

# FOTENN

**4725 SPRATT ROAD AND 4623  
SPRATT ROAD (SOUTH  
PARCEL)**

**DRAFT INTEGRATED  
ENVIRONMENTAL REVIEW  
STATEMENT (IERS)**



August 02, 2019

Integrated  
Environmental Review  
Statement



Prepared for:



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Fotenn Consultants Inc. (Fotenn) has been retained by Claridge Homes (Claridge) to prepare an Integrated Environmental Review Statement (IERS) in support of the proposed Plan of Subdivision for 4725 Spratt Road and the portion of 4623 Spratt Road located south of the Bus Rapid Transit (BRT) Corridor in the Riverside South community of the City of Ottawa.

Claridge Homes proposes a subdivision consisting of approximately 265 to 300 townhouse dwelling units. The development, as well as all supporting infrastructure including roadways and municipal services, will be integrated with adjacent developments to the north and west.

The requirements for an IERS are outlined in Section 4.7.1- *Integrated Environmental Review to Assess Development Applications* of the City of Ottawa Official Plan which states:

**Policy 4.7.1 (1)**

*Subdivision, and site plan and rezoning applications requiring an Environmental Impact Statement, Tree Conservation Report or landform feature assessment, will be accompanied by an integrated environmental review statement demonstrating how all the studies in support of the application influence the design of the development with respect to effects on the environment and compliance with the appropriate policies of section 4. The appropriate policies and studies will be identified through pre-consultation at the beginning of the design and review process.*

**Policy 4.7.1 (2)**

*The integrated environmental review statement will provide:*

- *A brief overview of the results of individual technical studies and other relevant environmental background material;*
- *A graphic illustration, such as an air photo, summarizing the spatial features and functions (e.g. natural vegetation, watercourses, significant slopes or landform features, recharge/infiltration areas) as identified in the individual studies;*
- *A summary of the potential environmental concerns raised, the scope of environmental interactions between studies, and the total package of mitigation measures, including any required development conditions and monitoring, as recommended in individual studies;*
- *A statement with respect to how the recommendations of the support studies and the design with nature approach have influenced the design of the development;*
- *An indication that the statement has been reviewed and concurred with by the individual sub consultants involved in the design team and technical studies; and,*
- *A description of how the principles of Design Objective 7 (Section 2.5.1) to maximize the energy-efficiency of development and to promote sustainable design that reduces consumption, energy use and carbon footprint of the built environment have been considered. A sustainable design checklist will be prepared to assist in this description.*



## 2.0 SITE AND PROJECT DESCRIPTION

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### 2.1 Description of Site and Project

The subject lands, outlined in blue in Figure 1 below, are located to the east of Spratt Road, just south of a planned BRT corridor. The subject lands include all of 4725 Spratt Road and the portion of 4623 Spratt Road located south of the BRT corridor. The portion of 4623 Spratt Road located north of the BRT corridor is subject to separate Plan of Subdivision (D07-16-19-0010) and Zoning By-law Amendment (D02-02-19-0032) applications.

The subject lands are legally described as Part of Lot 22, Concession 1 (Rideau Front) and have a gross area of 10.39 hectares. The subject lands surround two (2) small hold-out lots, each containing one detached dwelling. The hold-out lots are known municipally as 4661 and 4729 Spratt Road.

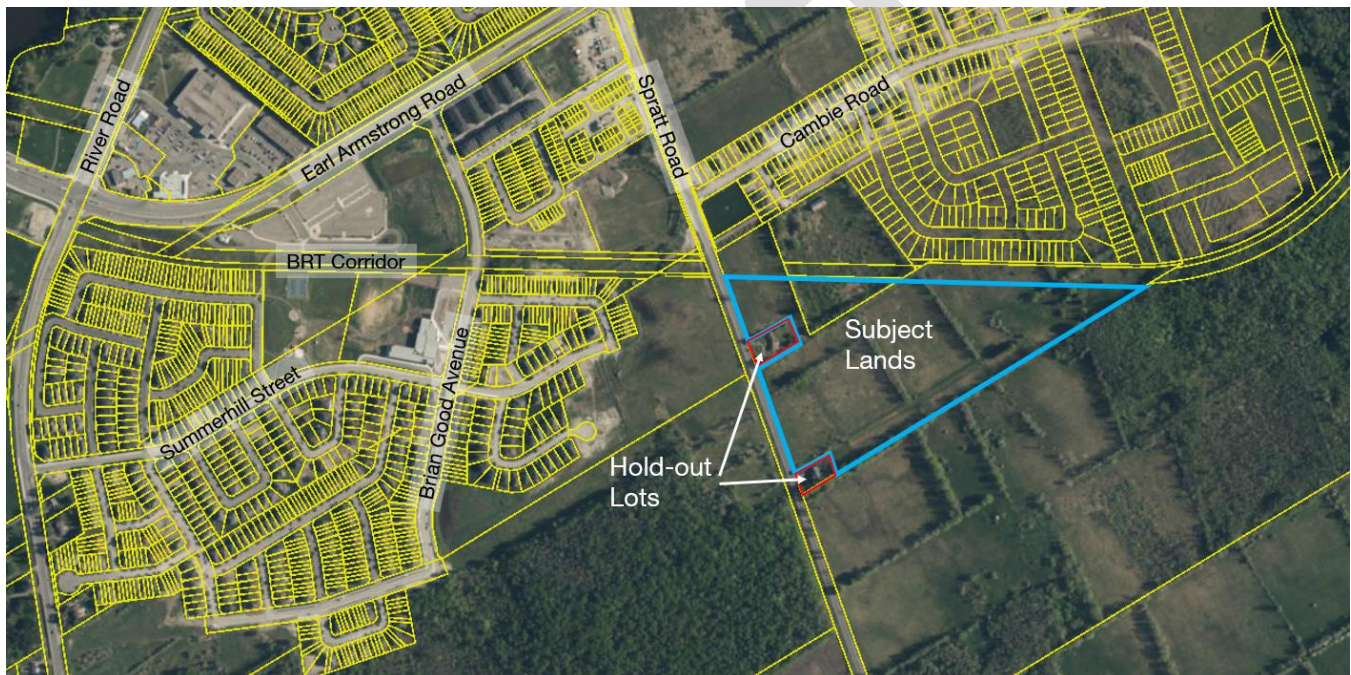


Figure 1: Location of Subdivision

The subject lands slope downward gradually from east to west, from elevations of approximately 95 metres to approximately 92 metres. The lands are currently vacant and vegetated with tall grass, shrub and trees. The subject lands were previously occupied by a farmstead from at least 1976 until 2011 and were abandoned thereafter. Between 2011 and 2014 a farmhouse, a barn, and other structures in the southeast corner of the site were removed and no structures remain on the site.

