Valecraft Homes Ltd.
1455 Youville Drive, Suite 210
Orleans, Ontario, K1C 6Z7

July 22nd, 2019

Attn: Danny Page, Manager of Planning and Land Development – Valecraft Homes

RE: Valecraft Kanata North Development (1020 and 1070 March Road)
Combined Environmental Impact Statement & Tree Conservation Report – Addendum #1

1.0 BACKGROUND AND PURPOSE

McKinley Environmental Solutions (MES) was previously retained by Valecraft Homes (Valecraft) to prepare the *Combined Environmental Impact Statement and Tree Conservation Report – Valecraft Kanata North Development (1020 & 1070 March Road)* (dated April 2019) (MES 2019a). MES (2019a) was prepared to support the proposed development of the Valecraft Kanata North property (1020 & 1070 March Road) (the Site) (Figure 1). The Site is approximately 47.8 ha in size and occurs within the Northeast Quadrant of the Kanata North Urban Expansion Area (KNUEA). The Site and the proposed development are described in further detail in MES (2019a).

Section 6.0 of MES (2019a) identified several additional studies and surveys, which were to be undertaken to support the development review and approvals process. As described in MES (2019a), the additional studies and surveys were scheduled to be completed in the spring and summer of 2019. The additional studies and surveys described in Section 6.0 of MES (2019a) include the following:

- A Large Tree Inventory within Woodlot S-23;
- A Headwaters Drainage Assessment (HDA) assessing the North Tributary, the Northern Field Drainage Channel, and the Ephemeral Farm Drainage Channels. The HDA was prepared to support the realignment of the North Tributary, and included amphibian call surveys, updated fish surveys, water measurements, and channel morphology measurements; and

- Additional Species at Risk (SAR) surveys, including a Breeding Bird Survey targeting Bobolink (threatened), Eastern Meadowlark (threatened), Barn Swallow (threatened), and other breeding birds. An updated Eastern Whip Poor Will Call survey was also undertaken.

The purpose of this letter is to provide Addendum #1 to the Combined Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) (MES 2019a). This Addendum #1 includes a summary of the Large Tree Inventory results and a summary of the HDA report. The full results of the Large Tree Inventory have been presented in a separate letter, which is included in Appendix B. The HDA report has been prepared under separate cover (MES 2019b) and is summarized in this letter. Lastly, this letter provides the results of the additional 2019 SAR surveys.

This letter report is intended to provide supplemental information that expands upon the Combined EIS and TCR (MES 2019a). This letter report is intended to be read in conjunction with MES (2019a). Refer to MES 2019a for further details regarding the proposed development, the presence of natural heritage features, potential impacts on natural heritage features, and recommended mitigation measures. For brevity, all methods, results, natural heritage features, mitigation requirements, and recommendations which were adequately addressed in MES (2019a) are not discussed in this letter. Refer to MES (2019a) for any additional information not discussed in this Addendum #1.

