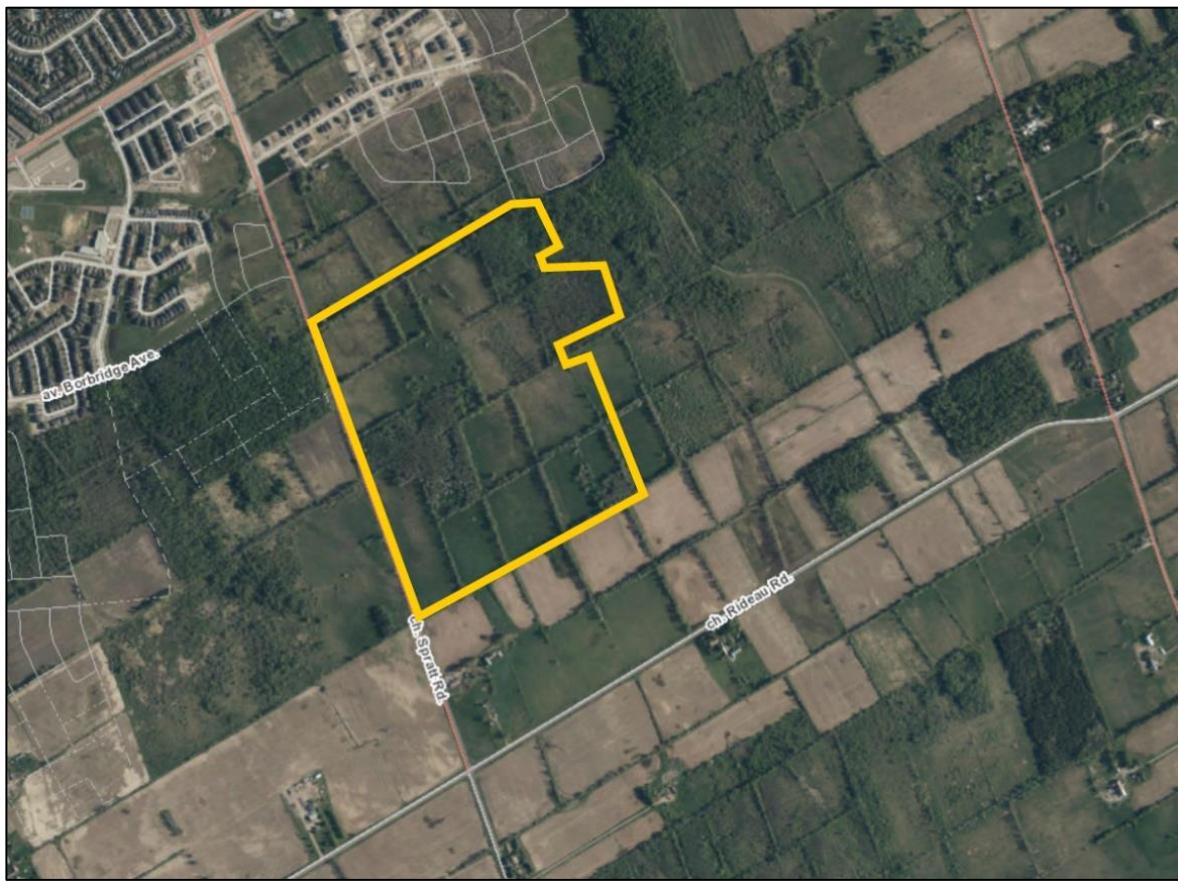




Riverside South – Phase 17 Integrated Environmental Review

September 2020



Riverside South – Phase 17

Integrated Environmental Review

September 2020

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This Standard Limitations statement is considered part of this report.

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Appendices

Appendix A – Concurrence with Subconsultants

1 Introduction

WSP was retained by the Riverside South Development Corporation (“RSDC”) to prepare an Integrated Environmental Review (IER) in support of a Draft Plan of Subdivision application for Phase 17 of the Riverside South subdivision (“the site”). The site is located east of Spratt Road at 4775 and 4875 Spratt Road in the City of Ottawa. The proposed development consists of a mix of blocks for single-detached dwellings, freehold townhomes, and back-to-back townhomes, one medium density block, one Community park and one parkette, one school block, and one commercial block. The following studies were reviewed:

- Assessment of Adequacy of Public Services prepared by IBI Group (July 2020);
- Noise Control Feasibility Study prepared by IBI Group (dated July 2020);
- Transportation Impact Statement prepared by IBI Group (August 2020);
- Geotechnical Investigation prepared by Paterson Group Inc. (May 29, 2020);
- Planning Rationale prepared by WSP (July 2020); and
- Environmental Impact Statement and Tree Conservation Report prepared by WSP (September 2020).

1.1 Integrated Environmental Review (Official Plan 2003, Website Consolidation)

This Integrated Environmental Review (IER) meets the requirements outlined in Section 4.7.1 of the Official Plan. The requirements for an Integrated Environmental Review are outlined in Section 4.7.1 of the City of Ottawa’s Official Plan (2003, website consolidation). The Official Plan states:

4.7.1 – Integrated Environmental Review to Assess Development Applications

“A comprehensive understanding of the relationship between the natural environment and the built environment is the foundation of site design and subdivision planning, as well as planning for the larger areas subject to community design plans. The integrated environmental review considers as a whole the significant findings from individual support studies (i.e. tree preservation and protection plans, environmental impact statements, stormwater site management plans, Phase 1 Environmental Site Assessments). It also ensures that development proceeds in keeping with the analysis and recommendations of any watershed and subwatershed studies and federal or provincial environmental assessments documents, where applicable. The integrated environmental review ensures that development design complies with the environmental policies contained in Section 4, and that the principles of design with nature have been applied.