According to Schedule L1 – *Natural Heritage System Overlay (East)* in the Official Plan, no portion of the City’s Natural Heritage System is located on the subject lands. Spratt Road Woods is the closest Natural Heritage System, which is located to the southwest of the subject lands.

The subject lands are located in the “Airport Vicinity Development Zone” (AVDZ) on Schedule K- *Environmental Constraints* of the Official Plan. Section 4.8.6- *Land-Use Constraints Due to Airport and Aircraft Operations* contains policies related to development within the AVDZ, including the requirement for a detailed Noise Control Study. No other environmental constraints are shown for the subject lands or adjacent lands on Schedule K.

There are no Life Science Areas of Natural and Scientific Interest or Provincially-significant Wetlands in the general area, with the closest features (part of the Provincially Significant Leitrim Wetlands) located

approximately six (6) kilometers to the northeast of the subject lands. No unevaluated wetlands are mapped for the subject lands, as shown on the 2011 geoOttawa layer, with much of the Spratt Road Woods to the southwest, west of Spratt Road, shown as an unevaluated wetland on this layer.

No watercourses or municipal drains are shown on or adjacent to the subject lands, with the Thomas Gamble Municipal Drain about 400 metres to the east of the east edge of the subject lands. Intermittent ditches are mapped for the south portion of the site, but these ditches are not continuous and are not connected to features with aquatic habitat potential. IBI (2019) reports that the site drainage is picked up by the Spratt Road side ditch where it is routed north to an existing storm sewer.

The soil conditions described in the Geotechnical Investigation indicate that there is generally a thin layer of topsoil underlain by silty sand to clayey silt in the western and northern portions of the subject lands. Groundwater levels were found to be between 0.98 and 2.80 metres below the ground elevation, with the long-term groundwater level anticipated to be at a 2 to 3 metres.

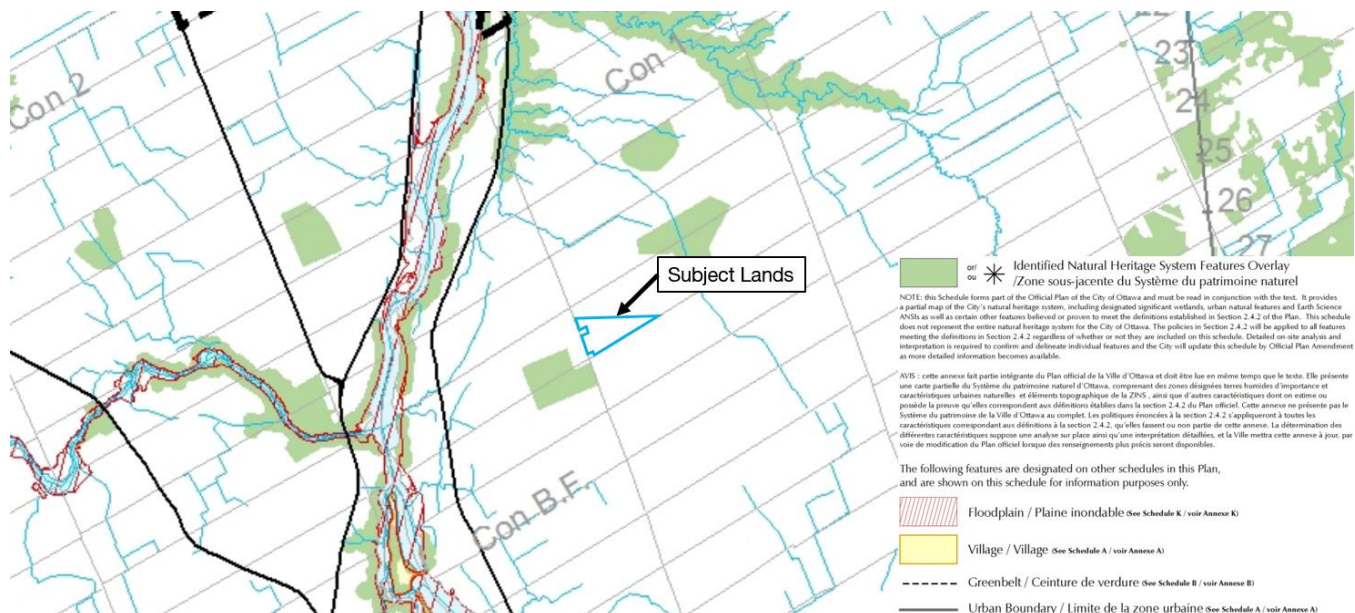


Figure 2: Excerpt from Schedule L1 – Natural Heritage System Overlay (East) of the Official Plan



