
TO: GENERAL COMMITTEE

SUBJECT AFFORDABLE HOUSING ON SURPLUS CITY OWNED PROPERTIES
– NEXT STEPS TO BE TAKEN

WARD: 2

PREPARED BY AND KEY CONTACT: A. MILLS, MANAGER OF LEGAL SERVICES, EXT. 5051

SUBMITTED BY: I. PETERS, DIRECTOR OF LEGAL SERVICES

CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the Phase 2 Environmental Site Assessment and Geotechnical Review completed by WSP Canada Inc. and attached as Appendices “A” and “B” to Staff Report LGL004-20 be received.
2. That staff continue to work with WSP Canada Inc. to refine the estimate of costs to remediate and prepare the properties legally described and shown on Appendix “C” to Staff Report LGL004-20, (“Subject Properties”) for redevelopment.
3. That staff engage with social and non-profit housing providers including the County of Simcoe (“Housing Providers”) seeking their input on the creation of affordable housing as defined by the City of Barrie (“City”) to determine:
 - a) The greatest needs currently in the City for affordable housing and how those needs could be best addressed through the disposition and redevelopment of the Subject Properties;
 - b) The funding, grants and governmental assistance currently or soon to be available to Housing Providers for property acquisition and construction of affordable housing development; and
 - c) The most appropriate and effective way to bring the Subject Properties to market so as to maximize the potential number of bid submissions received from Housing Providers and to give the project the greatest chance of success.
4. That staff in the Legal Services Department report back to General Committee with the results of the consultation and recommend the next steps to be taken to dispose of the Subject Properties to a Housing Provider for the creation of affordable housing.

PURPOSE & BACKGROUND

Report Overview

5. The purpose of this Staff Report is to provide Council with an update on the environmental status of the Subject Properties and to seek Council’s direction on the next steps to be taken in the City’s efforts to see affordable housing constructed at this location.

6. The Council adopted "Affordable Housing Strategy" recommends "that the development of affordable housing be prioritized in considering the sale or acquisition of lands by the City of Barrie."
7. On May 13, 2019, City Council adopted motion 19-G-115 regarding SURPLUSSING OF CITY OWNED PROPERTIES FOR THE CREATION OF AFFORDABLE HOUSING - 65 VESPRA STREET AND 70 AND 72 VICTORIA STREET (WARD 2) as follows:
 1. That the properties legally described and shown in Appendix "A" to Staff Report LGL003-19 (the "Subject Properties") be declared surplus to the needs of The Corporation of the City of Barrie (the "City").
 2. That the environmental studies and related work necessary to determine the development potential of the Subject Properties be undertaken at an estimated cost not to exceed \$100,000.00 and be funded from the Council Strategic Priorities Account.
 3. That staff be directed to develop terms for a public tender process subsequent to the completion of the environmental studies seeking bid submissions from social or non-profit housing providers and obtain approval from Council prior to undertaking such process. (LGL003-19) (File: L17-66 and L17-71)
8. On November 18, 2019 and May 25, 2020, staff provided Council with updates on:
 - a) The status of the environmental investigations being completed to assess the development potential of the Subject Properties.
 - b) Proposed timing for a staff report to Council recommending terms for a public tender process seeking bid submissions from social or non-profit housing providers.

ANALYSIS

9. An Environmental Site Assessment ("ESA") – Phase 1 was completed by the environmental consulting firm Golder Associates Ltd and submitted to the City on January 8, 2020. The Phase 1 ESA recommended that a Phase 2 ESA be completed.
10. Staff procured and retained WSP Canada Inc. to complete a Phase 2 ESA and Geotechnical Review. The results of these investigations are summarized as follows:
 - a) Some remediation will be necessary prior to redevelopment in order to address historical and surrounding uses;
 - b) Existing soil condition are not ideal for supporting heavy loads; and
 - c) The ground water depth is between 1.3 and 3.4 meters below the ground surface.
11. These conditions can be addressed by dewatering and removing the existing soil and replacing it with engineered fill. The costs to remediate are estimated to not exceed \$500,000. Staff will continue working with WSP Canada Inc. to better quantify this estimate.
12. The County of Simcoe is the designated Service Manager in the City for social housing programs and is responsible for planning, funding and managing it. Their expertise in this area should be drawn on to assist the City with achieving its affordable housing objectives.

13. Consulting with Housing Providers will assist the City in better understanding the community needs, affordable housing landscape and what opportunities may exist for the City to enable the creation of affordable housing on City owned properties.

ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS

14. The following environmental and climate change impact matter has been considered in the development of the recommendation:
- a) Redevelopment of the Subject Properties will necessitate some environmental remediation to address historical former uses onsite and migration of contamination from other properties in close proximity.

ALTERNATIVES

15. The following alternative is available for consideration by General Committee:

Alternative #1

General Committee could alter the proposed recommendation by forgoing the consultation with Housing Providers and directing staff to issue a procurement document on certain terms and conditions seeking bids for the creation of affordable housing on the Subject Properties.

This alternative is not recommended as consultation with the Housing Providers is considered crucial to inform the City's next steps to be taken and lead to the best possible outcome.

FINANCIAL

16. The Subject Properties have an estimated market value of approximately \$1,500,000 as if zoned for medium density residential use and before consideration of remediation costs which typically are deducted from market value in a sales transaction. Remediation costs are estimated to be approximately \$500,000.

LINKAGE TO 2018–2022 STRATEGIC PLAN

17. The recommendation(s) included in this Staff Report support the following goal identified in the 2018-2022 Strategic Plan:
- ☒ Fostering a Safe and Healthy City
18. The recommendations in this staff report have the potential of creating more affordable housing in the City.

APPENDIX "A"

Phase 2 ESA - Executive Summary

1 EXECUTIVE SUMMARY

WSP Canada Inc. was retained by the City of Barrie to conduct a Phase Two Environmental Site Assessment (ESA) at the property municipally identified as 65 Vespra Street and 72 Victoria Street, Barrie, Ontario (hereafter referred to as the "Phase Two Property" or the "Site"). It is our understanding that this Phase Two ESA was undertaken to assess the soil and groundwater conditions at the Site prior to its proposed redevelopment for residential land use.

The Site is an irregular-shaped 1.5-acre (0.607 ha) parcel of land located on the southwest corner of the intersection of Vespra Street and Sanford Street in a mixed residential and commercial area in Barrie, Ontario. The Site, formerly occupied by a fire and police station, is currently vacant land covered by asphalt, gravel, and vegetation.

In January 2020, Golder Associates Ltd. (Golder) completed a Phase One ESA for the Site which concluded that potentially-contaminating activities (PCAs) on the Site and/or within the Phase One Study Area resulted in the identification of Areas of Potential Environmental Concern (APECs) on the Site as summarized below:

- Importation of fill material of unknown quantity (PCA 30) associated with the development of the Site and the demolition of the former on-site buildings (APEC 1);
- Registration of the Site as a hazardous waste generator (PCA 58) between 1990 and 2013 (APEC 2);
- Use of the northeastern portion of the Site for fire extinguisher training (PCA 24) associated with the former fire hall operations (APEC 3);
- Former presence of a pad-mounted transformer (PCA 55) adjacent to the west-wall of the former onsite building (APEC 4);
- Historical operation of a gun range (PCA 21) in the basement on the eastern portion of the former on-site building associated with the former police station operations (APEC 5);
- Former waste sites located immediately north and northwest of the Site (PCA 58) the limits of which are not known, and are reported to encroach on the northern portion of the Site (APEC 6 and 7); and,
- Historical discharge of 20 L of gasoline to the ground and catch basin 10 m southwest of the Site in 2011 (APEC 8).

During this Phase Two ESA, a total of eleven (11) boreholes were advanced at the Site to a maximum depth of 6.1 metres below ground surface (mbgs) between May 11 to 13, 2020 under the supervision of WSP personnel to investigate the APECs identified in Golder's Phase One ESA. Ten (10) of the eleven (11) boreholes were completed as groundwater-monitoring wells for the purpose of groundwater sampling, which took place on May 14 and 15, 2020. Soil and groundwater samples were submitted for select analyses of potential contaminants of concern (COPCs) including: metals and other regulated parameters (ORPs), petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). The soil and groundwater analytical results were compared to the 2011 Ministry of the Environment, Conservation and Parks (MECP) Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/ Parkland/ Institutional (RPI) Use.