Policies

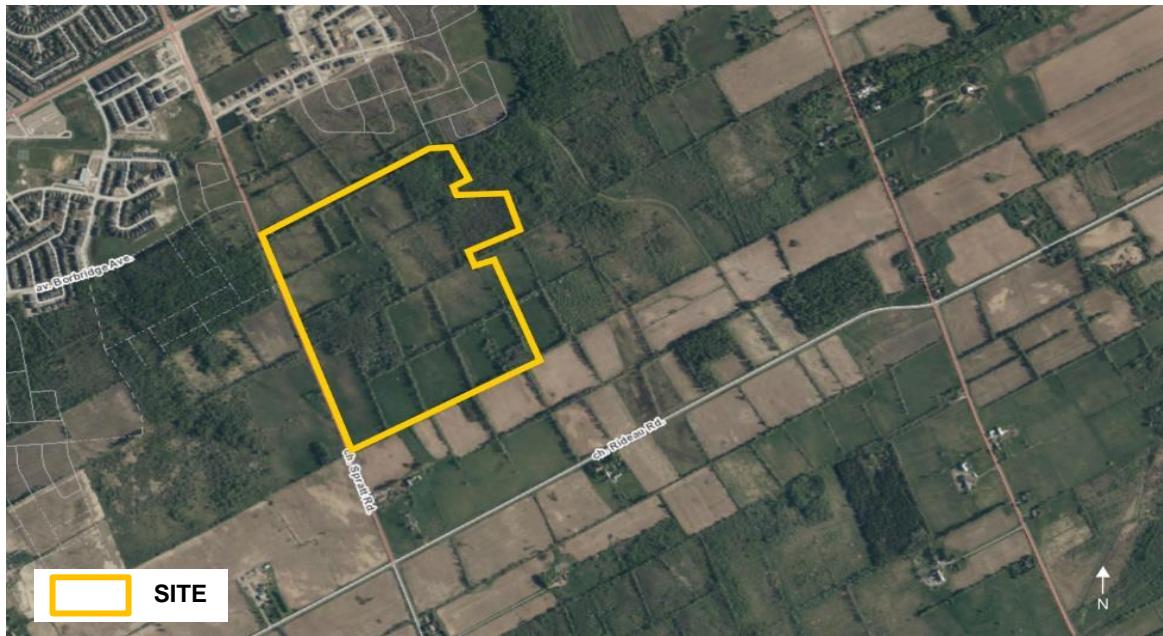
1. Subdivision, and Site plan and rezoning applications requiring an Environmental Impact Statement, Tree Conservation Report or landform feature assessment, will be accompanied by an integrated environmental review statement demonstrating how all the studies in support of the application influence the 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.

2. The integrated environmental review statement will provide:
 - a) A brief overview of the results of individual technical studies and other relevant environmental background material;
 - b) 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;
 - c) 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;
 - d) 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;
 - e) 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
 - f) 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 Description of the Site and Project

The proposed development is located east of Spratt Road at 4775 and 4875 Spratt Road, in the City of Ottawa, as illustrated in **Figure 1**. The site is legally described as Part of Lots 23 and 24 Concession 1 (Rideau Front) in the Geographic of Township of Gloucester in the City of Ottawa. It has an approximate area of 58.7 hectares (145 acres) and is comprised of vacant lands.

Figure 1: Site Location (Image source: geoOttawa, 2020)



The proposed development consists of a mix of blocks for single-detached dwellings, freehold townhomes, and back-to-back townhomes, one medium density residential block, one Community park and one parkette, one school block, and one commercial block as part of Phase 17 of the Riverside South subdivision.

The site is proposed to be developed in three phases, from north to south, as illustrated in **Figure 2**.

Figure 2: Phasing Plan



Illustrations from the Environmental Impact Statement (August 2020) prepared by WSP summarize the spatial features and functions of the Phase 17 development, as shown in **Figures 3 to 6**.

Figure 3 shows the location of headwater drainage features and sampling locations. **Figure 4** outlines the vegetation communities.

Figure 5 outlines the woodlands and distinctive/specimen trees.

Figure 6 shows WSP's survey locations, plus cavity trees for bats and Bobolink (Species at Risk habitat).