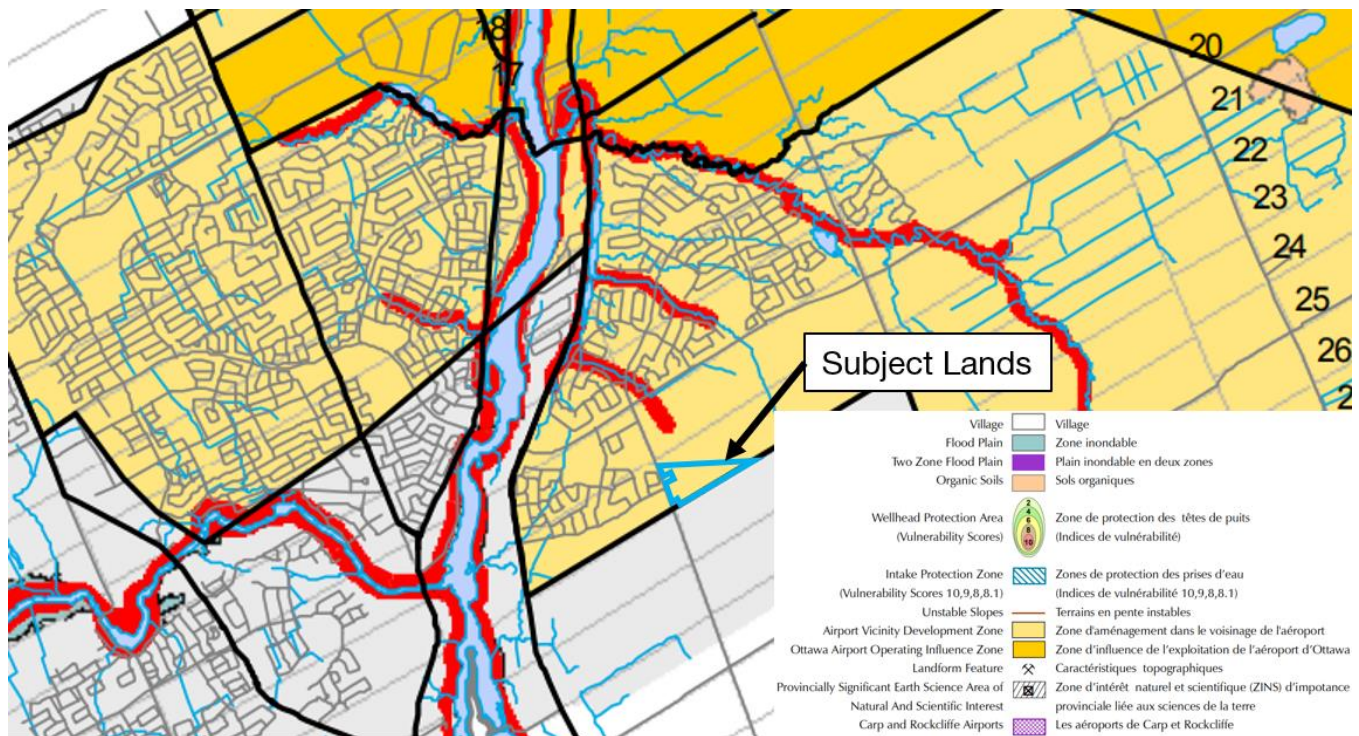


Figure 3: Excerpt from Schedule K – *Environmental Constraints* of the Official Plan

## 3.0 SUMMARY OF TECHNICAL STUDIES

This section provides an overview of the technical studies that were completed in support of the Draft Plan of Subdivision for the development of the subject lands. These studies fall into three groups: engineering studies, planning studies, and environmental studies.

A summary describing the existing environmental conditions and identified potential environmental effects related to the proposed development is presented for each study, as required in Section 4.7 of the Official Plan. Each summary uses the exact language and wording in the technical study, where possible.

### 3.1 Engineering Studies

#### 3.1.1 Transportation Impact Assessment

A Transportation Impact Assessment (TIA) was prepared by IBI Group (November 21, 2018) in accordance with the Transportation Impact Assessment Guidelines. The study currently includes screening and scoping components.

An initial screening was completed to confirm the need for a TIA by reviewing Trip Generation, Location, and Safety triggers. As the proposed development meets all three (3) of these triggers, the need to undertake a TIA is confirmed.

The study's scoping component describes both the existing and planned conditions in the vicinity of the development and defines such study parameters as the study area, analysis periods and horizon years of the development. It also provides an opportunity to identify any scope exemptions that would eliminate elements of scope described in the TIA Guidelines but not relevant to the development proposal, based on consultation with City staff. The study identifies the following TIA modules that are not applicable to this study: circulation and access design review, and parking (supply and spillover parking) design review.

Throughout the development of a TIA report, each of the four study components (screening, scoping, forecasting, and analysis) are submitted in draft form to the City of Ottawa and undergo a review by a designated Transportation Project Manager. Any comments received are addressed to the satisfaction of the City's Transportation Project Manager before proceeding with subsequent components of the study.

Dependent on the findings of this report, the complete submission of this TIA may also require Functional Design Drawings of recommended roadway improvements to support a Roadway Modification Application (RMA). The submission may also require a post-development Monitoring Plan to track performance of the planned TIA Strategy. The need for these two elements will be confirmed through the analysis undertaken for this report.

#### 3.1.2 Assessment of Adequacy of Public Services

An Assessment of Adequacy of Public Services was prepared by IBI Group (February 2019) to assess the adequacy of public services for the subject lands. The report reviewed major municipal infrastructure including water supply, wastewater collection and disposal and management of stormwater. The report also includes a Sediment and Erosion Control Plan.

While some infrastructure needed to help service the subject lands already exists, the development plan will include expansion and extension of those infrastructure to adequately service the site with water supply, wastewater collection and disposal and management of stormwater runoff. The extension of the existing watermain through the subject site will provide a reliable source of both drink water and fire flows. The ultimate wastewater outlet is already in place. A new stormwater management facility, Pond 5, is currently under construction and once completed will provide the necessary treatment for runoff from the subject site. Development of the subject property will include the recommended storm sewer plan. Therefore, including both existing and proposed extension of major infrastructure there will be suitable public services put in place to service the subject site.



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From an assessment of major municipal infrastructure perspective, the report recommends that the development application be accepted and that the development of the property move forward.

### **3.1.3 Noise Control Feasibility Study**

A Noise Control Feasibility Study was prepared by IBI Group (February 2019) to determine the impact of roadway traffic on the subject lands. The report deals with the expected noise levels in the development and any required noise control measures.

The report notes that the study area is primarily subject to traffic noise from the extension of Spratt Road and Street No. 1 which is the extension of Borbridge Avenue. The future BRT corridor is adjacent to the subject lands. The subject lands are located within the AVDZ and there are no rail lines within 500 metres.

The report outlines the impact of roadway and BRT noise on the proposed development. The exact location of residential units requiring noise warning clauses, ventilation, air conditioning requirements, acoustical review/design of building components, and the location and size of noise barriers will be determined during the detailed design phase when site plans and grading plans are finalized.

### **3.1.4 Geotechnical Study**

A Geotechnical Investigation was prepared by Paterson Group (December 10, 2018) to determine the subsurface soil and groundwater conditions by means of boreholes, and to provide geotechnical recommendations for the design of the proposed development including construction considerations which may affect its design. The field investigation took place in November of 2018.

Generally, the soil conditions encountered at the test holes on the western and northern portions of the subject lands (boreholes BH 1, BH 2, BH 7, BH 8, and BH 9) consist of a thin topsoil layer underlain by silty sand to clayey silt. Where encountered, the silty sand to clayey silt had a thickness of approximately 0.9 to 3.5 metres.

A silty clay deposit was encountered directly underlying the topsoil in boreholes BH 3 and BH 4, and underlying the silty sand to clayey silt in boreholes BH 1, BH 2, BH 7, BH 8, and BH 9. The silty clay was observed to consist of a very stiff to firm, brown to grey silty clay, and, where penetrated, had an approximate thickness of 1.8 to 3.7 m.

A glacial till deposit was encountered underlying the silty sand, clayey silt, and/or silty clay at approximate depths ranging from 0.6 m at the southern end of the site to 5.3 m at the northern end of the site. The glacial till deposit was generally observed to consist of a compact to very dense, grey silty sand with gravel, cobbles, and boulders.