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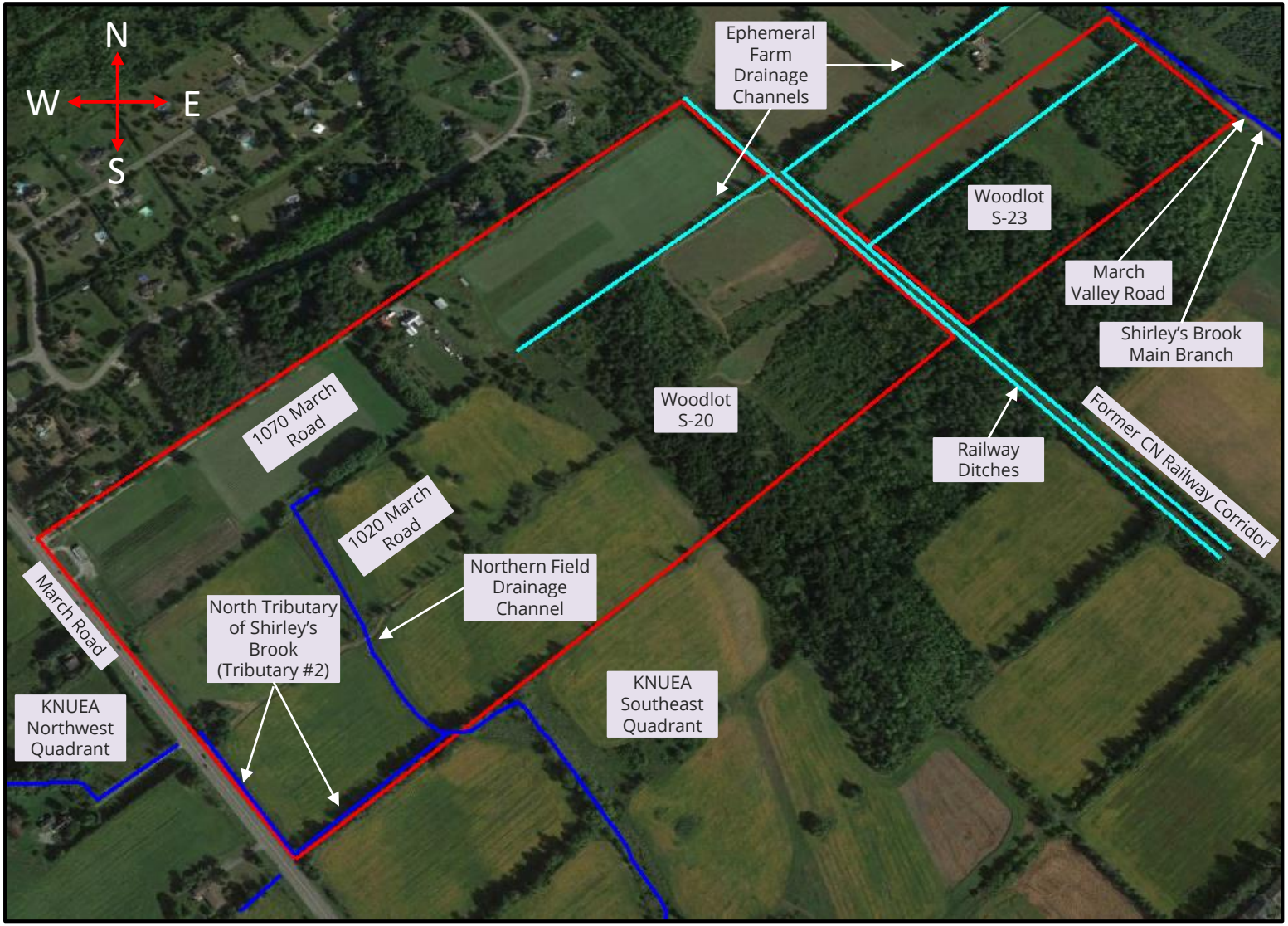
FIGURE 1: SITE OVERVIEW

Valecraft Kanata North Development (1020 & 1070 March Road)
Combined Environmental Impact Statement and Tree Conservation Report – Addendum #1



- Site Boundary

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

2.0 METHODS

2.1 Large Tree Inventory

The vegetation communities and trees within the Site have previously been assessed in detail as part of the plant surveys and tree inventory described in MES (2019a). Refer to MES (2019a) for a detailed description of the plant surveys and tree inventory methods that have previously been employed. The previously completed plant surveys and tree inventory included multiple survey visits. Figure 2 (included below) provides an overview of the Treed Habitats within the Site.

As discussed in MES (2019a), a follow-up Large Tree Inventory was requested by the City of Ottawa. The Large Tree Inventory was undertaken to assess the entirety of Woodlot S-23 and surrounding areas of recent regrowth, including treed areas that occur within the Valecraft Homes Site and also within adjacent development lands owned by Minto Communities. The Large Tree Inventory was prepared jointly on behalf of Valecraft Homes and Minto Communities, due to the fact that Woodlot S-23 stretches across both landowners' properties. For the purposes of the Large Tree Inventory, the 'Study Area' includes Woodlot S-23 and the surrounding areas of recent regrowth, including where they occur on both the lands owned by Valecraft Homes and Minto Communities. The full results of the Large Tree Inventory are presented in a separate letter, which is included in Appendix B.