Figure 3: Headwater Drainage Features

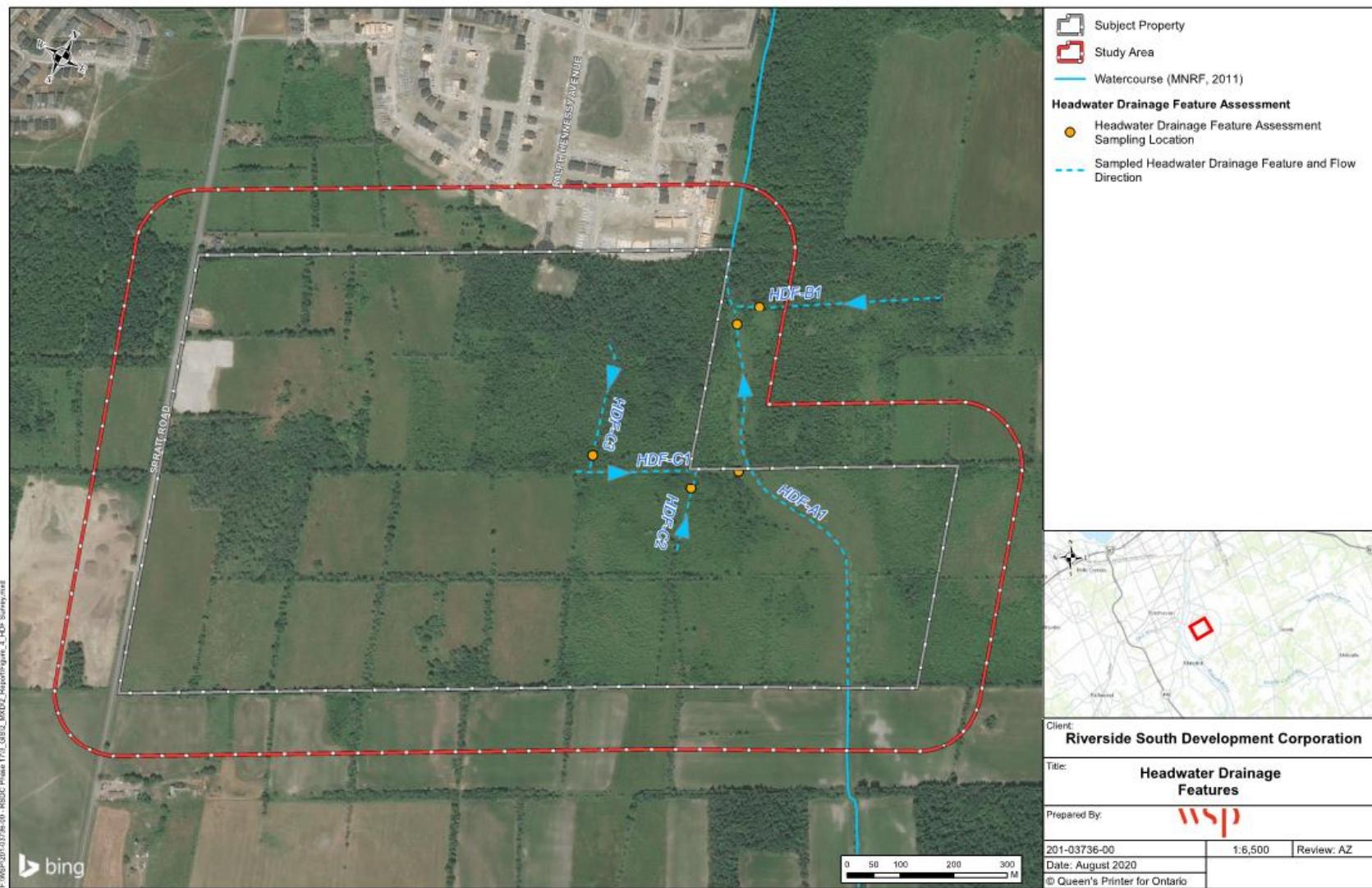


Figure 4: Ecological Land Classification

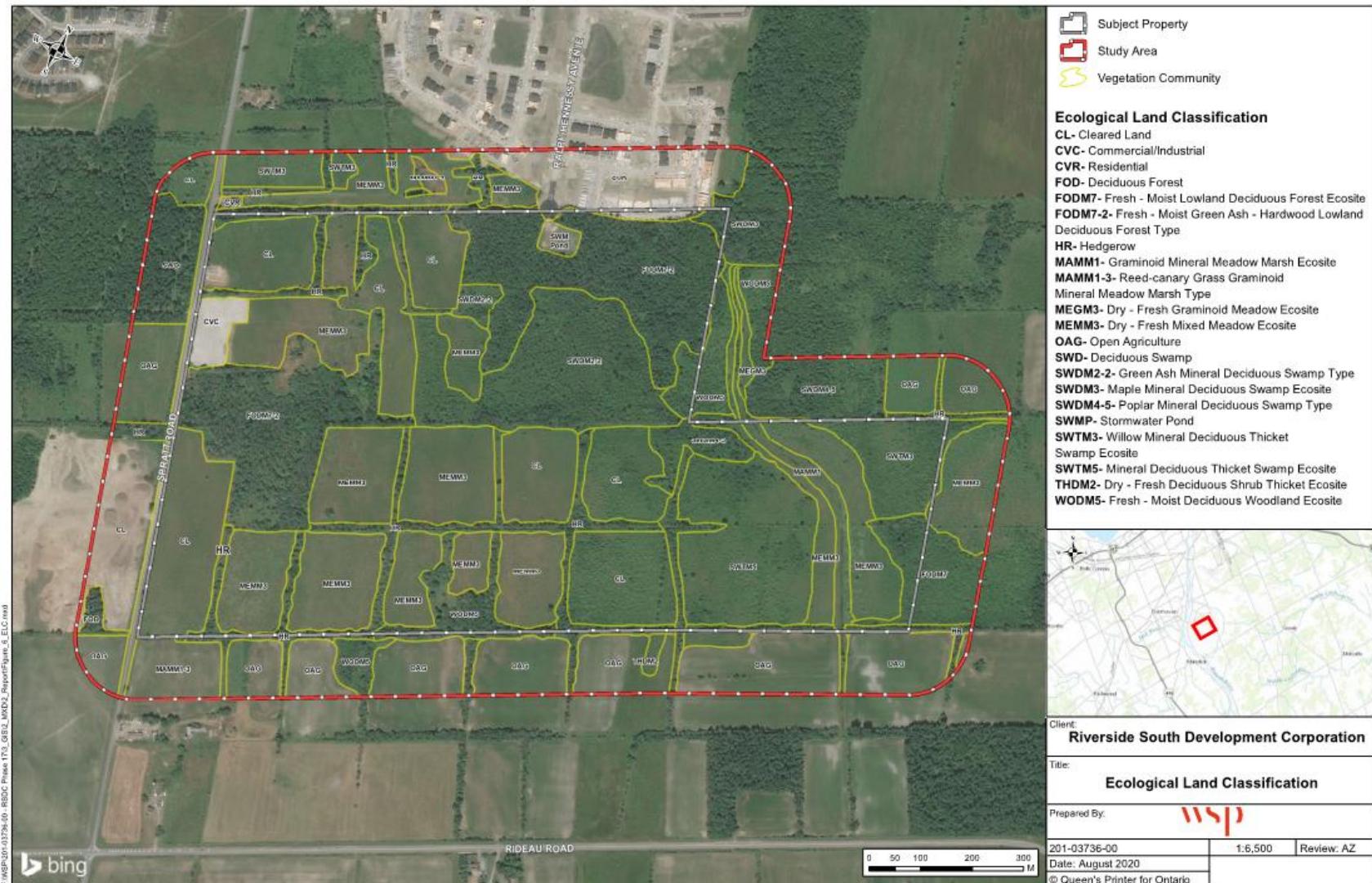


Figure 5: Woodlands and Tree Inventory

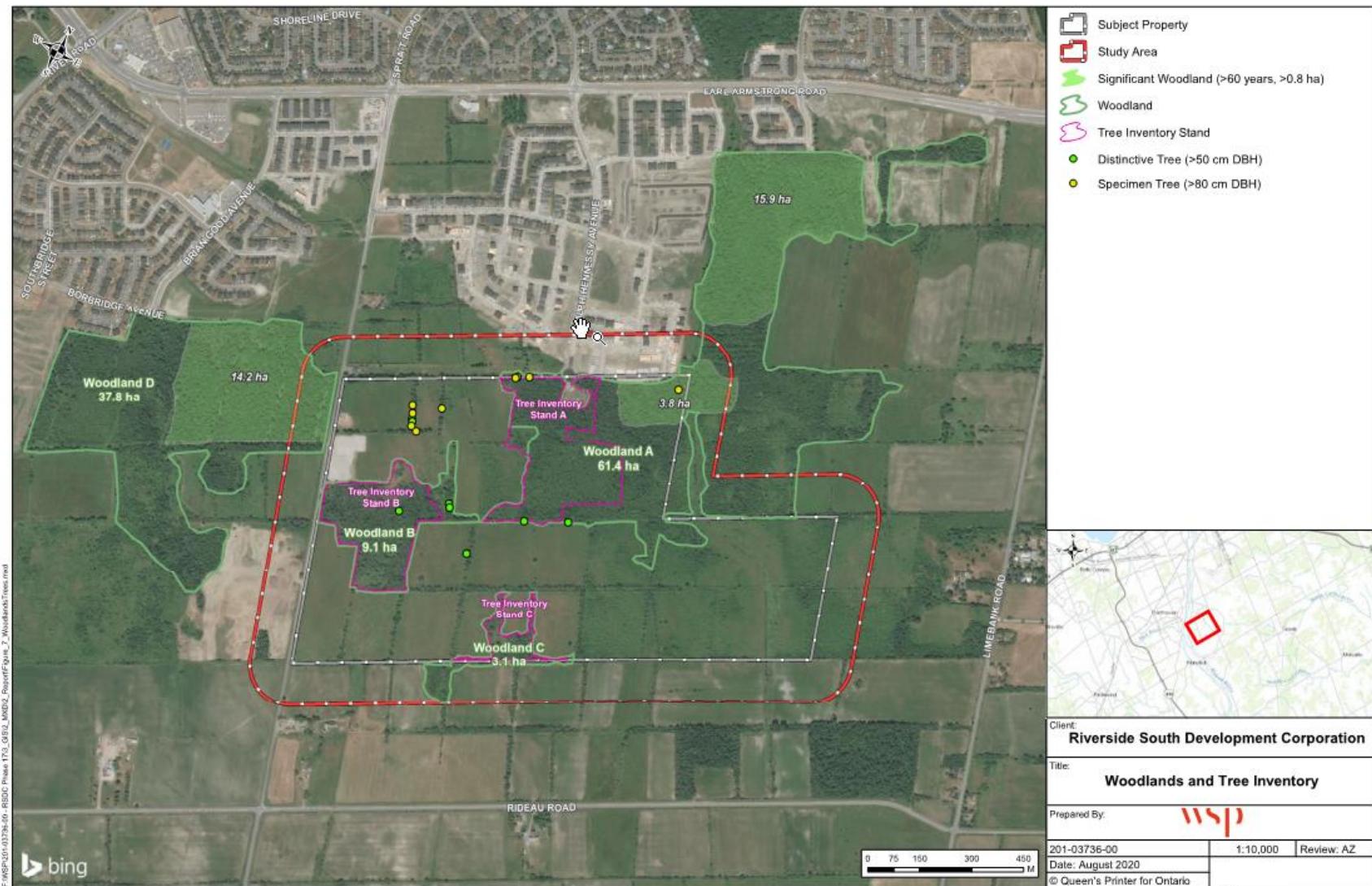
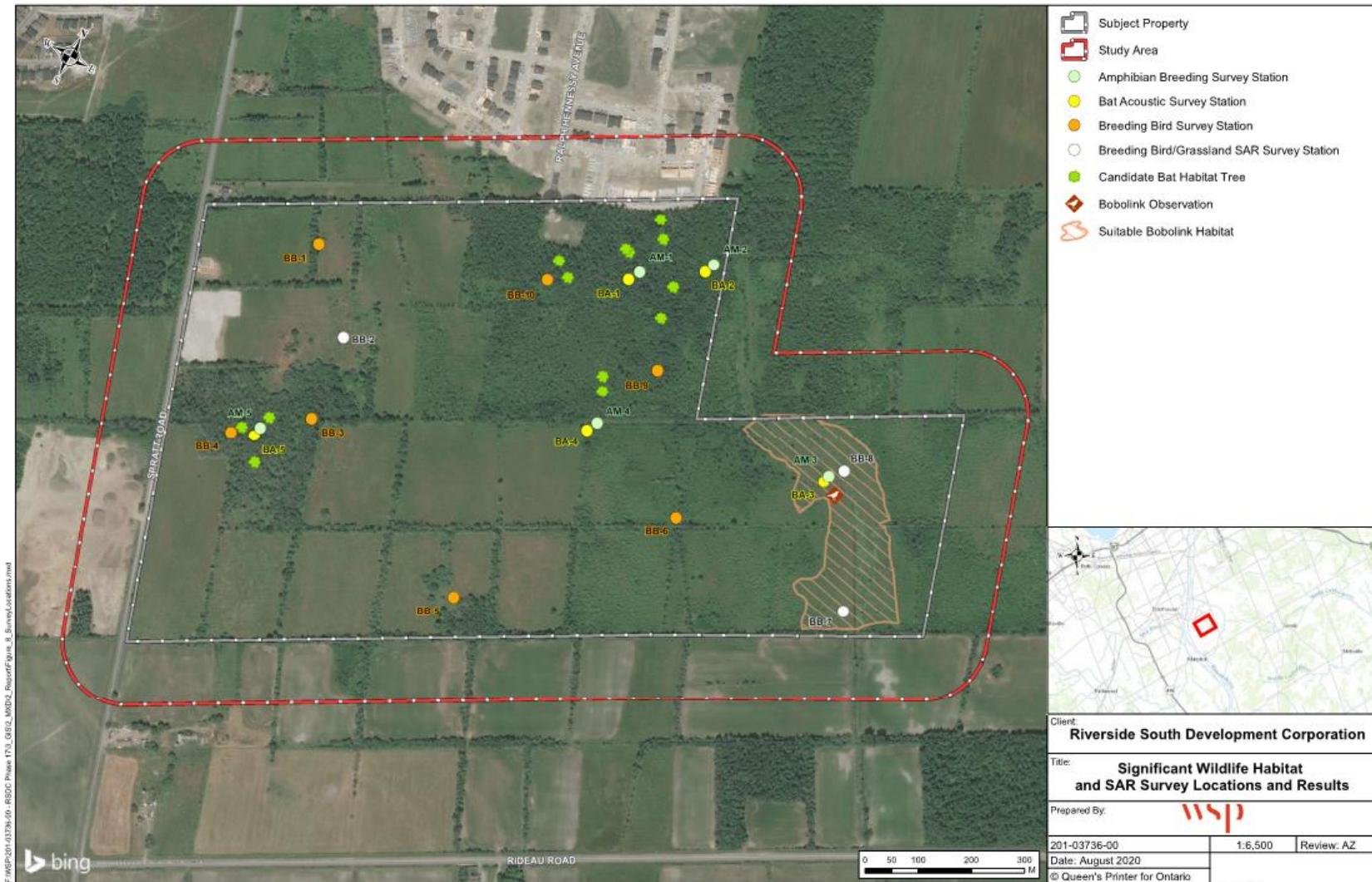


Figure 6: Survey Locations



3 Integrated Environmental Review

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 site. This section also provides a summary of the potential environmental concerns raised and the impact on design, where applicable.

It should be noted that the following section predominantly discusses the site-specific recommendations, mitigation measures, development conditions and monitoring as they pertain to Phase 17 of the Riverside South subdivision. It is assumed that the more general standards and best practices outlined in the technical studies will be implemented and followed, as required.

3.1 Assessment of Adequacy of Public Services (July 2020)

Overview of Results from Technical Study

IBI Group was retained by RSDC to prepare an Assessment of Adequacy of Public Services Report (“the Report”) to investigate and confirm the adequacy of public services for the proposed site. The Report reviewed major municipal infrastructure including water supply, wastewater collection, and disposal and management of stormwater. The Report also included a Sedimentation and Erosion Control Plan.

The Report was prepared as a technical document in support of the Draft Plan of Subdivision application submission, and was prepared in accordance with the City of Ottawa “Servicing Study Guidelines for Development Applications” (November 2009). Further, since the South Urban Community and Riverside South Community have been planned and developed for over 25 years, there have been numerous background studies dealing with major municipal infrastructure that were referenced prior to completing this assessment.

While some infrastructure, which is needed to help service the site, already exists, the development will include expansion and extension of that infrastructure to adequately service the site with water supply, wastewater collection, and disposal and management of stormwater runoff. The extension of the existing watermains through the site will provide a reliable source of both drinking water and fire flows. The ultimate wastewater outlets are already in place. A new stormwater management facility, Pond 5, is operational and will provide the necessary treatment for runoff from the site.

Development of the site 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 site. Ultimately, from an assessment of major municipal infrastructure perspective, it is recommended that the development application for the site be accepted, and that the development of the property move forward.