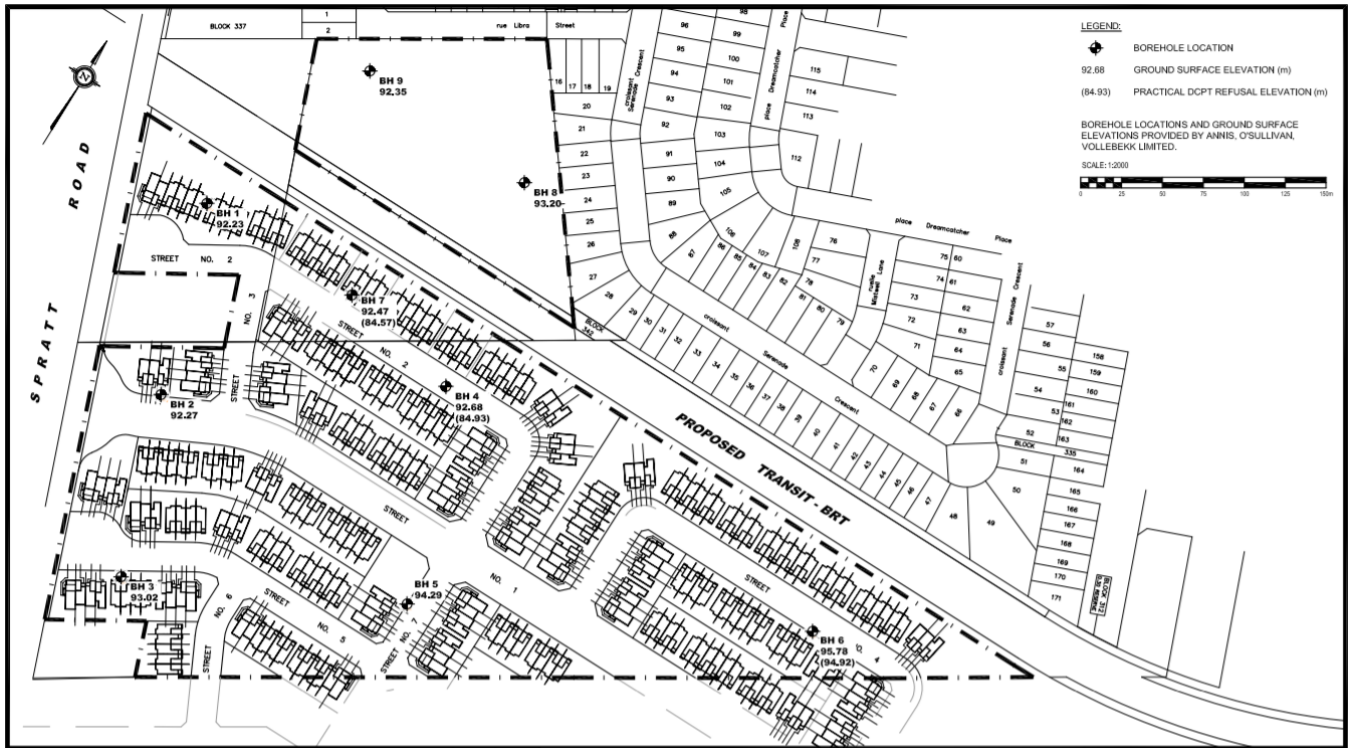


Figure 4: Excerpt from Drawing PG4730-1: Test Hole Location Plan of Paterson Group's Geotechnical Investigation

Based on available geological mapping, the subject lands are located in an area where the bedrock consists of interbedded sandstone and dolomite of the March formation with drift thicknesses of 5 to 15 m.

The groundwater level varies between 0.98 to 2.8 metres in depth. It should be noted that surface water can become perched with a backfilled borehole, which can lead to higher than normal groundwater level readings. Further, groundwater levels are subject to seasonal fluctuations; therefore, the groundwater level could vary at the time of construction.

From a geotechnical perspective, the subject site is adequate for the proposed residential development. It is expected that low rise, wood framed buildings could be founded on conventional spread footings placed on an undisturbed, silty sand, silty clay, glacial till or surface-sounded bedrock bearing surface.

Should existing grades be raised at the site for the proposed development, it is expected that several options, such as engineered fill or well graded blast rock, would act as suitable subgrade material for the proposed buildings provided the material is adequately placed and approved by the geotechnical consultant at the time of placement.

The proposed development will be subjected to grade raise restrictions. The report recommends a grade raise limitation of up to 1.5 metres for the subject lands. Based on groundwater level observations, a sub-floor drain system for the proposed buildings with basements is recommended.

Paterson completed a soils review of the site to determine applicable tree planting for trees planted within a public right-of-way. Based on the results of the review, two (2) tree planting setback areas are present within the subdivision area (Area 1 and Area 2). Area 1, a low to medium sensitivity area which makes up the northwest

portion of the site, requires a 4.5 metre tree planting setback. Area 2, a high sensitivity area which makes up the rest of the site, requires a 7.5 metre tree planting setback.

