficial geology maps from the Ontario Geological Survey Mapping Service (OGS, 2010), the native surficial soils in the Study Area and surrounding areas are predominantly sand, gravel, minor silt and clay on glaciolacustrine deposits. The northeast and eastern portion of the Study Area along East Oshawa Creek consists of clay, silt, sand, gravel with potential organic remains on modern alluvial deposits. A portion of the Study Area in the southeast consists of stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain.

Based on the bedrock geology maps from the Ontario Geological Survey Mapping Service (OGS, 2011), the Study Area is underlain by bedrock from the Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member and Eastview Member. This formation consists of shale, limestone, dolostone and siltstone.

Hydrogeology

The groundwater flow direction is inferred to the southwest and southeast towards Goodman Creek and Oshawa Creek, respectively which flows into Lake Ontario. The direction of the shallow groundwater flow can also be influenced by the presence of underground utilities and is not necessarily reflective of regional or local groundwater flow, or local topography. A site-specific determination of groundwater flow is required to obtain groundwater flow direction information for the Study Area.

RECORDS REVIEW

GF completed a comprehensive records review for the Study Area and the neighbouring properties. The purpose of the records review was to collect information on past activities that may have contributed to any site contamination.

Existing Reports

Existing reports were not provided for review at the time of preparing this report. However, GF reviewed the online interactive pipeline map maintained by the Canada Energy Regulator and identified a Trans-Northern Pipeline that runs in an east to west direction, on the south portion of the Study Area, approximately 220 m north of Taunton Road West.

Aerial Photographs

GF reviewed historical aerial photographs for the years 1954, 1969, 1974, 1981, 2005, 2013, and 2022. Relevant observations from the aerial photographs are summarized in **Table 1**. The aerial photographs can be found in **Appendix A**.

Table 1: Summary of Aerial Photography

Aerial Year	Observations
1954 (ERIS Database)	Study Area • The present-day Conlin Road, Stevenson Road North and Taunton Road West are observed. • The Study Area appears to be mostly vacant land with residential and agricultural land use. • The west portion of Conlin Road appears to be developed with residential homes and the east portion appears to be vacant land. The west and east portion of Taunton Road West appears to be developed with residential and agricultural land use. Residential homes and agricultural land use are also observed along Stevenson Road North. Neighbouring Properties • The neighbouring properties appears to be mostly vacant land with residential and agricultural land use. • The lands to the southwest and southeast of the Study Area appears to be developed with residential and agricultural land use. East Oshawa Creek is observed to the east of the Study Area. Vacant land is observed to the north and south.
1969 (ERIS Database)	Study Area • The Study Area appears similar to the 1954 aerial photograph. Neighbouring Properties • The neighbouring properties appears similar to the 1954 aerial photograph. • The former vacant and agricultural lands in the southern portion of the neighbouring properties, located east of Stevenson Road North (1551 Stevenson Road North) appears to be developed with a commercial building with associated parking area.

Aerial Year	Observations
1974 (ERIS Database)	Study Area • The Study Area appears similar to the 1969 aerial photograph. • The central portion of the Study Area, located east of Stevenson Road North (1725 Stevenson Road North) appears to be utilized for commercial land use with three (3) storage buildings. • The present-day buildings located at 1410 Stevenson Road North are observed. • An increase in residential and agricultural land use is observed along Stevenson Road North. Neighbouring Properties • The neighbouring properties appears similar to the 1969 aerial photograph. • Storage buildings and residential homes appears to be developed in the central portion of the neighbouring properties, located east of Stevenson Road North (1725 Stevenson Road North).
1981 (ERIS Database)	Study Area • The Study Area appears similar to the 1974 aerial photograph. Neighbouring Properties • The neighbouring properties appears similar to the 1974 aerial photograph.
2005 (Google Earth)	Study Area • A residential home located at 1920 Stevenson Road North is observed. A pond is observed to the west of the home. • An increase in commercial buildings are observed in the property within the central portion of the Study Area, located east of Stevenson Road North (1725 Stevenson Road North). • The central portion of the Study Area, located west of Stevenson Road North (1618 Stevenson Road North) appears to be developed for commercial land use as a storage yard for vehicles and boats. • The central portion of the Study Area, located west of Stevenson Road North (1560 Stevenson Road North) appears to be developed for commercial land use with storage units within the property. In addition, fill mounds appear to be present on the property. The property further south (1520 Stevenson Road North) appears to be developed for residential and commercial land use with a residential home, storage units and storage trailers. • Vehicles and storage containers are observed adjacent to the west of the building located at 1410 Stevenson Road North. • The present-day commercial building and associated parking area located in the southeast portion of the Study Area (1319 Airport Boulevard) are observed. • The north portion of the Study Area, located west of Stevenson Road North appears to be developed with the present-day residential home with a pond to the west of the property.