Key findings:

- Water servicing for Phase 1 will require extension of the 300 mm watermain at Borbridge Avenue and Spratt Road through the 4725 Spratt Road site to Phase 17. The 300 mm watermain on Spratt Road will be extended south with several connections to the Phase 1 watermains. Phase 2 servicing includes the extension of the 400 mm watermain on Solarium Avenue which will be constructed to Spratt Road as part of the RSDC Phase

15-3 development, which has recently been approved and is currently under construction. South of Phase 17, a 300 mm watermain is planned per the ISSU. If Phase 3 is built before this watermain is built, then temporary connections will be required in Phase 3 to provide proper looping.

- Sanitary servicing for Phase 1 will require the 525 mm sanitary sewer on Ralph Hennessy Avenue to be extended south to service the east portion of the site. A small portion of Phase 1 will be serviced by a sanitary sewer that will be extended through the 4725 Spratt Road site that is tributary to the Spratt Road sewer. The remainder of Phase 1 will be serviced by two connections to the 300 mm sanitary sewer on Whooping Crane Ridge across Spratt Road that is tributary to the Spratt Road sewer. Phases 2 and 3 will be serviced through the extension of sewers from Phase 1. A portion of the western part of Phase 2 and 3 will be serviced by the extension of the sewer on Solarium Avenue in the RSDC Phase 15-3 site which is tributary to the Spratt Road sewer.
- Stormwater servicing for Phase 1 will require the extension of the storm sewer through the 4725 Spratt Road site from Borbridge at Spratt Road to service the east portion of the phase. The western portion of Phase 1 will be serviced by two connections to the 1500 mm storm sewer on Whooping Crane Ridge on the east side of Spratt Road. These sewers will also provide drainage for the planned urbanization of Spratt Road. Phases 2 and 3 will be serviced through the extension of sewers from Phase 1. A portion of the western part of Phase 2 and 3 will be serviced by the extension of the trunk sewer on Solarium Avenue which will be extended to Spratt Road through the RSDC Phase 15-3 site.
- Development of the site will include a stormwater strategy using the dual drainage system. The system features a combination of on-site detention (surface ponding) with inlet control devices (IDs) and direct conveyance with no ponding. It accommodates both minor and major stormwater runoff.
- The ultimate stormwater runoff outlet from the site is the Riverside South Pond 5 Stormwater Management Facility, located west of River Road.

Table 1: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Assessment of Adequacy of Public Services (July 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---------------------------------|---|---|
| Erosion and Sediment Control | <ul style="list-style-type: none"> In order to prevent site-generated sediments from entering the environment, an Erosion and Sediment Control Plan (ESCP) will be implemented prior to development. | <ul style="list-style-type: none"> The erosion and sedimentation control strategy for the site could include erection of silt fences, straw bale barriers and rock check dams. These measures will ensure protection of both adjacent developments and the natural environment adjacent to and downstream of the site. |

3.2 Noise Control Feasibility Study (July 2020)

IBI Group was retained by RSDC to prepare a Noise Control Feasibility Study (“the Study”) to determine the impact of roadway traffic on residential lands of the Riverside South Phase 17 development area.

The Study outlines the impact of roadway noise on the Riverside South Phase 17 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 the Draft Plan and Grading Plan are finalized.

Key findings:

- The study area will be subject to roadway noise from existing Spratt Road to the west, as well as the proposed extensions of Borbridge Avenue, Solarium Avenue and Ralph Hennessy Avenue, which will form part of the site’s internal road network. The right-of-way is also currently being protected for the development of a future Bus Rapid Transit (BRT) to the north of the site.
- The site is outside of the Airport Vicinity Development Zone (AVDZ), as shown on Annex 10 and Schedule K of the City of Ottawa Official Plan, therefore aircraft noise from the Ottawa Macdonald-Cartier International Airport has not been considered in the Study.
- There are no rail lines within 500 metres of the site, therefore no consideration has been given to the noise impacts from rail traffic in accordance with the City of Ottawa Environmental Noise Control Guidelines (January 2016) (“ENC Guidelines”).

Table 2: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Noise Control Feasibility Study (July 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---|---|---|
| Major Collector Roads (2-UMCU) – The 60 dBA outdoor contour is located approximately 34.7 metres from the centreline of the road. | <ul style="list-style-type: none">• As the 60 dBA outdoor contour is located approximately 34.7 m from the centreline of the road, all outdoor living areas (OLA) in this range will require physical attenuation.• Appropriate noise barrier locations for the existing Spratt Road alignment and the proposed extensions of Borbridge Avenue and Solarium Avenue are indicated in Figure 2 of the Study.• These noise barriers should be 2.2 metres high, consistent with previous phases of Riverside South. At locations where the unattenuated noise level is below 60 dBA but above 55 dBA, a Type ‘A’ warning clause could be considered in lieu of a barrier.• Due to overland flow routes, drainage, and access easements it may not be practical to construct a continuous barrier along the major collector (2-UMCU) road located within the proposed development. In these situations, implementing a partial barrier will help reduce the noise levels below 60 dBA but may not | <ul style="list-style-type: none">• Physical attenuation is required. |

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|--|---|---|
| | reduce below 55 dBA, therefore a Type 'B' warning clause may still be required for select units. | |
| Ralph Hennessy Avenue (2-UCU) – The 60 dBA outdoor contour is located approximately 27.2 metres from the centreline of the road. | <ul style="list-style-type: none"> As the 60 dBA outdoor contour is located approximately 27.2 m from the centreline of the road, all outdoor living areas (OLAs) in this range will require physical attenuation. Appropriate noise barrier locations for the proposed extension of Ralph Hennessy Avenue through the proposed development lands are indicated in Figure 2 of the Study. These noise barriers should be 2.2 metres high, consistent with previous phases of Riverside South. At locations where the unattenuated noise level is below 60 dBA but above 55 dBA, a Type 'A' warning clause could be considered in lieu of a barrier. Due to overland flow routes drainage and access easements it may not be practical to construct a continuous barrier along the noted collector (2-UCU) road located within the proposed development. In these situations, implementing a partial barrier will help reduce the noise levels below 60 dBA but may not reduce below 55 dBA, therefore a Type 'B' warning clause may still be required for select units. | <ul style="list-style-type: none"> Physical attenuation is required. |
| BRT – The 60 dBA outdoor contour is located approximately 44.7 metres from the centreline of the BRT. | <ul style="list-style-type: none"> As the 60 dBA outdoor contour is located approximately 44.7 metres from the centreline of the BRT, all outdoor living areas (OLA) for the units directly flanking the BRT will require physical attenuation. Noise barriers are required for these units and are shown on Figure 2 of the Study. In order to reduce the noise below 55 dBA, the barriers may need to be up to four meters in height. If this is not practical, then a barrier height of 2.5 metres would likely reduce the noise level below 60 dBA and a Type 'B' warning clause would be required. | <ul style="list-style-type: none"> Physical attenuation is required. |

3.3 Transportation Impact Assessment – Step 4 Analysis (August 10, 2020)

Overview of Results from Technical Study

IBI Group (IBI) was retained by RSDC to undertake a Transportation Impact Assessment (TIA) ("the Study") in support of the Draft Plan of Subdivision application. Full occupancy of the first Phase (17-1) is expected by the end of 2024, while full build-out of the subdivision, including Phases 17-2 and 17-3, is expected by 2026. The horizon year of the Study was therefore taken as 2031, representing 5 years beyond the expected full build-out of the site.