Based on works conducted during the Phase Two ESA, WSP presents the following findings:

- Surface materials identified at the Site included asphalt, topsoil, and granular fill. Underlying the surface materials, fill material consisting of sand, silty sand, trace gravel and organics were encountered in all boreholes, extending to depths ranging between 0.7 to 3.0 mbgs. Fill materials in BH20-2 contained domestic waste including glass and plastic. Below the fill material, native sand, silty sand and silt with trace gravel and peat was encountered to the maximum depth of investigation (6.1 mbgs). Bedrock was not encountered in any of the boreholes during this investigation. Based on the MECP Water Well Records reviewed as part of the Phase One ESA conducted by Golder, bedrock is anticipated at depths greater than 107 mbgs;
- The groundwater levels in the ten (10) monitoring wells installed during the current investigation ranged from 1.3 to 3.4 mbgs on May 14, 2020, corresponding to groundwater elevations ranging from 221.7 to 222.7 masl. Based on these elevations, the local groundwater flow on the eastern portion of the Site appears to be to the northeast, and the local groundwater flow on the western portion of the Site appears to be to the west/northwest. Based on the local topography

and previous reports completed for the Site and/or properties within the vicinity of the Site, the average groundwater flow direction is anticipated to be to the north towards Bunker's Creek. The groundwater flow direction may be influenced by underground utilities and associated fill materials used to backfill the utility trenches, fill materials associated with the back-filling of footprint of the former on-site building and former landfilling activities on the Site, and/or presence of nearby subsurface structures and infrastructure. Groundwater flow direction can also be influenced by seasonal fluctuations and can only be confirmed through long-term groundwater monitoring;

- Soil analytical results indicated the following exceedances of the Table 2 RPI SCS:
 - A mercury exceedance was identified in fill material collected from BH20-6, located within the former building footprint on the northern portion of the Site, at a depth of 0.8 to 1.5 mbgs. Additionally, the pH of this sample (9.95) was found to be outside the acceptable range (5 to 9). These impacts were delineated to a localized area by adjacent boreholes, and to a maximum depth of 1.5 mbgs; and,
 - PAH exceedances were identified in the fill material collected from BH20-2 and BH20-5, located within the area of former landfilling activities and the former building footprint, respectively, at depths ranging from 0.0 to 0.8 mbgs. These impacts were delineated to the northern portion of the Site by adjacent boreholes, and to a maximum depth of 3.0 mbgs.
- Groundwater analytical results indicated that groundwater at the Site met the Table 2 SCS.

Based on the findings of this Phase Two ESA, WSP presents the following conclusions and recommendations:

- Mercury and PAH-impacted materials were identified on the northern portion of the Site. These impacts likely result from historical landfilling activities in the vicinity of the Site which encroach onto the central-northern portion of the Site, and also from the use of poor-quality fill material to backfill the footprint of the former on-site building following demolition. These impacts have been determined to be limited to the fill materials on the northern portion of the Site and have been delineated to a maximum depth of 3.0 mbgs;
- A pH value of 9.95, which is outside the acceptable range of 5 to 9 for soils less than 1.5 mbgs, was identified in fill materials in one sample collected from a depth of 0.8 to 1.5 mbgs. This value is not considered to be representative of the conditions at the Site because pH values from two (2) additional samples collected from the fill and native material from the same borehole along with pH values from nine (9) additional samples collected from across the Site were within the acceptable range. In WSP's opinion, the single pH exceedance is an anomaly likely resulting from the heterogenous nature of fill materials. O. Reg. 153/04, subsection 48(2), permits the averaging of soil samples within a 2 m radius (collected from the same depth), when determining if a result exceeds the applicable standards. Therefore, it is recommended that additional samples be collected and submitted for pH analysis from a depth of 0.8 to 1.5 mbgs within 2 m of the original exceedance to be averaged as provided in the MECP technical guidance document *Environmentally Sensitive Areas: pH levels* to demonstrate that the pH at the Site is within the acceptable range, and that the Site should not be considered "environmentally sensitive" under O. Reg. 153/04 (as amended);
- Groundwater at the Site met the applicable Table 2 SCS based on the May 2020 groundwater sampling event; however, based on the May 14, 2020 groundwater elevations, a "groundwater divide" appears to exist below the Site. Should groundwater elevations fluctuate significantly on a seasonal basis, there is potential for a change in groundwater flow direction, which may result in groundwater that has flowed through the adjacent landfill sites to be directed onto the Site. As such, it is recommended that an additional groundwater monitoring and sampling event be completed in the fall to confirm groundwater flow direction and groundwater quality at the Site;
- As development to a more sensitive land use is proposed (residential), a Record of Site Condition (RSC) will be required for the Site in accordance with O. Reg. 153/04 (as amended). Remediation of soil impacts followed by confirmatory sampling will be required to support of filing of an RSC. Alternatively, if remediation is not considered feasible or desirable, a risk assessment can be conducted instead of, or in conjunction with remediation; and,
- All monitoring wells should be decommissioned in accordance with O. Reg. 903 when no longer required.