Aerial Year	Observations
2005 (Google Earth) continued	Neighbouring Properties • The neighbouring properties appears similar to the 1981 aerial photograph. • The property located at 1560 Stevenson Road North appears to be developed with commercial buildings. • The property located at 1618 Stevenson Road North appears to be developed for commercial land use as a storage yard for vehicles and boats. A pond is observed adjacent to the north of the storage yard. • The present-day community building, and paved parking area located at 416 Taunton Road West, and self-storage facility located at 425 Taunton Road West are observed to the east of the Study Area. • Buildings, aircraft hangars and laneways associated with Oshawa Airport is observed to the south of the Study Area. Two (2) aboveground storage tanks (ASTs) are observed within the Oshawa Airport, located to the south of the Study Area. • Roadways, commercial and residential properties have been developed further east from the Study Area.
2013 (Google Earth)	Study Area • The three (3) former storage buildings located at 1725 Stevenson Road North appears has been removed. An increase in storage units and vehicles are observed on the property. • The former storage units and commercial buildings located at 1560 Stevenson Road North has been removed and fill mounds are still present within the property. • The former storage units located at 1520 Stevenson Road North has been removed. The existing residential home is still present. • The present-day community building and associated parking area located in the southwest portion of the Study Area (1320 Airport Boulevard) are observed. The present-day auto dealership located at 550 Taunton Road West is observed. Neighbouring Properties • The neighbouring properties appears similar to the 2005 aerial photograph. • The former commercial buildings located at 1560 Stevenson Road North has been removed. • An increase in commercial buildings and aircraft hangers part of the airport are observed to the south of the Study Area. • An increase in self-storage facilities is observed to the east of the Study Area.
2022 (Google Earth)	Study Area • The Study Area appears similar to the 2013 aerial photograph. • Two (2) Quonset huts are observed located south of 1866 Stevenson Road North, with the Property Identification Number (PIN) 164320020. Storage units are observed further to the south. • It appears that two (2) storage trailers are located in the eastern portion of the property located at 1560 Stevenson Road North.

Aerial Year	Observations
2022 (Google Earth) continued	• Storage trailers and vehicles are observed on the property located at 1520 Stevenson Road North. • The former vehicles and storage containers to the west of the building located at 1410 Stevenson Road North have been removed. • Storage trailers and vehicles are observed on the property (500 Taunton Road West) located adjacent to the north of the auto dealership (550 Taunton Road West). • The former residential homes located east of the auto dealership has been removed and appears to be under development for commercial buildings. <u>Neighbouring Properties</u> • An increase in commercial buildings is observed to the south of the Study Area.

Fire Insurance Plans

GF contacted Opta Information Intelligence (Opta) for available Fire Insurance Plans (FIPs) for the Study Area. The purpose of the historical plan review was to identify ASTs and underground storage tanks (USTs), or historical land uses with the potential for soil and groundwater contamination. It was found that there are no fire insurance plans available for the Study Area. The FIPs search request is included in **Appendix B**.

Ministry of the Environment, Conservation and Parks

<u>Coal Gasification Plant Inventory</u>

The Coal Gasification Plant inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the "Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988", collected by the MECP. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. According to the ERIS database search, there were no coal gasification plants within the Study Area.

<u>Brownfield Environmental Site Registry</u>

The Environmental Site Registry (ESR) is a publicly accessible database documenting any Records of Site Condition (RSC) that have been filed with MECP since the inception of the ESR in October 2004. The RSC documents any environmental site assessment (i.e., Phase One and Phase Two ESAs), site clean-up, and/or site-specific risk-assessment completed at a particular property. This legal instrument is pursuant to Ontario Regulation 153/04 of Part XV.1 of the Ontario Environmental Protection Act. The significance of the ESR relevant to this COS is that it identifies properties in the Study Area and neighbouring properties that have been investigated for potentially contaminating activities. According to the ERIS database search, one (1) RSC was filed within the Study Area and none within the Neighbouring Properties.

An RSC (39703) was filed for the property within the Study Area, located at 500 Taunton Road West. The RSC submission was for a residential property intended to be used as a commercial property.

<u>Waste Disposal Site Inventory (1991)</u>

MECP maintains an inventory of known open (active or inactive) and closed disposal sites in Ontario. "Class A" sites are those that are deemed to have the potential to impact human health because of the proximity to human development; "Class B" sites are those that are deemed to have the potential to impact the environment. According to the ERIS database search, there were no records for waste disposal sites present within the Study Area.

Waterbodies and Areas of Natural Significance

Oshawa Creek passes through the northeast portion of the Study Area and runs in a north-south direction east of the Study Area. Goodman Creek is located west of the Study Area. The Natural Heritage Areas database maintained by the Ontario Ministry of Natural Resources and Forestry (MNRF) lists areas of natural significance, including provincial parks, conservation reserves, areas of natural and scientific interest and provincially significant wetlands. A database review indicated provincially significant wetlands are observed in the northwest and southeast portion of the Study Area and in neighbouring properties. Oshawa Creek has the Greenbelt Land Use designation which runs through the northeast portion of the Study Area and is also located to the east of the Study Area.

Well Records

According to the ERIS database search, there are 26 wells within the Study Area and 23 wells within the neighbouring properties. Within the Study Area, 21 were domestic water supply wells, one (1) public water supply well, one (1) observation well, and three (3) abandoned or other use wells. Within the neighbouring properties, six (6) were domestic water supply wells, one (1) public water supply well, seven (7) test holes, three (3) observation wells and six (6) abandoned or other use wells.

Freedom of Information (FOI)

A request was made to the Freedom of Information (FOI) Office of the MECP for records at certain properties within the Study Area and neighbouring properties lands. Based on the limited information from the background review and the site reconnaissance, an FOI request was initiated for 1200 Airport Boulevard, 481 Aviator Lane, and 550 Taunton Road North. FOI requests consist of data from the Spills Action Centre, Investigations and Enforcement Branch, Environmental Assessment and Approvals Branch, and the Environmental Monitoring and Reporting Branch, as well as records from local municipalities. At the time of completion of this report, a response from the MECP was not received except for 481 Aviator Lane and 550 Taunton Road North. The MECP response indicated that the property located at 481 Aviator Lane is listed as an active waste generator, and no records were found for 550 Taunton Road. The MECP responses are provided in **Appendix C**.