Key findings:

- The proposed residential development is expected to generate up to 721 and 866 two-way vehicular trips during the weekday morning and afternoon peak hours, respectively. Site-generated traffic volumes were stratified by mode share and distributed amongst numerous access points with the arterial road network.
- It is expected that OC Transpo will plan future transit routes to accommodate the transit demand associated with growth in the Riverside South community, including the proposed development.
- The Study identified critical deficiencies in the Level of Service (LOS) across all transportation modes, with limited options available to achieve acceptable standards for all modes at the intersections of Earl Armstrong Road with Spratt Road and Ralph Hennessy Avenue/ Shoreline Drive. It is expected, however, that the development of additional east-west major collector routes will help slow the rate of background traffic growth and distribute traffic amongst a variety of parallel routes, ultimately improving these conditions.
- The results of the analysis indicate that the intersection of Earl Armstrong Road and Spratt Road is expected to approach its theoretical capacity (i.e. LOS 'E') by the 2031 study horizon year with or without the inclusion of site-generated traffic. Further, the proposed development will not contribute any additional traffic to the critical eastbound left-turn movement during the weekday morning or afternoon peak hours. The remaining study area intersections are expected to operate at acceptable levels of service (i.e. LOS 'D' or better) beyond 2031.
- Based on the queue length analyses conducted in this Study, the intersection of Earl Armstrong Road and Spratt Road may require an extension of the eastbound left-turn, northbound right-turn and westbound left-turn auxiliary lanes to support growth in background and site-generated traffic. Similarly, at the intersection of Earl Armstrong Road & Ralph Hennessy Avenue/ Shoreline Drive, possible storage deficiencies were identified at the channelized northbound right-turn and westbound left-turn movements.
- The Spratt Road Roadway Modification Application (RMA) was initially designed to accommodate a two-way stop controlled intersection at Spratt Road & Borbridge Avenue, however, subsequent analysis conducted as part of this TIA indicates that an all-way stop controlled intersection is warranted at this location under 2026 total traffic conditions as a result of revised development timing assumptions.
- Based on the findings of this Study, it is the overall opinion of IBI Group that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network with the appropriate actions and modifications in place.

Table 3: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Transportation Impact Assessment – Step 4 Analysis (August 10, 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|--|---|------------------|
| Potential variability associated with post-pandemic growth in background traffic and changing travel patterns. | <ul style="list-style-type: none">• It is recommended that the need to upgrade auxiliary lanes at Earl Armstrong Road and its intersections with Spratt Road and Ralph Hennessy Avenue/ Shoreline Drive be re-evaluated in 2024 using updated traffic data prior to the completion of Phase 17-1. | N/A |

3.4 Geotechnical Investigation (May 29, 2020)

Overview of Results from Technical Study

Paterson Group Inc. (Paterson) was commissioned by RSDC to conduct a geotechnical investigation for Phase 17 of the Riverside South residential development.

The objectives of the investigation were to:

- Determine the subsurface soil and groundwater conditions by means of boreholes.
- Provide geotechnical recommendations for the design of the proposed development including construction considerations which may affect its design.

Key findings:

- From a geotechnical perspective, the site is adequate for the proposed residential development.
- It is expected that the proposed residential dwellings will be founded on conventional spread footings placed on an undisturbed, silty sand, clayey silt, silty clay, glacial till, engineered fill and/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.
- It is anticipated that some bedrock removal will be required for basement construction and site servicing activities. All contractors should be prepared for bedrock removal within the site.
- Due to the presence of a silty clay deposit throughout the northern half of the site, a permissible grade raise restriction will be required for grading around the proposed buildings founded within the silty clay deposit.
- Due to the groundwater level within the glacial till layer, a significantly high groundwater in-flux may be observed during the installation of site servicing, where trench excavation extends below the groundwater table.

Table 4: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Geotechnical Investigation (May 29, 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---|---|------------------|
| Existing grade raises (if applicable) | <ul style="list-style-type: none">• 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. | N/A |
| Presence of a silty clay deposit throughout the northern half of the site | <ul style="list-style-type: none">• A permissible grade raise restriction will be required for grading around the proposed buildings founded within the silty clay deposit. | N/A |

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---|---|--|
| Due to the permeable glacial till deposit encountered within the groundwater table within the site, it is anticipated that conventional pumping with open sumps will be difficult to control the groundwater influx through the sides of the temporary excavation. | <ul style="list-style-type: none"> It is recommended that a dewatering specialist be consulted to review the most effective dewatering methods. A temporary MOECC Permit to Take Water (PTTW) is recommended for this project if more than 400,000 L/day of ground and/or surface water is to be pumped during the construction phase. At least 4 to 5 months should be allowed for completion of the application and issuance of the permit by the MOECC. 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. | N/A |
| 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. Also, the introduction of frost, snow or ice into the pavement materials, which is difficult to avoid, could adversely affect the performance of the pavement structure. | <ul style="list-style-type: none"> 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. The trench excavations should be constructed to avoid the introduction of frozen materials, snow or ice into the trenches. | N/A |
| Tree planting setbacks | <ul style="list-style-type: none"> The recommended tree planting setbacks should be reviewed by Paterson, once the proposed grading plan has been prepared. The tree planting setbacks are required within the northern half of the proposed development within Area 1 - Low to Medium Sensitivity Clay Area. Large trees (mature height over 14 m) can be planted within these areas provided a tree to foundation setback equal to the full mature height of the tree can be provided (e.g. in a park or other green space). Tree planting setback limits may be reduced to 4.5 m for small (mature height up to 7.5 m) and medium size trees (mature tree height 7.5 to 14 m), provided that the conditions noted below are met: <ul style="list-style-type: none"> The underside of footing (USF) is 2.1 m or greater below the lowest finished grade for footings within 10 m from the tree, as | <ul style="list-style-type: none"> Tree planting setbacks should be followed. |

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---------------------------------|--|------------------|
| | <p>measured from the centre of the tree trunk and verified by means of the Grading Plan.</p> <ul style="list-style-type: none"> ○ A small tree must be provided with a minimum of 25 m³ of available soils volume while a medium tree must be provided with a minimum of 30 m³ of available soil volume, as determined by the Landscape Architect. The developer is to ensure that the soil is generally uncompacted when backfilling in street tree planting locations. ○ The tree species must be small (mature tree height up to 7.5 m) to medium size (mature tree height 7.5 m to 14 m) as confirmed by the Landscape Architect. ○ The foundation walls are to be reinforced at least nominally (minimum of two upper and two lower 15M bars in the foundation wall). ○ Grading surrounding the tree must promote drainage to the tree root zone (in such a manner as not to be detrimental to the tree), as noted on the subdivision Grading Plan. | |

3.5 Planning Rationale (July 2020)

Overview of Results from Technical Study

WSP was retained by RSDC to prepare a Planning Rationale in support of a Draft Plan of Subdivision application for Phase 17 of the Riverside South subdivision.