For the purposes of the Large Tree Inventory, large trees were defined as any trees that are ≥50 cm diameter at breast height (dbh) in size. In order to complete an inventory of large trees within the Study Area, additional site visits were undertaken on May 27th and May 30th, 2019. Conditions during the site visits included partly cloudy skies and 16 ºC and partly cloudy skies and 21 ºC on May 27th and May 30th (respectively). The site visits were undertaken in the late spring when the majority of trees were leafed out. Large trees were identified by undertaking transects through the Study Area that were spaced 25 m apart. Any trees along the transects that appeared approximately 50 cm in size or greater were measured through the use of a calibrated dbh tape. Trees were also identified to species and their condition was noted. The condition of Butternut Trees (endangered) was described based on the results of the Butternut Health Assessments (BHAs) that have been completed in the Minto Communities and Valecraft Homes properties (Fleguel 2018a; Fleguel 2018b).

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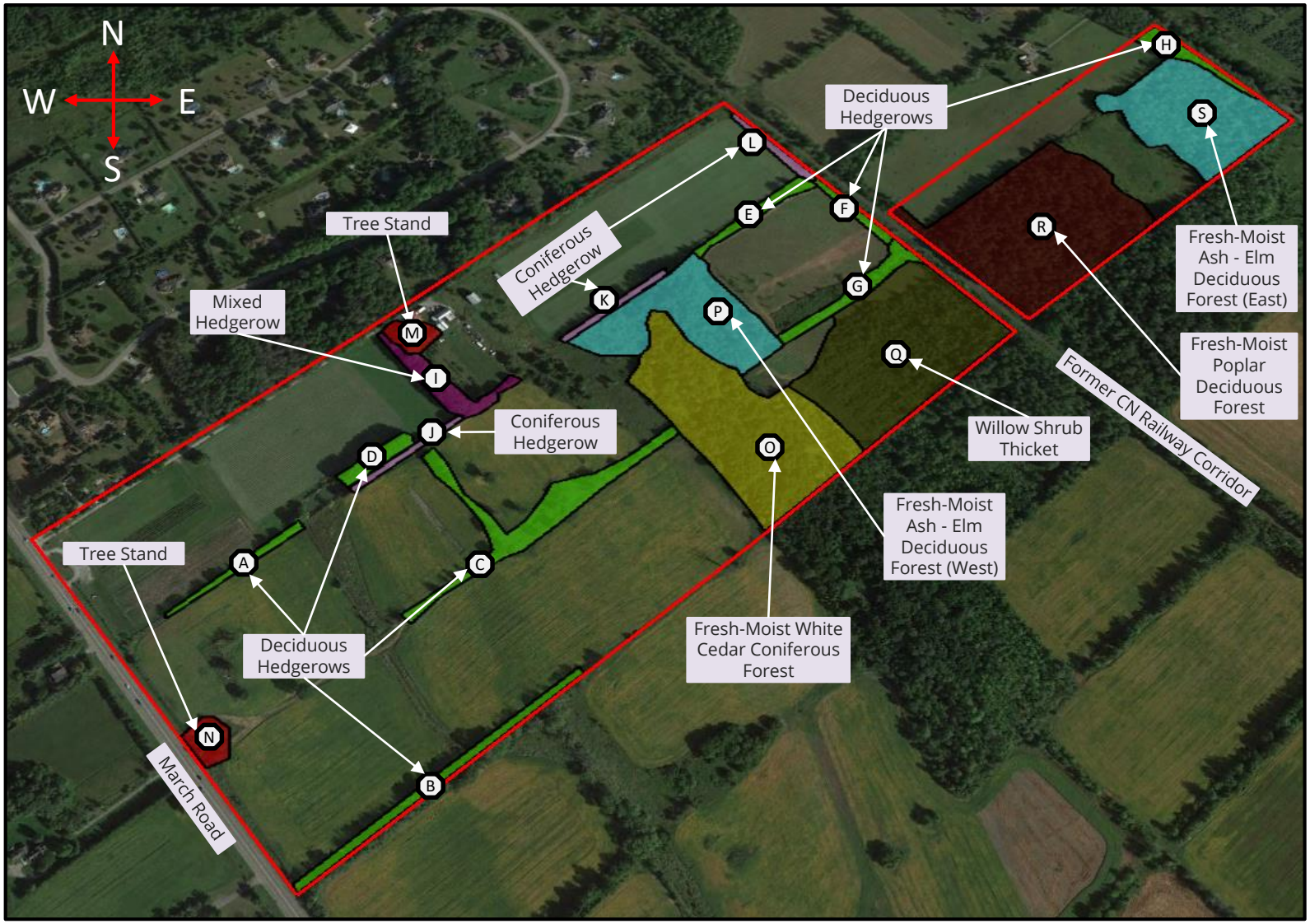
FIGURE 2: TREED HABITATS