ERIS Environmental and Historical Information

The Ecolog ERIS system provides information from federal, provincial and private source databases relating to a defined search area. Each database is divided into records that present information such as company names, addresses, descriptions, status and other pertinent information. Records that fall within the Study Area and neighbouring properties were extracted from the database for review. The key findings from the ERIS database report are summarized in **Table 2**. The ERIS database report is provided in **Appendix D**.

Table 2: Summary of ERIS Database Information

ERIS Database	Results	Significance of Findings
Contaminated Sites on Federal Land	One (1) record was found in the neighbouring property to the south, the Oshawa Airport (1200 Airport Boulevard). Benzene, toluene, ethylbenzene, xylenes (BTEX) and petroleum hydrocarbons (PHCs) are listed as contaminants for soil and groundwater in the record. However, the record indicates after initial testing was completed, no further action was required.	Moderate
Federal Identification	One (1) record was found in the neighbouring property to the south, the Oshawa Airport (1200 Airport Boulevard). The Corporation of the	High

ERIS Database	Results	Significance of Findings
Registry for Storage Tank Systems (FIRSTS)	City of Oshawa was listed in the ERIS Database Report indicating the presence of five (5) aboveground storage tanks (ASTs) with the following information: • Two (2) ASTs containing diesel with a capacity of 4,500 L and 1,345 L and installed in 2017 and 2006, respectively; • Two (2) ASTs with capacities of 45,437 L, containing jet fuel and installed in 1997; and • One (1) AST with a capacity of 1,360 L, containing gasoline and installed in 2006.	
Fuel Oil Spills and Leaks	One (1) record was found within the neighbouring properties for 646 Taunton Road West.	Low
National Environmental Emergencies System (NEES)	Two (2) records were found in the neighbouring property to the south, the Oshawa Airport (1200 Airport Boulevard): • A fuel oil leak of 18.25 tonnes (metric) from an aboveground tank occurred in 1986 • An aviation gasoline leak of 0.2 tonnes (metric) from an aboveground tank occurred in 1987	High
Ontario Spills	One (1) record was found within the Study Area for 1520 Stevenson Road North for illegal sledge dumping. The health and environmental consequence was determined to be minor. Three (3) records were found within the neighbouring property to the south, the Oshawa Airport (1200 Airport Boulevard) : • Diesel fuel spill of 50 L from a motor vehicle to a manhole • Aviation gasoline spill of unknown volume • Unknown volume of oily substances was identified on the ground,	Low
Ontario Regulation 347 Waste Generators Summary	21 records were found within the Study Area and 108 records were found within 250 m from the boundaries of the Study Area. The notable records include: • Nine (9) records were identified for 481 Aviator Lane (Corporate Aircraft Restorations Inc.), approximately 40 m southeast of the Study Area, for the generated wastes halogenated solvents light fuels, petroleum distillates, waste crankcase oils and lubricants, waste oils and lubricants, paint/pigment/coating residues. • One (1) record was identified for 441 Aviator Lane (Corporate Aircraft Restorations Inc.), approximately 88 m southeast of the Study Area, for the generated wastes halogenated solvents, waste oils and lubricants, paint/pigment/coating residues and petroleum distillates. • 29 records were found at 1200 and 1250 Airport Boulevard (Oshawa Airport), approximately 195 m south of the Study Area. Total Aviation & Airport Solutions Ltd. was registered as	Moderate

ERIS Database	Results	Significance of Findings
	a generator of waste crankcase oils & lubricants, oil skimmings & sludges, and light fuels. Shell Canada Products Limited was registered as generator of light fuels, oil skimmings & sludges, waste oils & lubricants. Corporation of the City Oshawa was registered as a generator of light fuels, waste oils & lubricants. Serco Aviation Services Inc. was registered as a generator of light fuels, oil skimmings & sludges. Canadian Flight Academy Ltd. was registered as a generator of light fuels, oil skimmings & sludges, waste oils & lubricants.	

The ERIS records indicate that there were residential, community and commercial land uses in the Study Area and community and commercial land uses in the neighbouring properties. The Key Findings Section of this report summarizes the Areas of Potential Environmental Concern (APEC) that were identified as a result of the ERIS report, and Study Area and neighbouring properties reconnaissance.

Municipal Records

GF contacted the City of Oshawa and the Regional Municipality of Durham in September and October 2022, respectively, requesting a search of their general records for any relevant environmental information pertaining to the Study Area, including records of environmental complains, spills or notifications, and building permits. These documents may provide site plan development information which may include facilities, buildings and/or structures of potential environmental significance (e.g., fuel storage and dispensing areas, waste oil tanks and oil/water separators, waste management areas, active or closed waste disposal sites or historical activities, and any spill and environmental compliance notifications/complaints). The purpose of the review was to obtain information on properties located within the Study Area which have the potential for site contamination. A response from the City of Oshawa and the Regional Municipality of Durham indicated that no available records were available for review.