APPENDIX "B"

Geotechnical Review



June 5, 2020

City of Barrie
70 Collier Street
Barrie, ON
L4M 4T5

Dear Mr. David James,
Subject: 65 Vespra Street, Barrie, ON - Geotechnical Review

INTRODUCTION

WSP Canada Inc. (WSP) is pleased to provide a geotechnical review of our field investigation regarding the boreholes advanced at 65 Vespra Street, Barrie, Ontario.

The following letter provides a brief summary of the field investigation and the geotechnical findings based on our analysis.

PROJECT BACKGROUND / SITE DESCRIPTION

The property is located on the south side of Vespra Street between Innisfil and Sanford Streets, as shown on the **Site Location Plan – Figure 1**. The property is also located approximately 400 m west of Kempenfelt Bay and 100 m south of Bunkers Creek. The purpose of this geotechnical review is to provide subsurface information in regard to potential development at the site.

A **Borehole Location Plan - Figure 2**, is included with this letter for reference. The Borehole Plan includes additional boreholes advanced for an Environmental Assessment completed by WSP and reported under separate cover.

INVESTIGATION METHODOLOGY

The overall field investigation comprised the drilling of eleven (11) boreholes (BH20-1 to BH20-11), at the site, between May 11 and 13, 2020. The boreholes were drilled with hollow stem continuous flight auger equipment to a depth of approximately six (6) meters below the existing ground surface (mbgs).

Drilling equipment was supplied and operated by a drilling sub-contractor under the direction and supervision of WSP personnel. Geotechnical samples were retrieved at regular intervals with a 50 mm O.D. split-barrel sampler driven with a hammer in accordance with the Standard Penetration Test (ASTM D 1586) method from boreholes BH20-1, BH20-3, BH20-5, BH20-9 and BH20-10. This sampling method recovers samples from the soil strata, and the number of blows required to drive the sampler a



0.3 m depth into the undisturbed soil (SPT 'N' values) gives an indication of the compactness condition or consistency of the sampled soil material. The SPT 'N' values are indicated on the *Borehole Logs - Enclosures 1, 3, 5, 9 and 10*.

Soil samples were visually classified in the field and re-evaluated by senior personnel in our laboratory. All soil samples were tested for moisture contents. Laboratory Grain Size Analyses were carried out on representative samples and the results are provided in *Enclosures 12-15*.

Water level observations were made during the drilling and in the open boreholes upon the completion of drilling operations. Monitoring wells were installed in boreholes BH20-1 to BH20-6 and BH20-8 to BH20-11 as part of the investigation. WSP returned to the site, on May 14, after the drilling operations to obtain groundwater levels from each well.

SITE AND SUBSURFACE CONDITIONS

Details of the subsurface conditions encountered are presented on the Borehole Logs and summarized in the following sections. It is noted that subsurface conditions can change between and beyond the boreholes and the details provided below refer to soil conditions that were encountered at the borehole locations only.

SUBSURFACE CONDITIONS

Based on the results of the field investigation, the subsurface conditions at the borehole locations are generally comprised of a shallow surface cover overlying mixed non-cohesive fills and a non-cohesive soil predominantly comprised of sand and silt.

Surface Cover

A sandy topsoil was encountered at boreholes BH20-1, BH20-3 and BH20-11; a veneer of granular fill was observed at BH20-5 and BH20-6 and asphalt was present at BH20-8, BH20-9 and BH20-10.

The topsoil was moist, dark brown to black in colour and measured between 10 cm and 25 cm in thickness at the borehole locations. The granular fill was moist, brown in colour and measured between 5 cm and 10 cm in thickness at the borehole locations.

Asphalt was encountered at boreholes BH20-8, BH20-9 and BH20-10. The asphalt measured 5 cm in thickness at the borehole locations.

Surface cover quantities should not be calculated from the borehole information as large variations in depth may exist between boreholes. A detailed surface cover layer thickness survey is required to determine an accurate evaluation of quantity.

Fill

A non-cohesive fill was encountered at all boreholes. The fill was predominantly comprised silt and sand with trace to some gravel and occasional organic inclusions. The fill was moist, brown to gray in colour. The fill thicknesses at each of the borehole locations are summarized in the following table.