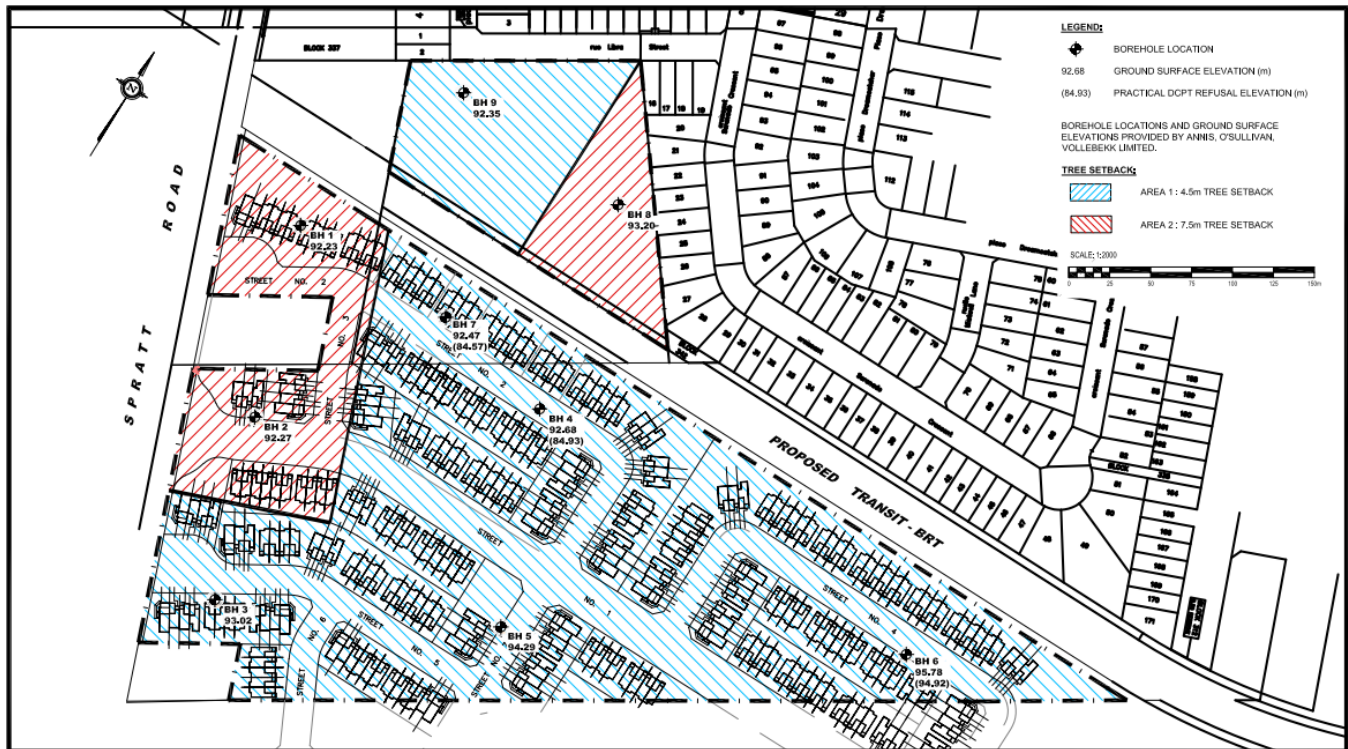


Figure 5: Excerpt from Drawing PG4730-3: Tree Planting Setback Recommendations of Paterson Group's Geotechnical Investigation

Overall, the subject site is suitable for the proposed subdivision development from a geotechnical perspective, provided the recommendations within the report are adhered to.

## 3.2 Planning Studies

### 3.2.1 Planning Rationale

Fotenn Consultants Inc. prepared a Planning Rationale (August 2, 2019) in support of the Plan of Subdivision and Zoning By-law Amendment applications. The rationale provides an analysis of the applicable policy and regulatory framework. The Rationale also provides a description of the proposed development, similar to the summary provided in Section 2 of this report.

The required planning applications for the proposed development are a Plan of Subdivision application and a Zoning By-law Amendment application. The Zoning By-law Amendment seeks to re-zone the property from Development Reserve (DR) to a Residential Third Density Zone, Subzone Z (R3Z).

Overall, the proposed development conforms to the general intent of the applicable "General Urban Area" Official Plan designation and advances the City's strategic initiatives. The development also implements the Riverside South Community Design Plan designation and general policies, which envision low and medium density residential uses for the lands.



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### **3.3 Environmental Studies**

#### **3.3.1 Phase I Environmental Site Assessment**

The purpose of the Phase I Environmental Site Assessment (ESA) prepared by Paterson Group (October 23, 2018) was to research the past and current use of the subject lands and Phase I study area and to identify any environmental concerns with the potential to have impacted the Phase I property.

According to the historical research, the subject site was occupied by a farmstead from at least 1976 until 2011. The farmstead and associated buildings were removed between 2011 to 2014 and the site has been vacant since. Neighbouring land uses were for residential and agricultural purposes. No potential contaminating activities were identified with the historical use of the subject site or surrounding lands.

Following the historical research, a site visit was conducted. The subject site is vacant with tall grass, shrub and trees. The neighbouring properties in the Phase I study area were observed from publicly accessible roadways. No potentially contaminating activities were identified on the subject site or in the Phase I study area. Therefore, no areas of potential environmental concern with respect to the Phase I property were identified.

Based on the results of the assessment, it was determined that a Phase 2 ESA is not required.

#### **3.3.2 Environmental Impact Statement and Tree Conservation Report**

An Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) were prepared by Muncaster Environmental Planning Inc. (June 4, 2019). The report addresses the existing vegetation, potential tree retention, Species at Risk and other natural features. The major objective of the study is to assess potential impacts on the natural features and functions of the subject site and surrounding area.

The subject lands have been in agricultural use for an extended period. Between 2011 and 2014 the farmhouse, barn, and other structures in the southeast corner of the site were removed and no structures remain on the subject lands. More recently the subject lands have been left fallow. Deciduous hedgerows are common between the agricultural fields.

With the exception of butternut (an endangered Species at Risk), no natural heritage features, as identified in the Provincial Policy Statement, are on or adjacent to the site. Four (4) very small butternut stems, each 1cm diameter at breast height (dbh), were observed on June 1<sup>st</sup>, 2019 in the southeast corner of the site by a butternut health assessor. As some of the stems displayed hybrid characteristics and are in immediate proximity to black walnut, genetic analysis will be completed on these stems. If the analysis indicates these stems are pure butternuts, their removal will be compensated for with off-site plantings of two pure butternuts for each pure butternut removed or the compensation process that is in place at the time of removal. No activities that may harm these stems is permitted in the vicinity of the butternuts until the genetic testing identifies them as not pure butternuts or the off-site planting compensation is registered.

Due to the density of the development and required urban servicing and associated grading, both on and to the south of the site, no tree retention is anticipated for the subject lands. As the Plan of Subdivision is designed to incorporate adjacent lands to the south, and residential development is already present or under construction to the north, west and east, there is no potential for connections to adjacent natural features. This isolation in combination with the dominance of ash trees results in very limited conservation value for the on-site vegetation. Macro grading plans in IBI (2019) indicate grade raises in the vicinity of one metre for most of the site.



Figure 6: Existing Vegetation Plan, taken from Tree Conservation Report prepared by Muncaster Environmental Planning

## POTENTIAL CONCERNS, MITIGATION MEASURES AND IMPLEMENTATION

### 4.1 Potential Concerns

The various technical studies prepared in support of the Plan of Subdivision and Zoning By-law Amendment applications, as summarized in Section 3 above, have each described existing environmental conditions and identified potential environmental effects related to the proposed development. As required in Section 4.7.1 of the Official Plan, the scope of environmental interactions between studies is summarized in Table 1 below.