STUDY AREA AND NEIGHBOURING PROPERTIES RECONNAISSANCE

GF conducted a site visit to the Study Area on October 6, 2022. The purpose of the visit was to document land uses and business operations that may represent a potential source of contamination within the Study Area and neighbouring properties (e.g., gas stations, auto repair facilities, and industrial operations). The results of the reconnaissance have been incorporated into this report. It should be noted that the reconnaissance did not include any building inspections or comprehensive exterior inspections of any properties in the Study Area and neighbouring properties. Therefore, any inferences regarding the presence or absence of contaminating activities are strictly based on visual observations made from the roadside publicly accessible areas.

Current land uses noted within the Study Area included:

- Residential homes;
- Vacant, undeveloped land;
- Commercial buildings;
- Community buildings;
- Storage facilities and storage yards:
    - 500 Taunton Road West: Storage of vehicles and storage units.
    - 1725 Stevenson Road North: Fill mounds (soil stockpiles) and storage of vehicles were observed.
- Car dealerships and automotive centers:
    - 550 Taunton Road West: Kia Motors with service garage and one (1) AST observed.

Current land uses within the neighbouring properties included:

- Residential homes;
- Vacant, undeveloped land;
- Commercial buildings;
- Storage facilities and storage yards;
- Community buildings; and
- Airstrips and hangars:
    - 481 Aviator Lane: One (1) hangar was observed.
    - 1190 Keith Ross Drive: One (1) hangar was observed.
    - 1200 Airport Boulevard: Runways and two (2) ASTs associated with Oshawa Airport were observed.

The reconnaissance results showed that land uses in the Study Area and neighbouring properties consist of a mixture of vacant, undeveloped land, and residential, community, commercial and industrial uses. Photographs of the observations noted during the Study Area and neighbouring property reconnaissance are included in **Appendix E**.

KEY FINDINGS

Actual Sources of Contamination

Based on the information collected during this study, records of historical contamination in the Study Area were not identified.

Potential Sources of Contamination

Potentially Contaminating activities (PCAs) noted during the background information review and site reconnaissance are summarized in **Table 3** and illustrated in **Figure 2**.

The fact that an activity or operation appears in **Table 3** does not mean that hazardous substances are used or stored on all sites occupied by that activity or operation, nor that the land will have hazardous substances. The list merely indicates that such activities are more likely to use or store hazardous substances, and there is a greater probability of site contamination occurring than other uses or activities. Conversely, activities or industries that do not appear in the table do not preclude it from having a potential for site contamination.

Table 3: Summary of Potentially Contaminating Activities

PCA	Location	Description	Information Source	Potential Contribution of the PCA to an APEC
PCA 30 (i) – Importation of fill material of unknown quality PCA 52 (i) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Study Area and neighbouring property: 1725 Stevenson Road North	During the site reconnaissance, fill mounds (soil stockpiles) were observed on the property. Based on the site reconnaissance and aerial photographs, the property appears to be a former and current commercial property and storage of vehicles.	Study Area Reconnaissance, Aerial Photographs	Based on the type of operations and fill of unknown quality, the PCAs are considered to contribute to **CI1**.
PCA 52 (ii) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Study Area and neighbouring property: 1618 Stevenson Road North	Based on the aerial photographs, the property has a commercial land use and has been operating as a storage yard for vehicles and boats.	Aerial Photographs	Based on the type of operations, the PCA is considered to contribute to **SY1.**
PCA 30 (ii) – Importation of fill material of unknown quality	Study Area: 1560 Stevenson Road North	Based on the aerial photographs, the property land use has been commercial. Storage units and fill mounds were observed on the eastern portion of the property and commercial building to the west.	Aerial Photographs	Based on the former commercial activities on the property and fill of unknown quality, the PCAs are considered to contribute to **CI2.**
PCA 52 (iii) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems PCA B (i) – Historical spill	Study Area and neighbouring property: 1520 Stevenson Road North	Based on the aerial photographs, the property appears to have been used as a commercial storage facility. Storage trailers and vehicles were observed on the property based on the recent 2022 aerial photograph. In addition, this property was listed in the ERIS Database Report indicating that an incident involving illegal dumping was recorded in 2021.	ERIS Database Report, Study Area Reconnaissance, Aerial Photographs	Based on the former and current commercial activities on the property (storage for trailers and vehicles), the property is considered to contribute to **SY2.** Based on the information gathered on the spill (i.e. environmental impact not listed, no response from MOE) and the Study Area reconnaissance, the PCA is not anticipated to have impacted the Study Area.
PCA 52 (iv) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Study Area: 1410 Stevenson Road North	Based on the aerial photographs, the property appears to have been used for storage of vehicles and storage units.	Aerial Photographs	Based on the former use of the property for storage of vehicles and storage units, the PCA is considered to contribute to **SY3**.
PCA 52 (v) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Study Area: 500 Taunton Road West	Based on the aerial photographs, the property appears to have been used for storage of vehicles and storage units.	Aerial Photographs, Study Area Reconnaissance	Based on the use of the property for storage of vehicles and storage units, the PCA is considered to contribute to **SY4**.
PCA 28 (i) - Gasoline and associated products storage in fixed tanks PCA 52 (vi) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	Study Area: 550 Taunton Road West	Based on the aerial photographs and site reconnaissance, the property is formerly and currently occupied by Kia Motors as a car dealership. A service garage and one (1) AST adjacent to the north of the commercial building were observed during the site reconnaissance.	Study Area Reconnaissance, Aerial Photographs	Based on the type of operations (i.e. auto repair garage) and presence of one (1) AST the PCAs are considered to contribute to **AC1.**
PCA C - Fuel distribution system	Southern portion of the Study Area, approximately 220 m north of Taunton Road West	Based on background information, a Trans-Northern Pipeline runs in an east to west direction, approximately 220 m north of Taunton Road West.	Canada Energy Regulator, Online Interactive Pipeline Map.	Based on the type of operation, the PCA is considered to contribute to **TNP1.**