BOREHOLE	FILL THICKNESS (CM)	DEPTH (M)	DESCRIPTION
BH20-1	60	0.1 – 0.7	Sand with some silt trace gravel and organics
BH20-2	300	0.0 – 3.0	Sand with some silt and trace to some gravel
BH20-3	200	0.2 – 2.2	Sand to Silt and Sand with trace gravel
BH20-4	230	0.0 – 2.3	Sand with some silt and gravel
BH20-5	210	0.1 – 2.2	Silty sand to sand with trace gravel
BH20-6	220	0.1 – 2.3	Sand with some silt and gravel
BH20-7	150	0.0 – 1.5	Silty sand with trace gravel and organics
BH20-8	220	0.1 – 2.3	Sand to silt sand with trace t some gravel
BH20-9	140	0.1 – 1.5	Sand with some silt trace to some gravel
BH20-10	160	0.1 – 1.7	Sand to silty sand with some gravel
BH20-11	140	0.1 – 1.5	Sand with some silt some gravel

Fill quantities and composition should not be calculated from the borehole information as large variations in depth and composition may exist between boreholes. A detailed fill layer thickness survey is required to determine an accurate evaluation of quantity and composition.

As noted above, the fill material encountered in BH20-1 and BH20-7 included organic matter. The writer's previous experience at the site and a geotechnical investigation completed by others for the site have established that peat is present below the fill.

The measured SPT 'N' values in the fill varied between 0 and 24 blows per 0.3 m of penetration, indicating that the Compactness Condition of fill varied from very loose to compact and was likely placed without uniform compaction control.

The natural moisture content of the fill varied from 3% to 25%, corroborating the moist to saturated state observed during drilling.

Non-Cohesive Soil

A deposit of non-cohesive soil predominantly comprised of silt and sand was encountered below the fill and extending beyond the final depths investigated of 6.1 mbgs. The non-cohesive soil was generally found to be saturated, brown and included trace to some gravel and occasional inclusions of peat.

Four samples of the non-cohesive soil were recovered and returned to our laboratory for mechanical analysis and visual review. Based upon grain size analyses the following ranges of gravel, sand and silt percentages were determined:

- Gravel: 0% to 11%
- Sand: 66% to 88%
- Fines (Silt & Clay): 11% to 23%

The measured SPT 'N' values in the non-cohesive soil varied between 0 and 42 blows per 0.3 m of penetration, indicating that the Compactness Condition of non-cohesive soil varied from very loose to dense.



The natural moisture content of the non-cohesive soil varied from 6% to 28%, corroborating the predominantly saturated state observed during drilling.

Groundwater

A summary of groundwater levels measured in the monitoring wells on May 14, 2020 at the site are summarized below.

BOREHOLE	GROUNDWATER DEPTH (MBGS)	GROUNDWATER ELEVATION (M)	MEASUREMENT SOURCE
BH20-1	1.4	222.5	Monitoring Well
BH20-2	1.6	222.4	Monitoring Well
BH20-3	1.3	222.2	Monitoring Well
BH20-4	2.4	222.5	Monitoring Well
BH20-5	1.9	222.4	Monitoring Well
BH20-6	1.9	222.3	Monitoring Well
BH20-8	1.9	221.8	Monitoring Well
BH20-9	3.4	222.4	Monitoring Well
BH20-10	1.7	221.9	Monitoring Well
BH20-11	2.0	222.7	Monitoring Well

The hydraulic gradient of the groundwater is ultimately towards the east and Kempenfelt Bay *Figure 3*.

DISCUSSION / RECOMMENDATIONS

General

The fill and underlying non-cohesive soil included occasional matter and/or peat. Based upon SPT results the Compactness Condition of the subsurface soil varied from very loose to loose at depths in excess of 3.0 mbgs. Furthermore, the soil at the site was saturated as groundwater was encountered as shallow as 1.3 mbgs corresponding with an elevation of 222.5 m.

Foundations

The shallow subsurface soil at this site is generally unsuitable for conventional foundations. BH20-9 and BH20-10 indicate that low bearing strip footings may be founded on the native undisturbed soil at a minimum depth of 3.0 mbgs. However, significant groundwater control should be anticipated.

Consideration could be given to the removal and replacement of the existing fill and loose inorganic native soil with engineered fill. However, significant groundwater control would be required for excavations anticipated to be in excess of 4.0 mbgs.

Regardless, all unsuitable soil must be removed within the building area extending a minimum five meters beyond the building perimeter for the construction of the engineered fill pad. The fill must be comprised



of approved inorganic fill. Some in-situ soil is considered suitable for reuse.