Table 1: Environmental Interactions between Technical Studies

	Assessment of Adequacy of Public Services	Geotechnical Study	Noise Control Feasibility Study	Planning Rationale	Tree Conservation Report	Phase I Environmental Site Assessment	Environmental Impact Statement	Transportation Impact Assessment
Noise & Vibration		X	X	X	X		X	
Groundwater		X		X			X	
Surface Water								
Terrestrial Ecology				X			X	
Geotechnical	X	X		X	X		X	
Services	X	X		X			X	

### 4.2 Mitigation Measures and Implementation of Commitments

#### 4.2.1 Protection of Vegetative Cover

##### Anticipated Effects

As the Plan of Subdivision is designed to incorporate adjacent lands to the south, and residential development is already present or under construction to the north, west and east, there is no potential for connections to adjacent natural features. This isolation in combination with the dominance of ash trees results in very limited conservation value for the on-site vegetation. Removal of tree cover within the site is not anticipated to result in a significant negative affect to the environmental features and functions of the general area. As an existing woodland edge exists to the south of the east edge of the site and no forests are on-site, development of the site will not create a new forest edge. As the lands to the south of this site are proposed for urban development in the short term, with construction estimated to begin in 2020, no mitigation measures to protect and preserve the trees to the south of the east site edge are considered necessary. Co-owned trees or those with critical root zones that extend onto the site are not a concern to the south, east or north due to future development.

Due to the density of the development and required urban servicing and associated grading, both on and to the south of the site, no tree retention is anticipated for the site. Macro grading plans in IBI (2019) indicate grade raises in the vicinity of one metre for most of the site.



Although many of the trees are in poor condition, there is still some ecological function provided such as local wildlife habitat and climate, air quality, wildlife, and nature appreciation benefits. Potential impacts during construction of the residential development and associated removal of trees and other vegetation includes impacts on wildlife, increased erosion and release of sediments and other potential contaminants from truck traffic and construction activity, harm to wildlife remaining in the work area during construction, and impacts associated with an increase in noise, dust and light. The following mitigation measures are designed to address these potential impacts.

### Required Mitigation Measures

A number of mitigation methods during the construction phase of the project are proposed in the Environmental Impact Statement and Tree Conservation Report. These include:

- Prior to their removal, the four small butternuts in the southeast corner will be genetically tested and compensated for with off-site plantings as required. If they are pure butternuts, no activities are permitted that may damage the butternut stems until the compensation is registered or the process in place at the time of removal is followed;
- To protect breeding birds, no tree removal should occur between April 15<sup>th</sup> and August 15<sup>th</sup>, unless no active nests have been identified within the vegetation to be removed. Tree removal should begin in the north portion of the site and extend to the south, allowing wildlife to relocate to the south. Prior to tree removal, the area should be pre-stressed to encourage wildlife to leave the area;
- If any trees can be retained, they are to be protected with sturdy temporary fencing. The root system, trunk, or branches of the trees to be retained are to be protected and not damaged. Exposure of roots of trees to be retained should be kept to a minimum, and the roots are to be kept moist. Any roots that must be cut are to be cut cleanly. Overhanging branches from retained trees, including those adjacent to the site, that may be damaged during construction are to be pruned by a qualified arborist prior to construction. Exhaust fumes from all equipment during construction will not be directed towards the canopy of the adjacent retained trees;
- Where the crucial root zones of adjacent trees on the hold-out lots extend onto the site, where possible tree protection fencing is to be installed along the outer edge of the root zone. If too much of the root zone will be damaged by excavations and grading for the development, the adjacent landowner is to be consulted and the removed tree replaced with new plantings of native tree species in locations approved by the adjacent landowner.
- Avoiding the planting of trees and shrubs with high water demands in clay soils, in accordance with recommendations provided in the Geotechnical Investigation;
- Due to silty clay soils, tree planting setback recommendations provided by Paterson Group's geotechnical investigation should be followed;
- The extent of exposed soils is to be kept to a minimum at all times. Re-vegetation of exposed, non-developed areas with native species is to be achieved as soon as possible to reduce surface erosion;
- Silt fencing is to be properly installed around the perimeter of the work area. In addition, where required seepage barriers will be installed to OPSD requirements. Any dewatering of groundwater is to be properly treated before release or directed to the sanitary system;
- The contractor is to be aware of potential Species at Risk in the vicinity of the site including butternut, bobolink and eastern meadowlark. Any Species at Risk sightings are to be immediately reported to the

project biologist and the Ministry of the Environment, Culture and Parks and activities modified to avoid impacts until further direction by the Ministry;

- Checking the work area for wildlife prior to beginning work each day and implementing appropriate relocation measures where necessary;
- General provisions for proper site management include: not harming, feeding, or unnecessarily harassing wildlife; driving slowly and avoiding hitting wildlife; maintaining a tidy site free of garbage and food wastes; ensuring proper site drainage so that standing water does not accumulate on site; and properly securing any stockpiles with silt fencing;
- Municipal by-laws and provincial regulations for noise will be followed and utilities will be located in the vicinity of the site prior to construction;
- Waste will be managed in accordance with provincial regulations;
- Snow removal is not to be directed to any retained trees or other natural features.

#### **4.2.2 Erosion Prevention and Protection of Surface Water**

##### **Anticipated Effects**

During construction, existing conveyance systems and water courses can be exposed to sediment loading. Development of a subdivision such as this project can potentially create deleterious material which can enter the natural environment and gain access to fish and amphibian habitat.

##### **Required Mitigation Measures**

In order to prevent site generated sediments from entering the environment, an Erosion and Sedimentation Control Plan (ESCP) will be implemented prior to development. Although a generic ESCP can be developed as part of this report and subsequent Design Briefs, the final plan will be developed and implemented by the Owner's general contractor.

The erosion and sedimentation control strategy for the subject lands could include erection of silt fences, straw bale barriers and rock check dams. The exposure of soils should be minimized and re-vegetation with native species should be undertaken as soon as possible. These measures will ensure protection of both adjacent developments and the natural environment adjacent to and downstream of the site.

A copy of a potential ESCP is included in the Assessment of Adequacy of Public Services report.

Other elements of an ESCP could also include installation of bulkhead barriers at the nearest existing downstream manholes to ensure deleterious material does not gain access to those sewers and potentially the downstream pump station(s) and/or Pond 1.

#### **4.2.3 Protection of Endangered and Threatened Species**

##### **Anticipated Effects**

Butternut was the only Species at Risk observed on or adjacent to the site. No other Species at Risk were reported for the adjacent sites. The four small butternuts in the southeast corner of the site will be removed and compensated for with off-site plantings if the butternuts are not hybrids. The remaining meadow habitat is too small for grassland Species at Risk (none were observed during a morning late May survey) and no potential structures for chimney swift or barn swallow are present.