PCA	Location	Description	Information Source	Potential Contribution of the PCA to an APEC
PCA D (i) – Registerable wastes generation PCA #3 (i) – Airstrips and hangar operation PCA #27 (i) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles PCA #28 (ii) – Gasoline and associated products storage in fixed tanks PCA B (ii) – Historical spill	Neighbouring Properties: 1200 Airport Boulevard, approximately 195 m south of the Study Area.	During the site reconnaissance, two (2) ASTs were observed in the northeast portion of the property. Oshawa Airport was listed in the ERIS Database Report as a Contaminated Sites on Federal Land. The contaminants listed were BTEX, and PHCs in groundwater and soil. Two (2) records indicating a leak of 18.25 metric ton of fuel oil and 0.2 metric ton of aviation gasoline were reported in 1986 and 1987, respectively. An unknown amount of oily substance observed on the ground was recorded in 1989. The Corporation of the City of Oshawa was listed in the ERIS Database Report indicating the presence of five (5) aboveground storage tanks (ASTs) with the following information: • Two (2) ASTs containing diesel with a capacity of 4,500 L and 1,345 L and installed in 2017 and 2006, respectively; • Two (2) ASTs with capacities of 45,437 L, containing jet fuel and installed in 1997; and • One (1) AST with a capacity of 1,360 L, containing gasoline and installed in 2006. Total Aviation & Airport Solutions Ltd. was registered as a generator of waste crankcase oils & lubricants, oil skimmings & sludges, and light fuels. Shell Canada Products Limited was registered as generator of light fuels, oil skimmings & sludges, waste oils & lubricants. Corporation of the City Oshawa was registered as a generator of light fuels, waste oils & lubricants. Serco Aviation Services Inc. was registered as a generator of light fuels, oil skimmings & sludges. Canadian Flight Academy Ltd. was registered as a generator of light fuels, oil skimmings & sludges, waste oils & lubricants.	ERIS Database Report, Study Area Reconnaissance, Aerial Photographs	Based on the type of operation (i.e. municipal airport), nature of the generated waste (e.g. waste oils and lubricants, light fuels), historical spill, and presence of ASTs, the PCAs within the neighbouring property is considered to contribute to **APEC MA1**.
PCA D (ii) – Registerable wastes generation PCA #3 (ii) – Airstrips and hangar operation PCA #27 (ii) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles	Neighbouring Properties: 481 Aviator Lane, approximately 41 m southeast of the Study Area.	Corporate Aircraft Restorations Inc. was registered as a generator of waste generator of waste oils & lubricants, halogenated solvents, paint/pigment/coating residues, light fuels, and petroleum distillates. Based on the aerial photographs and site reconnaissance, a hanger is observed on the property.	ERIS Database Report, Study Area Reconnaissance, Aerial Photographs	Based on the close proximity of the PCAs to the Study Area, the PCAs are considered to contribute to **APEC AH1**.
PCA D (iii) – Registerable wastes generation PCA #3 (iii) – Airstrips and hangar operation PCA #27 (iii) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles	Neighbouring Properties: 1190 Keith Ross Drive, approximately 187 m southwest of the Study Area.	Enterprise Airlines/Entair was registered as a generator of waste generator of oil skimmings & sludges, and waste oils & lubricants. Based on the aerial photographs and site reconnaissance, a hanger is observed on the property.	ERIS Database Report, Study Area Reconnaissance, Aerial Photographs	Based on the close proximity of the PCAs to the Study Area, the PCAs are considered to contribute to **APEC AH2**.

Areas of Potential Environmental Concern

Based on the findings of this report, APECs with high and moderate potential for contamination have been identified within the Study Area

APECs with high potential for contamination: These areas correspond to locations where land uses consist of commercial operations that could impact soil and/or groundwater quality within the Study Area. Four (4) areas of high potential for contamination were identified in the Study Area.

APECs with moderate potential for contamination: The areas represent land uses that are commercial properties, suspected of using chemical compounds or performing activities that may impact soil and/or groundwater within the Study Area. Seven (7) areas of moderate potential for contamination were identified in the Study Area.

The APECs with high and moderate potential for contamination is summarized in **Table 4** and **Table 5,** respectively and illustrated in **Figure 2**.

Table 4: Summary of APECs with High Potential for Contamination within the Study Area

Land Use of PCA	Location of High APECs in the Study Area	PCA
Commercial (CI)	CI1 - 1725 Stevenson Road North	PCA 30 (i) – Importation of fill material of unknown quality PCA 52 (i) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
Automotive Centers (AC)	AC1 - 550 Taunton Road West	PCA 28 (i) - Gasoline and associated products storage in fixed tanks PCA 52 (vi) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems
Trans-Northern Pipeline (TNP)	TNP1 - Southern Portion of the Study Area	PCA C - Fuel distribution system
Municipal Airport (MA)	MA1 – 1319 and 1320 Airport Boulevard	PCA D (i) – Registerable wastes generation PCA #3 (i) – Airstrips and hangar operation PCA #27 (i) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles PCA #28 (ii) – Gasoline and associated products storage in fixed tanks PCA B (ii) – Historical spill