Valecraft Kanata North Development (1020 & 1070 March Road)
Combined Environmental Impact Statement and Tree Conservation Report – Addendum #1



- Site Boundary (H) - Vegetation Feature Number

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

2.2 Headwaters Drainage Assessment

The Headwaters Drainage Assessment was prepared under separate cover (MES 2019b). For the purposes of this Addendum #1, the methods, results, and recommendations of the HDA have been summarized. Refer to MES (2019b) for additional detail.

The field component of the Headwater Drainage Assessment (HDA) was undertaken following the *Evaluation, Classification and Management of Headwater Drainage Features Guideline* (TRCA 2014). The sampling sites included 40 m upstream and 40 m downstream of each constriction or confluence. As shown in Figure 3 (below), five (5) Survey Sites were required. Each upstream and downstream drainage feature segment was measured at each of the five (5) Survey Sites. Site surveys included the following:

- **OSAP Module S4.M10 – Assessing Headwater Drainage Features (Stanfield et al. 2013):** This includes an assessment of hydrological and physical functions. These included the watercourse type, flow conditions, bankfull width, channel depth, riparian corridor vegetation, and connectivity. Flow and water measurements were completed on April 16th (spring freshet), May 23rd (late spring) and July 9th, 2019 (mid-summer). Channel measurements were completed during the April 16th, 2019 Site visit.
- **Marsh Monitoring Program – Amphibian Call Counts (Konze and McLaren 1998):** Amphibian breeding habitat was identified according to the *Marsh Monitoring Program – Amphibian Call Counts Method* (Konze and McLaren 1998). This method includes three (3) night time surveys in April, May, and June to survey for amphibian breeding activity by listening for frog calls. Surveys were conducted on April 17th, May 21st, and June 18th, 2019. Conditions on April 17th included clear skies and temperatures of 10 ºC. Conditions on May 21st included 14 ºC and clear skies. Conditions on June 18th included mostly clear skies and temperatures of 22 ºC. Amphibian call counts were conducted in the upstream and downstream portions of each Survey Site.
- **Fish Survey:** Fish surveys were completed on July 12th, 2019 following the *OSAP Module S3.M1 – Single Pass Electrofishing Survey* method (Stanfield 2013). This includes a single pass electrofishing survey to identify fish species present within the Site. Electrofishing was completed throughout Survey Sites #1, #2, and #3 (Refer to Figure 3). In each sampling location, approximately 40 m of the watercourse was surveyed using a backpack electrofisher. Electrofisher settings and field conditions are described in MES (2019b). Survey Sites #4 and #5 were either dry or nearly dry (≤5 cm standing water) by early July, and therefore Survey Sites #4 and #5 were too shallow to be surveyed using a backpack electrofisher. Survey Sites #4 and #5 were instead surveyed using dip nets, and no fish species were observed.