Tree removal will occur as the deciduous hedgerows and the cultural woodland are removed. Although many of the trees are in poor condition, there is still some ecological function provided such as local wildlife habitat and climate, air quality, wildlife, and nature appreciation benefits. Potential impacts during construction of the residential development and associated removal of trees and other vegetation includes impacts on wildlife, increased erosion and release of sediments and other potential contaminants from truck traffic and construction activity, harm to wildlife remaining in the work area during construction, and impacts associated with an increase in noise, dust and light.

Due to the adjacent existing and imminent urban residential developments, there is no potential for connections to adjacent natural features. This isolation in combination with the dominance of ash trees results in very limited conservation value for the on-site vegetation. Removal of tree cover within the site is not anticipated to result in a significant negative affect to the environmental features and functions of the general area.

As an existing woodland edge exists to the south of the lands and no forests are onsite, development of the subject lands will not create a new forest edge. There appears to be no need to protect and retain trees to the south of the subject lands, as this area is also proposed for urban residential development in the near future. Co-owned trees or those with critical root zones that extend onto the site are not a concern to the south, east or north due to future development.

Due to the density of the development and required urban servicing and associated grading, both on and to the south of the site, no tree retention is anticipated for the site. Macro grading plans in IBI (2019) indicate grade raises in the vicinity of one metre for most of the site.

### Required Mitigation Measures

The proposed mitigation measures include the following:

- It is recommended that a further Butternut survey of the study area be conducted during the leaf-out period;
- To protect breeding birds, no tree removal should occur between April 15th and August 15th, unless a breeding bird survey conducted by a qualified biologist within five days of the woody vegetation removal identifies no active nests in the vegetation to be removed. Tree removal should begin in the west portion of the site and extend to the east, allowing wildlife to relocate to the south and east. Prior to tree removal, the area should be prestressed by traversing the site with a loud noise such as an excavator horn. This will encourage wildlife to leave the area;
- The contractor is to be aware of potential Species at Risk in the vicinity of the site including butternut, bobolink and eastern meadowlark. Any Species at Risk sightings are to be immediately reported to the project biologist and the Ministry of the Environment, Culture and Parks and activities modified to avoid impacts until further direction by the Ministry;
- Prior to beginning work each day, wildlife is to be checked for by conducting a thorough visual inspection of the work space and immediate surroundings. Any turtles, snakes, or other sensitive wildlife in the work areas are to be relocated to the Armstrong Road South Woods to the east. Animals should be moved only far enough to ensure their immediate safety;
- Municipal by-laws and provincial regulations for noise will be followed and utilities will be located in the vicinity of the site prior to construction;
- Waste will be managed at all times, in accordance with provincial regulations; and



- 
- General provisions for proper site management should be undertaken.

#### **4.2.4 Protection of Groundwater Resources and Geotechnical Considerations**

##### **Anticipated Effects**

Consideration must be given to potential settlements which could occur due to the presence of the silty clay deposit and the combined loads from the proposed footings, any groundwater lowering effects, and grade raise fill.

The groundwater infiltration into the excavations should be low to moderate depending on the subsurface soil conditions.

From a geotechnical perspective, the subject site is adequate for the proposed residential development. It is expected that low rise, wood framed buildings could be founded on conventional spread footings placed on an undisturbed, silty sand, silty clay, glacial till or surface-sounded bedrock bearing surface.

Should existing grades be raised at the site for the proposed development, it is expected that several options, such as engineered fill or well graded blast rock, would act as suitable subgrade material for the proposed buildings provided the material is adequately placed and approved by the geotechnical consultant at the time of placement.

Satisfactory performance of the pavement structure is largely dependent on keeping the contact zone between the subgrade material and the base stone in a dry condition. Failure to provide adequate drainage under conditions of heavy wheel loading can result in the fine subgrade soil being pumped into the voids in the stone subbase, thereby reducing its load carrying capacity.

The subsurface soil conditions mostly consist of frost susceptible materials. In the presence of water and freezing conditions, ice could form within the soil mass. Heaving and settlement upon thawing could occur.

##### **Required Mitigation Measures**

The contractor should be prepared to collect and pump groundwater infiltration volumes from the excavation trenches. The contractor should be prepared to direct water away from all bearing surfaces and subgrades, regardless of the source, to prevent disturbance to the founding medium.

The foundation loads to be considered for the settlement case are the continuously applied loads which consist of the unfactored dead loads and the portion of the unfactored live load that is considered to be continuously applied. For buildings, a minimum value of 50% of the live load is often recommended by Paterson. A post-development groundwater lowering of 0.5 m was assumed.

A permissible grade raise restriction is required for grading around the proposed buildings where the silty clay layer is present. If higher than permissible grade raises are required, preloading with or without a surcharge, lightweight fill, and/or other measures should be investigated to reduce the risks of unacceptable long-term post construction total and differential settlements.

Where silty clay is anticipated at subgrade level, consideration should be given to installing subdrains during the pavement construction. The sub-drain inverts should be approximately 300 mm below subgrade level and run longitudinal along the curblines. The subgrade surface should be crowned to promote water flow to the drainage lines.

In the event of construction during below zero temperatures, the founding stratum should be protected from freezing temperatures by the installation of straw, propane heaters and tarpaulins or other suitable means. The

base of the excavations should be insulated from sub-zero temperatures immediately upon exposure and until such time as heat is adequately supplied to the building and the footings are protected with sufficient soil cover to prevent freezing at founding level.

Paterson also completed a soils review of the subject lands to determine applicable tree planting setbacks, in accordance with the City of Ottawa Tree Planting in Sensitive Marine Clay Soils (2017 Guidelines) for trees planted within a public right-of-way (ROW). The report makes recommendations regarding tree planting setbacks for the Low to Medium Sensitivity and High Sensitivity Areas. The report also includes conditions that are to be met for tree planting.

#### **4.2.5 Noise & Vibration**

##### **Anticipated Effects**

Construction operations could cause vibrations, and possibly, sources of nuisance to the community. Therefore, means to reduce the vibration levels as much as possible should be incorporated in the construction operations to maintain a cooperative environment with the residents.

Potential impacts during construction of the residential development and associated removal of trees and other vegetation include impacts associated with an increase in noise, dust and light.

##### **Required Mitigation Measures**

Two parameters determine the recommended vibration limit: the maximum peak particle velocity and the frequency. For low frequency vibrations, the maximum allowable peak particle velocity is less than that for high frequency vibrations. As a guideline, the peak particle velocity should be less than 15 mm/s between frequencies of 4 to 12 Hz, and 50 mm/s above a frequency of 40 Hz (interpolate between 12 and 40 Hz). These guidelines are for current construction standards. These guidelines are above perceptible human level and, in some cases, could be very disturbing to some people. A pre-construction survey is recommended to minimize the risks of claims during or following the construction of the proposed building.