Table 5: Summary of APECs with Moderate Potential for Contamination within the Study Area

Land Use of PCA	Location of Moderate APECs in the Study Area	PCA
Commercial (CL)	CI2 – 1560 Stevenson Road North	PCA 30 (ii) – Importation of fill material of unknown quality
Storage Yards (SY)	SY1 - 1618 Stevenson Road North SY2 – 1520 Stevenson Road North SY3 – 1410 Stevenson Road North SY4 – 500 Taunton Road West	PCA 52 (ii, iii, iv, v) - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems PCB B (i) – Historical Spill
Airstrip Hanger Operation (AH)	AH1 – 1319 Airport Boulevard	PCA D (ii) – Registerable wastes generation PCA #3 (ii) – Airstrips and hangar operation PCA #27 (ii) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles
Airstrip Hanger Operation (AH)	AH2 – 1320 Airport Boulevard	PCA D (iii) – Registerable wastes generation PCA #3 (iii) – Airstrips and hangar operation PCA #27 (iii) – Garages and maintenance and repair of railcars, marine vehicles and aviation vehicles

RECOMMENDATIONS

Environmental Due Diligence for Property Acquisitions

To undertake the roadway improvements, if property acquisitions are required within APECs of high to moderate potential for contamination, it is recommended that property specific Phase One ESAs (and if necessary, Phase Two ESAs) are completed in general accordance with O. Reg, 153/04 for environmental due diligence.

Road Construction and Management of Excess Soil

Concerning construction activities and management of excess soil, GF recommends that an Assessment of Past Uses, Sampling and Analysis Plan (if required) and Soil Characterization Report (if required) is completed, where excavation is proposed in accordance with O. Reg. 406/19: On-Site and Excess Soil Management.

REFERENCES

Canada Energy Regulator, Interactive Pipeline Map (https://www.cer-rec.gc.ca/en/safety-environment/industry-performance/interactive-pipeline/)

Chapman, L.J, and Putman, D.F, 1984, Physiography of Southern Ontario; Ontario Geological Survey, Map P.2715 (coloured). Scale 1:600 000

Ministry of Transportation (MTO), 2006. Environmental Guide for Contaminated Property Identification and Management. October 2006.

Natural Resources Canada, the Atlas of Canada – Topographic Maps (https://atlas.gc.ca/toporama/en/index.html)

Ontario Geological Survey (OGS). 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 128 – Revised.

Ontario Geological Survey (OGS). 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release – Data 126 – Revision 1.

CLOSURE

This report, along with all deliverables and documents referenced or contained therein ("Report"), has been prepared for the sole and exclusive benefit of the City of Oshawa (the "Client") pursuant to the prime agreement governing the project. To the extent any other party than the Client relies or makes any decision based on, the contents, assumptions, and recommendations contained in the Report ("Reliance"), such Reliance shall be at that party's sole risk and that party shall bear any and all responsibility for such Reliance. Gannett Fleming accepts no responsibility for any causes of action or claims for damages, if any, suffered by any other party which arise from, relate to, or are in any way incurred due to a third party's Reliance on the Report.

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Some of the information presented in this Report was provided through existing documents and reliance on other third parties in some cases. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, Gannett Fleming in certain instances has been required to assume that the information provided is accurate. The conclusions, as presented, represent the best judgment of the assessor based on visual observations made from the roadside in publicly accessible areas of the Study Area observed on the date:

- October 6, 2022

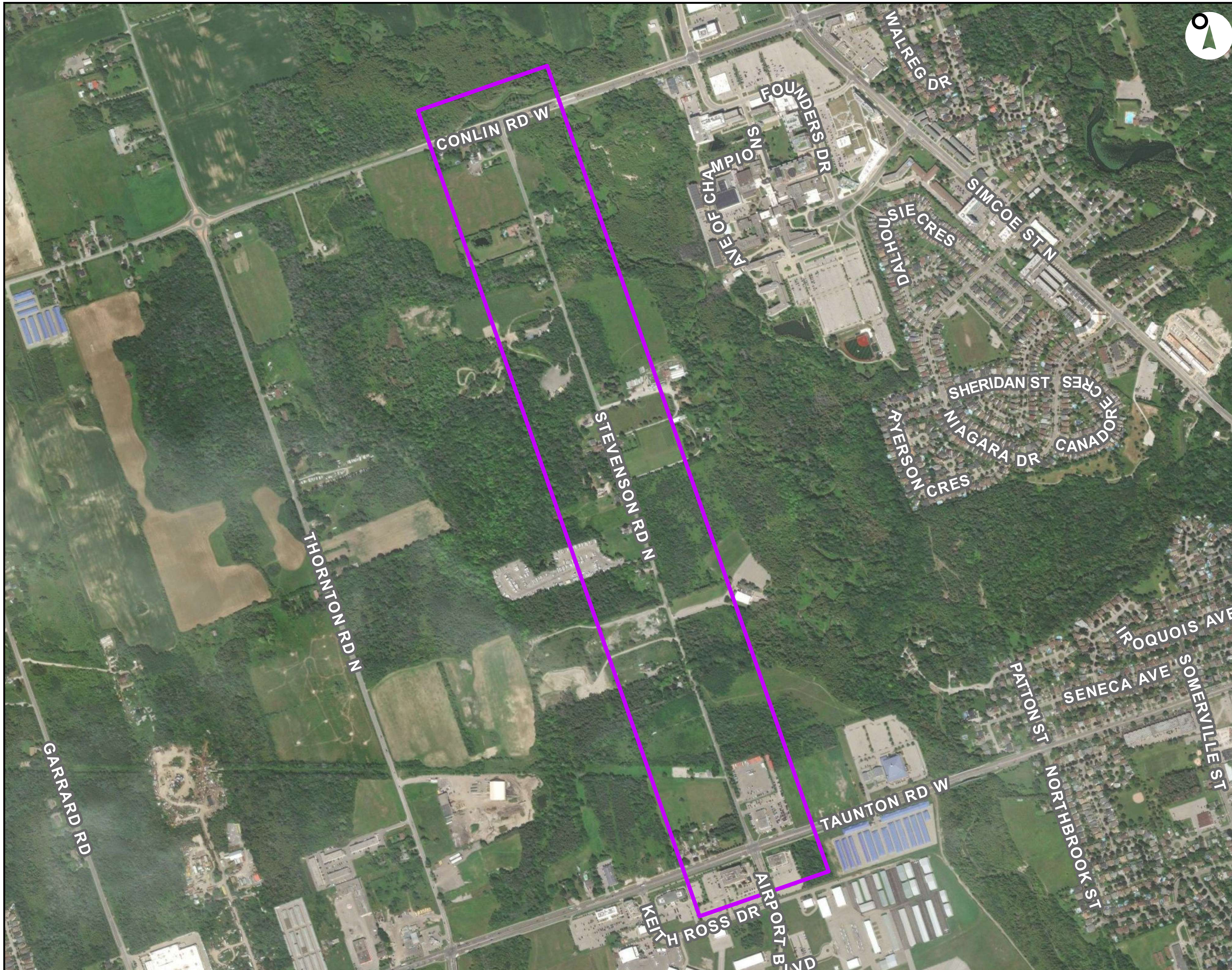
Should additional information become available, Gannett Fleming requests that this information be brought to our attention so that we may reassess the conclusions presented herein.