Planning Rationale has been prepared in accordance with the City of Ottawa and Planning Act requirements to assess the Draft Plan of Subdivision in the context of the surrounding community and the overarching policy and regulatory framework for the site.

Key findings:

- The site is located within the City's urban boundary and is designated as General Urban Area on Schedule B Urban Policy Plan of the City of Ottawa's Official Plan (2003, website consolidation).
- The right-of-way to be protected along Spratt Road from Earl Armstrong Road to Rideau Road is 26 metres, as per Annex 1 of the City's Official Plan.
- As required in the Official Plan, the site is being developed to implement the Riverside South Community Design Plan (June 22, 2016).
- Under the City of Ottawa Comprehensive Zoning By-law 2008-250 (Consolidation May 27, 2020), the site is currently zoned Development Reserve (DR).
- It is the professional opinion of WSP that the proposed Draft Plan of Subdivision development represents good land use planning and is appropriate for the site for the following reasons:
 - The proposed development supports and is consistent with the 2020 Provincial Policy Statement;

- The proposed development conforms to the strategic directions and policies of the Official Plan;
- The proposed development meets several design objectives under Section 2.5.1 of the Official Plan, as well as the Compatibility criteria under Section 4.11;
- The proposed development conforms to the Riverside South Community Design Plan; and
- The proposed development will seek to rezone the lands within Phase 17 from Development Reserve (DR), to comply with the general intent and purpose of the Zoning By-law.
- The proposed development also meets the 13 criteria under Section 51(24) of the Planning Act when considering a Draft Plan of Subdivision.

Table 5: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Planning Rationale (July 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---------------------------------|---|------------------|
| N/A | • N/A | N/A |

3.6 Environmental Impact Statement and Tree Conservation Report (September 2020)

WSP was retained to complete an Environmental Impact Statement and Tree Conservation Report for the site. WSP biologists conducted ecological field surveys between April and August 2020 to evaluate and assess the ecological features and functions within the site, plus a 120-metre buffer. The results of the surveys have been used to identify impacts associated with the proposed development, and to develop appropriate mitigation measures.

Key findings:

- The natural heritage field investigations consisted of:
 - Ecological Land Classification (ELC);
 - Wetland delineation;
 - Significant woodland evaluation;
 - Tree inventory;
 - Headwater Drainage Feature (HDF) assessment;
 - Significant Wildlife Habitat (SWH) identification and evaluation;
 - Breeding bird surveys;
 - Amphibian breeding surveys;
 - Bat maternity roost surveys;
 - Acoustic bat surveys;
 - Species at Risk (SAR) surveys and SAR habitat identification; and
 - Incidental wildlife observations.

Table 6: Summary of Potential Environmental Concerns, Mitigation and Impact on Design from Environmental Impact Statement and Tree Conservation Report (September 2020)

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---|--|------------------|
| <p>Removal of approximately 62 hectares of vegetation communities and associated native vegetation species. However, approximately 34 hectares of clearing is associated agricultural land that was previously cleared of top soil and is now either regenerating with weedy species (Clover and Thistle species) or is currently un-vegetated.</p> | <ul style="list-style-type: none"> Limit vegetation clearing to smallest extent possible. Orange snow fencing should be used to delineate the construction limits and should be maintained throughout construction phase. Erosion and sediment control plan should be implemented to prevent sedimentation outside of work areas. Landscaping plans should consider the use of appropriate native species to offset the loss of species and biodiversity from vegetation removals. Invasive species (Buckthorn) or pest-infected species (Green Ash) should be safely removed from site to prevent spread of invasive species or pests. | N/A |
| <p>Permanent removal or encroachment of approximately 7.3 hectares of deciduous swamp.</p> | <ul style="list-style-type: none"> Notify Rideau Valley Conservation Authority (RVCA) of development within and adjacent to wetland communities. A permit under the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Ontario Regulation 174/06) may be required. Erosion and sediment control plan should be implemented to prevent sedimentation outside of work areas. | N/A |
| <p>Removal of woodland connected to a section of woodland considered to be significant. The area considered to be significant is not anticipated to be directly impacted or removed.</p> | <ul style="list-style-type: none"> Limit vegetation clearing to smallest extent possible. Orange snow fencing should be used to delineate the construction limits and should be maintained throughout construction phase. Erosion and sediment control plan should be implemented to prevent sedimentation outside of work areas. Landscaping plans should consider the use of appropriate native species to offset the loss of species and biodiversity from vegetation removals. Invasive species (Buckthorn) or pest-infected species (Green Ash) should be safely removed from site to prevent spread of invasive species or pests. | N/A |
| <p>Tree removals throughout most of the development footprint, including large specimen trees (>70 cm DBH) in northwestern corner of development footprint.</p> | <ul style="list-style-type: none"> Retention of healthy mid-aged trees as street trees where possible. Retention of healthy trees, where possible, within park, open space, and school blocks. Tree planting and compensation plan should be developed in consultation with the City of Ottawa | N/A |

| Potential Environmental Concern | Recommendations, Mitigation Measures, Development Conditions and Monitoring | Impact on Design |
|---|--|------------------|
| | <ul style="list-style-type: none"> Landscape plan should include tree planting recommendations consistent with the City of Ottawa's target for increased canopy cover to the extent possible within the property. Landscaping plans should consider the use of appropriate native species to offset the loss of species and biodiversity from vegetation removals. | |
| Removal of headwater drainage feature connected to Thomas Gamble Municipal Drain. | <ul style="list-style-type: none"> Offset the loss of headwater drainage feature by maintaining flows with integration to the stormwater management plan. | N/A |
| Overall loss of habitat for bird, amphibian, and mammal species commonly found in Ottawa. | <ul style="list-style-type: none"> Minimize vegetation and habitat removals to least extent possible. Vegetation removals should be avoided during spring and summer months to reduce harm and harassment to wildlife. Installation of bat boxes in suitable locations in park block. | N/A |
| Removal of suitable habitat for Species of Conservation Concern | <ul style="list-style-type: none"> Minimize vegetation and habitat removals to least extent possible. Vegetation removals should be avoided during spring and summer months to reduce harm and harassment to wildlife. | N/A |
| Removal of Butternut (listed as Endangered in Ontario) trees throughout the development footprint. | <ul style="list-style-type: none"> Registration of Butternut trees with Ontario Ministry of Environment, Conservation, and Parks (MECP). Consultation with MECP if a Species at Risk (SAR) permit is required. | N/A |
| Bobolink (<i>Dolichonyx oryzivorus</i>), listed as Threatened in Ontario, are breeding within the mixed meadow community on the western boundary of the subject property. Based on the distance (>400m) between the development limit and the extent of suitable habitat, it is not anticipated that Bobolink or their regulated habitat will be negatively affected and registration or a permit should not be required. | <ul style="list-style-type: none"> Consult with MECP to notify that development and construction activities will be occurring near to Bobolink habitat, but development will not encroach upon regulated habitat. | N/A |