2.3 Species at Risk Surveys

The additional Species at Risk (SAR) surveys completed in 2019 included the following:

- **Breeding Bird Survey (Eastern Meadowlark, Bobolink, Barn Swallow):** In order to assess the potential presence of breeding migratory birds and the extent of their habitat within the Site, a Breeding Bird Survey was undertaken following the Ontario Ministry of Natural Resources and Forestry (OMNRF) *Wildlife Monitoring Programs and Inventory Techniques - Technical Manual* (Konze & McLaren 1998) Breeding Bird Survey (BBS) method. This included completion of three (3) site surveys in May and June. The surveys were completed on June 11th (Overcast, 17 ºC), June 18th (Sunny, 23 ºC), and June 26th, 2019 (Cloudy, 18 ºC). The timing and methodology of the surveys followed the requirements outlined in the OMNRF *Survey Methodology under the Endangered Species Act: Dolichonyx oryzivorus (Bobolink)* (OMNRF 2011). The bird surveys addressed the potential presence of Bobolink, Eastern Meadowlark, Barn Swallow and other breeding bird species. The bird survey points are shown in Figure 4 (below). During the June 11th survey, all interior and exterior surfaces of buildings within the Site were searched to confirm the presence/absence of Barn Swallow nests.
- **Eastern Whip Poor Will Call Surveys:** The Kanata North Existing Conditions Natural Environment Features Report (MEP 2016) included surveying for Eastern Whip Poor Will, and none were found in the area. However, surveying was completed in 2014, and the OMNRF has since identified Eastern Whip Poor Will as a potential concern. As such, updated Eastern Whip Poor Will surveys were undertaken following the OMNRF *Draft Survey Protocol for Eastern Whip Poor Will* (OMNRF 2014c). This protocol necessitates that three (3) Eastern Whip Poor Will call surveys must be undertaken after dusk (one week before or after the full moon), from mid-May until end of June. Eastern Whip Poor Will call surveys were completed on May 21st, June 11th, and June 18th, 2019. Survey conditions are summarized below in Table A. The Eastern Whip Poor Will survey points are shown in Figure 7 (below).

3.0 LARGE TREE INVENTORY RESULTS AND RECOMMENDATIONS - SUMMARY

As described above, the full results of the Large Tree Inventory are presented in a separate letter, which is included in Appendix B. The results of the Large Tree Inventory are also summarized here. Refer to Appendix B for additional detail.

In total, seventy six (76) trees ≥50 cm diameter at breast height (dbh) in size were documented within Woodlot S-23 and within the adjacent areas of recent regrowth (Referred to as the Study Area). The Study Area includes the lands east of the Former CN Railway Corridor owned by Valecraft Homes and Minto Communities. Notably, approximately 32% of the large trees (24 trees) were identified as non-retainable. Non-retainable trees included those that were dead, in poor condition, or those trees identified as Category 1 (Non-retainable) Butternut Trees by Fleguel (2018a) and Fleguel (2018b). Potentially retainable trees included any trees that were found to be in good condition and living during the Large Tree Inventory. The relatively high proportion of non-retainable trees is due to the fact that the two (2) most common species with specimens ≥50 cm dbh in size were Butternut (21%, 16 trees) and White Ash (17%, 13 trees). Butternut Trees are an endangered species, and many Butternuts are in decline due to the effects of the Butternut Canker disease. White Ash trees throughout the Ottawa area are also frequently in decline due to the effects of the invasive Emerald Ash Borer. Extensive evidence of damage to Butternut Trees and White Ash by the Butternut Canker/Emerald Ash Borer was noted throughout the Study Area. Notably, virtually all of the mature White Ash trees within the Study Area showed signs of damage from the Emerald Ash Borer.

The Kanata North Urban Expansion Area (KNUEA) Environmental Management Plan (EMP) states that the western portion of Woodlot S-23 is to be retained as a natural heritage feature and conveyed to the City of Ottawa (Novatech 2016b). The limits of the retained area of Woodlot S-23 will depend on the final detailed design of the Stormwater Management (SWM) pond that will service the Valecraft Homes and Minto Communities Kanata North developments. The Draft Plan of Subdivision for the Minto Communities development identified an approximately 2.4 ha block that is anticipated to include the retained portion of Woodlot S-23 within the Minto property (MES 2019c). The anticipated limits of the SWM pond within the Valecraft Homes lands were not identified in MES (2019a), however, it was noted that it is anticipated that the core of Woodlot S-23 will ultimately be retained. For the purposes of the Large Tree Inventory, it was assumed that the retained portion of Woodlot S-23 within the Valecraft Homes lands will be similar in size to the retained portion of the feature within the Minto Communities lands. Both MES (2019a) and MES (2019c) note that the limits of the retained area of Woodlot S-23 will depend on the final detailed design of the SWM pond.