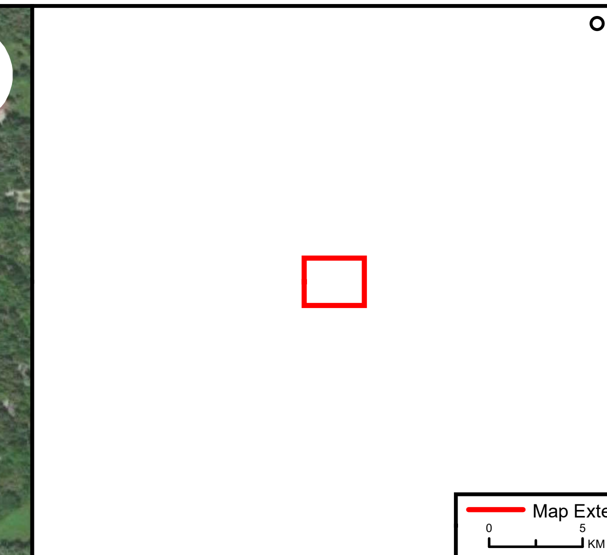
QUALIFICATION OF ASSESSORS

Ishtiaque Khandker, M.Env.Sc., P.Geo., is a Senior Environmental Scientist at Gannett Fleming and has over 11 years of experience managing and conducting environmental site assessments, soil and groundwater remediation and excess soil management projects. He has delivered numerous projects across Ontario for clients from the transit, transportation and infrastructure sector, downstream and midstream oil and gas sectors, provincial and federal government, and municipalities.

Benedict Lee, P.Eng., is an Environmental Engineer with Gannett Fleming and has over 6 years of experience in the environmental consulting industry. He has conducted Phase I and II Environmental Site Assessments at vacant, residential, commercial and industrial properties. In addition, he is experienced in coordinating geo-environmental field programs with applicable Canadian Standards Association (CSA) and Ontario Regulation 153/04 principles, including the supervision of borehole drilling, test pitting, soil vapour surveys, and indoor air sampling. In addition, he has designed and supervised the construction of vapour mitigation systems

FIGURES





Legend

Study Area

Stevenson Road North - Contamination Overview Study (COS)

Study Area Location

0 50 100 150 200 250
Metres
Datum: NAD 1983 UTM Zone 17N

Source: Aerial imagery provided by ESRI, dated 2021.