4 Design with Nature Approach

Under the definitions in Section 8 Glossary, of the City of Ottawa's Official Plan, "Design with Nature" is defined 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 maximize 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 includes the following "design with nature" principles:

- Natural vegetation removal will be limited to the least extent possible. Further, in order to prevent site generated sediments from entering the environment, an Erosion and Sediment Control Plan will be implemented prior to development, as recommended in the Assessment of Adequacy of Public Services Report and Environmental Impact Statement and Tree Conservation Report.
- The development will look to retain healthy mid-aged trees as street trees and retain healthy trees within the park, open space, and school blocks, where possible. A tree planting and compensation plan should be developed in consultation with the City.
- As recommended in the Geotechnical Investigation, tree planting setbacks will be followed.
- As noted in the Assessment of Adequacy of Public Services report, stormwater will be managed through the Riverside South Pond 5 Stormwater Management Facility, which is located west of River Road. The facility is operational and will provide the necessary treatment for runoff from the site.
- As noted in the Planning Rationale, buildings, where practical and where block patterns allow, will be oriented north-south to take advantage of daylighting and passive solar gain, in order to reduce the need for artificial lighting.
- An erosion and sedimentation control strategy for the site could include erection of silt fences, straw bale barriers and rock check dams. These measures will ensure protection of both adjacent developments and the natural environment adjacent to and downstream of the site.

5 Energy Efficiency

As per Section 4.7.1 of the Official Plan, an Integrated Environmental Review Statement is required to consider Objective 7 of Section 2.5.1 and the associated principles. Objective 7 and its associated principles state:

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

The proposed development includes the following sustainable and energy efficient design principles:

- As noted in the Planning Rationale, buildings, where practical and where block patterns allow, will be oriented north-south to take advantage of daylighting and passive solar gain, in order to reduce the need for artificial lighting.
- As noted in the Planning Rationale, the proximity of the proposed development to the future Rapid Transit Corridor and the Rapid Transit Stop to the north of the site on Ralph Hennessy Avenue offers future residents a convenient and viable alternative to the private automobile, thus contributing to a reduced carbon footprint.

6 Conclusion

In conclusion, this Integrated Environmental Review (IER) meets the requirements outlined in Section 4.7.1 of the Official Plan. The IER has been reviewed and concurred with by the individual subconsultants involved in the design team and technical studies. Written concurrence is provided in **Appendix A**.

7 References

IBI Group (July 2020). Assessment of Adequacy of Public Services: Riverside South Phase 17, 4775 & 4875 Spratt Road, Riverside South Community.

IBI Group (July 2020). Noise Control Feasibility Study: Riverside South Phase 17, 4775 & 4875 Spratt Road, Riverside South Community.

IBI Group (August 2020). Transportation Impact Assessment – Step 4: Analysis, Riverside South Phase 17.

Paterson Group Inc. (May 2020). Geotechnical Investigation: Proposed Residential Development, Riverside South – Phase 17, Spratt Road, Ottawa, Ontario.

WSP (July 2020). Riverside South – Phase 17 Planning Rationale: Draft Plan of Subdivision Application.

WSP (September 2020). Riverside South – Phase 17 Environmental Impact Statement and Tree Conservation Report.

Appendix A – Concurrence with Subconsultants

The Integrated Environmental Review has been reviewed and concurred with the individual subconsultants involved in the preparation of the studies. Signatures of concurrence are provided on the following pages.

ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES

I have reviewed the section of this Integrated Environmental Review associated with the **Assessment of Adequacy of Public Services (July 2020)** as it relates to the proposed development and concur with its related content and recommendations.

Name: Lance Erion, P.Eng.

Title: Associate

IBI Group

Signature: *Lance Erion*

Date: September 14, 2020

NOISE CONTROL FEASIBILITY STUDY

I have reviewed the section of this Integrated Environmental Review associated with the **Noise Control Feasibility Study (July 2020)** as it relates to the proposed development and concur with its related content and recommendations.

Name: Ben Pascolo-Neveu

Title: Transportation Engineer

IBI Group

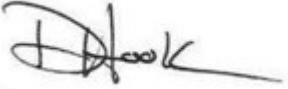
Signature: Ben Pascolo-Neveu

Date: September 14, 2020

TRANSPORTATION IMPACT ASSESSMENT – STEP 4 ANALYSIS

I have reviewed the section of this Integrated Environmental Review associated with the **Transportation Impact Assessment – Step 4 Analysis (August 10, 2020)** as it relates to the proposed development and concur with its related content and recommendations.

Name: David Hook
Title: Transportation Engineer
IBI Group

Signature: 

Date: September 8, 2020

GEOTECHNICAL INVESTIGATION

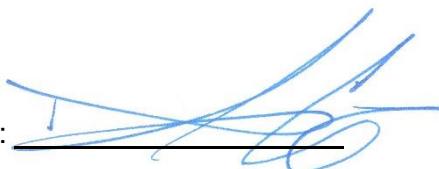
I have reviewed the section of this Integrated Environmental Review associated with the **Geotechnical Investigation (May 29, 2020)**, as it relates to the proposed development and concur with its related content and recommendations.

Name: David Gilbert, P.Eng.

Title: Senior Geotechnical Engineer

Paterson Group Inc.

Signature:



Date: Sept. 8, 2020

PLANNING RATIONALE

I have reviewed the section of this Integrated Environmental Review associated with the **Planning Rationale (August 2020)**, as it relates to the proposed development and concur with its related content and recommendations.

Name: Nadia De Santi

Title: Senior Project Manager

WSP Canada Group Ltd.

Signature: 

Date: September 3, 2020

Name: Anita Sott

Title: Senior Planner

WSP Canada Group Ltd.

Signature: 

Date: September 3, 2020

ENVIRONMENTAL IMPACT STATEMENT AND TREE CONSERVATION REPORT

I have reviewed the section of this Integrated Environmental Review associated with the **Environmental Impact Statement and Tree Conservation Report (September 2020)** as it relates to the proposed development and concur with its related content and recommendations.

Name: Alex Zeller. M. Sc.

Title: Senior Ecologist

WSP Canada Group Ltd.

Signature: 

Date: September 3, 2020