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Per the KNUEA EMP, it is recommended that all trees within the Study Area that occur outside of the limits of the future SWM pond blocks should be preserved (Novatech 2016b). In addition, wherever feasible, trees that occur along the edge of the retained area should also be preserved. The only potentially retainable tree (healthy) that currently occurs along the anticipated edge of the SWM pond blocks is Tree #49, which is approximately 4 m from the edge of the anticipated retained area. If feasible and compatible with the SWM pond design, Tree #49 should be preserved adjacent to the edge of the retained area during the development of the SWM pond.

Based on the estimated limits of the SWM pond shown in Appendix B, the proposed extent of tree retention will result in retention of approximately 55% of the large trees within the Study Area (this assumes that Tree #49 is preserved along the edge of the retained area). Notably, the extent of tree retention will preserve approximately 58% of the potentially retainable (healthy) large trees within the Study Area. In addition, the retained area will preserve the majority of the Fresh-Moist White Cedar – Hardwood Mixed Forest and a portion of the Dry-Fresh Sugar Maple – Ash Deciduous Forest, which are the two (2) forest communities that are oldest and which include the highest densities of large trees within the Study Area (Refer to Appendix B for additional detail).

The Large Tree Inventory concludes that it is anticipated that the core of Woodlot S-23 will ultimately be retained. Based on the estimated limits of the SWM pond, the proposed extent of tree retention will result in retention of the majority of the healthy large trees found within the Study Area. As described in greater detail in Appendix B, it is anticipated that the extent of tree retention is sufficient to preserve the significant features and functions of Woodlot S-23. Refer to Appendix B for additional detail, including detailed survey results, mitigation requirements, and planting recommendations.

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4.0 HEADWATERS DRAINAGE ASSESSMENT RESULTS AND RECOMMENDATIONS - SUMMARY

The full Headwaters Drainage Assessment (HDA) is presented under separate cover (MES 2019b). For the purposes of this Addendum #1, the HDA results and recommendations are summarized below. The HDA survey sites are shown below in Figure 3.

MES (2019b) concludes that the Northern Field Drainage Channel (Survey Site #1 upstream (north)) and the Ephemeral Farm Drainage Channels (Survey Sites #4 and #5) are not considered significant ecological features, and hence they will be decommissioned during the development. This is consistent with the recommendations of the KNUEA Environmental Management Plan (EMP) (Novatech 2016b). These features do not provide significant fish or amphibian habitat functionality. The TRCA (2014) Classification Criteria and Management Recommendations require implementation of mitigation measures to address the potential impacts of the removal of the Northern Field Drainage Channel and the Ephemeral Farm Drainage Channels. The primary ecological effects that may result from the removal of the Northern Field Drainage Channel and the Ephemeral Farm Drainage Channels may include a reduction in the flow of water and nutrients to downstream areas. Mitigation measures pertaining to the hydrological functions of the Northern Field Drainage Channel and the Ephemeral Farm Drainage Channels will be addressed by the stormwater management and servicing studies. The stormwater management and servicing studies will consider Low Impact Development options, in order to potentially mitigate impacts to the water balance of the Site. As described in MES (2019b), as part of the realignment of the North Tributary, habitat enhancement features will be constructed within the minimum 40 m wide watercourse corridor. The habitat enhancement features are anticipated to be sufficient to replace the limited biological functions of the Northern Field Drainage Channel and the Ephemeral Farm Drainage Channels, in addition to providing habitat compensation for Blanding's Turtles (threatened) (Refer to MES 2019a for additional discussion regarding Blanding's Turtles).