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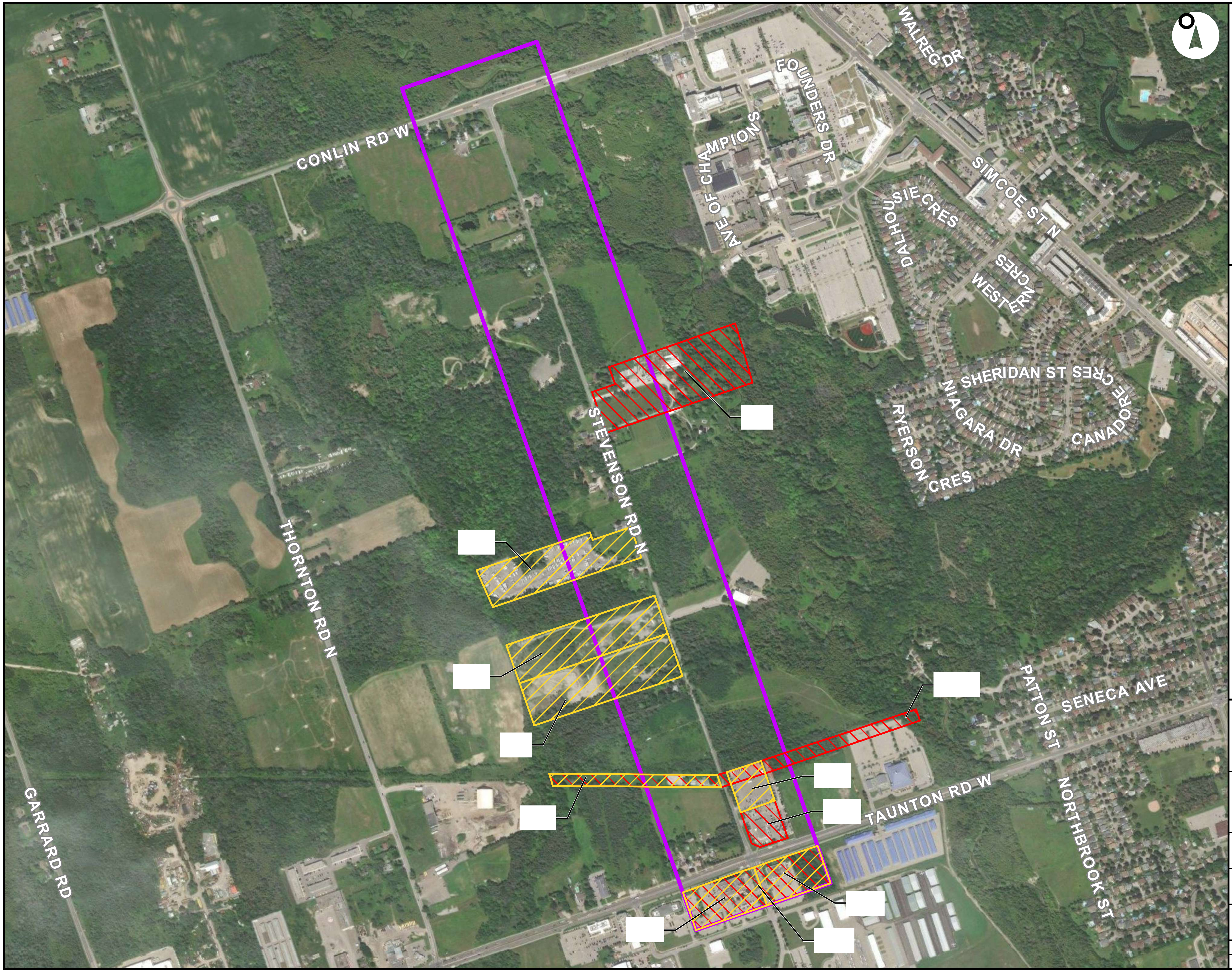
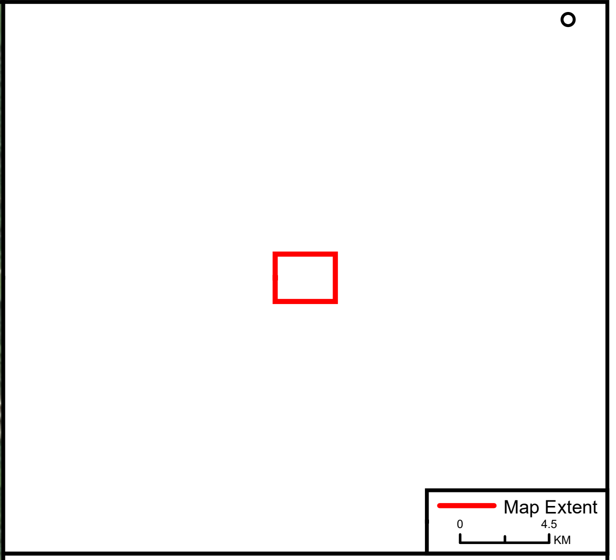
Oct, 2022	1:9,500	**Figure 1**
P 072533	Rev A	





Legend

- Study Area
- High
- Moderate

CI1 – 1725 Stevenson Road North
CI2 – 1560 Stevenson Road North
AC1 – 550 Taunton Road West
TNP1 – Southern Portion of the Study Area
SY1 – 1618 Stevenson Road North
SY2 – 1520 Stevenson Road North
SY3 – 1410 Stevenson Road North
SY4 - 500 Taunton Road West
AH1 - 1319 Airport Boulevard
AH2 - 1320 Airport Boulevard
MA1 - 1319 and 1320 Airport Boulevard

Stevenson Road North - Contamination Overview Study (COS)

Areas of Potential Environmental Concern (APEC)

0 50 100 150 200 250
Metres
Datum: NAD 1983 UTM Zone 17N

Source: Aerial imagery provided by ESRI, dated 2021.

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Nov, 2022	1:9,000	**Figure 2**
P 072533	Rev A	

Appendix A

Historical Aerial Photographs

This document is available upon request.

Please contact Engineering Services at
engineering@oshawa.ca

Appendix B

Fire Insurance Plan

This document is available upon request.

Please contact Engineering Services at
engineering@oshawa.ca

Appendix C

Freedom of Information

This document is available upon request.

Please contact Engineering Services at
engineering@oshawa.ca

Appendix D

Ecolog ERIS Report

This document is available upon request.

Please contact Engineering Services at
engineering@oshawa.ca

Appendix E

Photographs

This document is available upon request.

Please contact Engineering Services at
engineering@oshawa.ca