The area to be filled must be stripped of all existing fill and unsuitable material, the subgrade prepared and heavily proof rolled with a 2.1 m wide vibratory roller, under supervision of WSP. Any poorly performing areas should be sub-excavated and replaced with either granular earth fill approved by WSP or imported Granular B, Type I material conforming to the requirements of OPSS.

Following approval of the subgrade, the proposed grading fill may be added in thin lifts that are heavily compacted to 100% Standard Proctor Dry Density under the supervision of WSP.

A detailed Engineered Fill Specification is appended. Provided the above criteria are followed, the structure may be designed using SLS soil resistance of 150 kPa.

Other Comments on Foundations

Strip and spread foundations designed to the specified bearing capacities at the serviceability limit states (SLS) are expected to settle less than 25 mm total and 13 mm differential.

All footings exposed to seasonal freezing conditions should be provided at least 1.5 m of earth cover or equivalent thermal insulation against frost.

Variations in the soil conditions are expected in between the borehole locations, and during construction, the geotechnical resistances should be confirmed by experienced WSP site personnel.

Where it is necessary to place footings at different levels, the upper footing must be founded below an imaginary 10 horizontal to 7 vertical line drawn up from the base of the lower footing. The lower footing must be installed first to help minimize the risk of undermining the upper foundations.

During winter construction, foundations and slab on grades must not be poured on frozen soil. Foundations must be adequately protected at all times from cold weather and freezing conditions.

It should be noted that the recommended bearing capacities have been calculated by WSP from the borehole information for the design stage only. The investigation and comments are on-going as new information regarding the underground conditions becomes available. For example, more specific information is available with respect to conditions between boreholes when foundation construction is underway. The interpretation between boreholes and the recommendations of this report must therefore be checked through field inspections provided by WSP to validate the information for use during the construction stage.

It is essential that free-draining fill material be used as backfill against foundation walls. Preliminary analyses of the native inorganic sand and gravel soil indicate it would be favourable for reuse as foundation wall backfill. It is recommended that the native soil be stockpiled and re-analyzed for geotechnical and environmental suitability prior to reuse. Alternatively, an OPSS Granular 'B' type fill is recommended.

Backfilling of the footing wall excavations is recommended to be placed in 200 mm thick lifts, uniformly compacted to 100% SPMDD to proposed sub-grade elevations.

TEMPORARY EXCAVATIONS AND GROUNDWATER CONTROL

Based upon the subsurface conditions at the borehole locations, excavations can be carried out with heavy hydraulic back-hoes. It is recommended that provision be carried in the contract for the excavation and disposal of obstructions on site, including cobbles and boulders.



All temporary excavations must be carried out in accordance with the Occupational Health and Safety Act (OHSA). In accordance with OHSA, the native soil would be classified as Type 3 soil, above the water table and Type 4 below water. All excavated spoil should be placed at least the depth of the trench away from the edge of the trench for safety reasons.

Since groundwater was encountered during drilling at shallow depths, it is anticipated that significant groundwater control for temporary excavations in excess of 1.5 mbgs over a majority of the site will be required.

DEEP FOUNDATIONS

Consideration could also be given to a system of deep foundations; however, additional deep boreholes will be required. Furthermore, it is recommended that the removal of buried peat should be anticipated in portions of the northern half of the site.

CLOSURE

We trust that this letter provides the required information at this time. Should there be any questions or concerns please contact our office.

Kind regards,



Kent Malcolm, P.Eng.
Senior Geotechnical Engineer

Reviewed By,



Jay Dolan, P.Eng.
Senior Environmental Engineer

WSP ref.: 201-04334-00



APPENDIX "C"

65 Vespra Street and 70 & 72 Victoria Street

Legal Description:

LT 1 E/S INNISFIL ST, 2 E/S INNISFIL ST PL 245 BARRIE; PT LT 3 E/S INNISFIL ST, 4 E/S INNISFIL ST PL 245 BARRIE AS IN RO242363; LT 1 W/S SANFORD ST, 2 W/S SANFORD ST PL 245 BARRIE; PT LT 3 W/S SANFORD ST PL 245 BARRIE AS IN RO186871 S/T INTEREST IN RO186871, T/W RO186871 EXCEPT NLY 5 FT THEREIN; BARRIE AND BEING ALL OF PIN 587970038 (LT)

PT LT 3 E/S INNISFIL ST PL 245 PT 1 51R35231; BARRIE AND BEING ALL OF PIN 587970079 (LT)

PT LT 4 E/S INNISFIL ST PL 245 BARRIE AS IN RO1346666; BARRIE AND BEING ALL OF PIN 587970023 (LT)