The North Tributary (Survey Sites #1 to #3, excluding Survey Site #1 upstream (north)) can be characterized as a highly degraded agricultural watercourse, which is channelized throughout the majority of the Site. Although water depths are minimal by mid-summer, all segments remained hydrated in 2019. The North Tributary riparian vegetation is highly degraded, with woody cover limited to Deciduous Hedgerow B (Refer to Figure 2, above). Otherwise, the riparian zone is dominated by cropland and March Road. The density of amphibian calling within the North Tributary was very low (one (1) observation across three (3) survey visits), and was not sufficient to be considered Significant Wildlife Habitat for amphibian breeding (OMNRF 2014a). The North Tributary provides low quality fish habitat for common warm water species. As a whole, the North Tributary can be characterized as a

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highly degraded agricultural watercourse that provides common ecological functions. The North Tributary (excluding the Northern Field Drainage Channel) is designated as Blanding's Turtle Category 2 habitat. The presence of Blanding's Turtle habitat represents the most significant natural function provided by the watercourse. However, it should be noted that the Blanding's Turtle habitat throughout the Site has been described as low quality and highly degraded habitat for the species (Refer to MES 2019a for additional discussion regarding Blanding's Turtles).

The TRCA (2014) Classification Criteria and Management Recommendations require implementation of protection measures to retain and/or enhance the significant ecological functions of the North Tributary. As discussed in MES (2019b), the North Tributary will be realigned into a 40 m wide watercourse corridor as part of the Site development. Habitat enhancement and restoration works will be undertaken as part of the realignment, which are anticipated to improve the quality of habitat for Blanding's Turtle, fish, and amphibians compared to existing conditions. The habitat enhancement requirements and mitigation measures are described in detail in MES (2019a) and MES (2019b). Ultimately, it is anticipated that the habitat enhancement requirements for Blanding's Turtle (threatened) will be mandated by a forthcoming Overall Benefit Permit under the Ontario Endangered Species Act.

Provided that the habitat enhancement and mitigation measures are implemented appropriately during the realignment of the North Tributary and the decommissioning of the Northern Field Drainage Channel/Ephemeral Farm Drainage Channels, MES (2019b) concludes that the planned development is not anticipated to significantly negatively impact the natural features and functions of the Site. Refer to MES (2019b) for additional detail, including detailed survey results, mitigation requirements, and recommendations.

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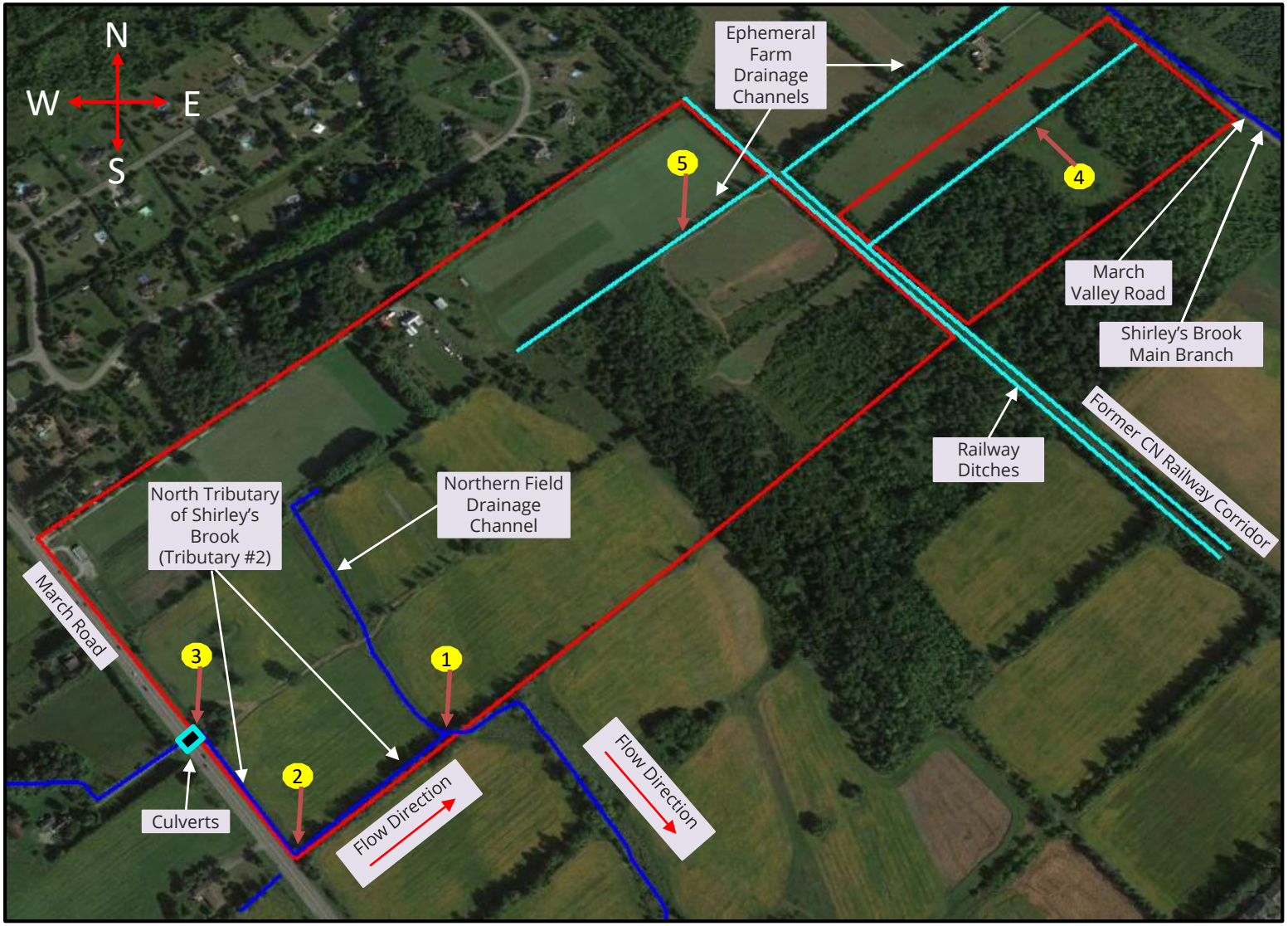
FIGURE 3: HDA SURVEY SITES