Construction of the subdivision must adhere to all municipal noise by-laws to be sensitive to wildlife in adjacent natural areas.

## DESIGN WITH NATURE PRINCIPLES AND SUBDIVISION DESIGN

As outlined in Section 4.7.1(2) of the Official Plan, subdivision design is required to include a statement with respect to how the design with nature approach has influenced the design of the development and how it supports the following environmental objectives:

- Increasing forest cover across the city;
- Maintaining and improving water quality;
- Maintaining base flows and reducing peak flows in surface water;
- Protecting and improving the habitat of fish and wildlife in stream corridors;
- Protecting springs, recharge areas, headwater wetlands and other Hydrogeological areas;
- Managing resources by using low-maintenance, natural solutions.

Section 8 of the City of Ottawa Official Plan defines design with nature as:

“An approach that utilizes natural methods during site design to work with the terrestrial, aquatic, and biological characteristics of the site and the relationship between them. These measures may serve to reduce the reliance on technological solutions, which may be expensive, energy- or management-intensive, and less environmentally sensitive. This may include:

- Retention of natural vegetation on slopes to reduce erosion;
- Conservation of as many existing trees as feasible;
- Use of appropriate natural infiltration techniques on site to reduce the need for stormwater management ponds;
- Orientation of streets to maximise opportunities for passive solar heating and reflection of natural contours;
- Protection of natural stream corridors and incorporation of natural features into open spaces.”

The proposed development’s response to these principles and objectives is as follows:

- Trees to be removed will be replaced, where possible, within the proposed rights-of-way in consideration of the setbacks proposed in the Geotechnical Report prepared by Paterson Group. Plantings will consist of native species and will contribute positively to an appropriate amount of vegetative cover within the Plan of Subdivision.

The stormwater strategy for the site will use the dual drainage system. The system features a combination of on-site detention (surface ponding) with inlet control devices (ICDs) and direct conveyance with no ponding. It accommodates both minor and major stormwater runoff. During frequent storms the effective runoff collected by catchment areas is directly released via catch basin inlets into the network of storm sewers, called the minor system. During less frequent storms, the balance of the flow (in excess of the minor flow) is accommodated by a system of rear yard swales and street segments (or other forms of underground storage or surface storage such as dry ponds).

## ENERGY EFFICIENCY AND SUSTAINABLE DESIGN

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Section 2.5.1 of the Official Plan sets out design objectives and principles for new development within the City of Ottawa. The design objectives are qualitative statements of how the City wants to influence the built environment as the city matures and evolves. They are broadly stated and are applied throughout all land use designations. The Design Principles are more specific, further describing how the City hopes to achieve each of the objectives.

As per Section 4.7.1 of the Official Plan, an Integrated Environmental Review Statement is required to consider Objective 7 and the associated principles. Objective 7 and its associated principles are:

**To maximize energy-efficiency and promote sustainable design to reduce the resource consumption, energy use, and carbon footprint of the built environment.**

*Principles:*

Design should:

- Orient development to maximize opportunities for passive solar gain, natural ventilation, and use energy efficient development forms and building measures.
- Consider use of renewable energy and alternative energy systems.
- Maximize opportunities for sustainable transportation modes (walking, cycling, transit facilities and connections).
- Reduce hard surfaces and maximize landscaping and site permeability on site.
- Consider use of innovative green spaces such as green roofs, and measures that will reduce the urban heat island effect.
- Maximize re-use and recycling of resources and materials.
- Utilize green building technologies and rating systems such as Leadership in Energy and Environmental Design (LEED).
- Utilize advanced water conservation and efficiency measures.

The proposed development has implemented efficient and sustainable design principles as follows:

- The proposed development will provide medium-density housing in the Riverside South community, in proximity to planned Bus Rapid Transit, providing residents easy access to transit and giving them the opportunity to live in proximity to work and to shop locally.
- The proposed development will develop vacant lands within the City's Urban Boundary, making use of planned and existing infrastructure and public service facilities.



### 7.1 Concurrence of Study Team

Towards the end of the Plan of Subdivision and Zoning By-law Amendment application process for the subject lands, this Draft IERS will be reviewed and concurred with by the individual sub-consultants involved in the preparation of technical studies and by Claridge. Confirmation from each of the team members will be included in Appendix A.

### 7.2 Conclusion

It is our professional opinion that this IERS follows the policies set out in the Official Plan. We trust that this report is to your satisfaction. Should you have any questions, please do not hesitate to contact the undersigned at 613.730.5709 x287 and x240.



Nico Church, M.Pl.  
Planner



Julie Carrara, MCIP RPP  
Senior Planner

## IBI Group

I have reviewed the sections of this Integrated Environmental Review Statement associated with IBI's **Assessment of Adequacy of Public Services report and Noise Control Feasibility Study** as it relates to the proposed development of 4725 Spratt Road and the southern portion of 4623 Spratt Road by Claridge Homes and concur with its related content and recommendations.

### Servicing:

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Lance Erion, P. Eng.  
Associate  
IBI Group

### Noise Study:

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Lance Erion, P. Eng.  
Associate  
IBI Group

DRAFT

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**Paterson Group**

I have reviewed the sections of this Integrated Environmental Review Statement associated with Paterson's **Geotechnical Investigation** and **Phase 1 Environmental Site Assessment**, as it relates to the proposed development of 4725 Spratt Road and the southern portion of 4623 Spratt Road by Claridge Homes and concur with its related content and recommendations.

**Geotechnical Investigation**

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
David J. Gilbert, P. Eng.  
Associate and Senior Engineer  
Paterson Group

**Environmental**

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Mark S. D'Arcy, P.Eng., Q.P.E.S.A.  
Associate and Senior Engineer  
Paterson Group

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**Muncaster Environmental Planning Inc.**

I have reviewed the section of this Integrated Environmental Review Statement associated with Muncaster's **Tree Conservation Report and Environmental Impact Statement** as it relates to the proposed development of 4725 Spratt Road and the southern portion of 4623 Spratt Road by Claridge Homes and concur with its related content and recommendations.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Bernie Muncaster, M.Sc.  
Principal  
Muncaster Environmental Planning Inc.



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**Claridge Homes**

I have reviewed and concur with the content and recommendations of this Integrated Environmental Review Statement.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Vincent Denomme  
Intermediate Planner  
Claridge Homes