Valecraft Kanata North Development (1020 & 1070 March Road)
Combined Environmental Impact Statement and Tree Conservation Report – Addendum #1



Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

5.0 SPECIES AT RISK SURVEY RESULTS

Updated bird and wildlife species lists are included in Appendix A. During the 2019 Breeding Bird Survey, a total of sixty (60) bird species were noted within the Site. Fifty five (55) of these species were previously documented within the Site, as described in Section 3.6 of MES (2019a). The species that were newly documented within the Site in 2019 included Great Egret, Green Heron, Spotted Sandpiper, Grasshopper Sparrow (special concern), and Bobolink (threatened). The majority of the sixty (60) bird species are common species found in urban and suburban environments throughout the Ottawa area.

Three (3) avian Species at Risk were noted within the Site during the 2019 survey. These included Grasshopper Sparrow (special concern), Bobolink (threatened), and Eastern Wood Pewee (special concern). Grasshopper Sparrow and Bobolink are discussed below. As described in Section 3.7.5 of MES (2019a), Eastern Wood Pewee were previously documented in the western part of Woodlot S-23 during bird surveys completed within the Minto Communities portion of the woodlot in 2018. During the 2019 breeding bird surveys, Eastern Wood Pewee were again documented in the same location (heard calling south of Breeding Bird Survey Point #5, Refer to Figure 4). There were no significant changes in the distribution or abundance of Eastern Wood Pewee within the Site in 2019, compared to what was described in MES (2019a) based on the previous sightings of the species. As such, the results, impact assessment, and mitigation requirements concerning Eastern Wood Pewee remain unchanged, and therefore are not reiterated in this Addendum #1. Refer to MES (2019a) for further details regarding Eastern Wood Pewee.

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FIGURE 4: BIRD SURVEY POINTS

Valecraft Kanata North Development (1020 & 1070 March Road)
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- Site Boundary
B2 - Bird Survey Points

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

5.1 Grassland Birds

Section 3.3.5 of MES (2019a) noted that the majority of the Site is dominated by open habitats including Cultivated Fields and Fallow Agricultural Fields. It was further noted that farming within the Site is continuously rotated between the fields, such that a portion of the agricultural fields are fallow at any given time. Figure 5 shows the open habitats within the Site. Figure 5 has been updated to reflect the extent of cultivation observed within the Site during the 2019 growing season (e.g. June 2019). As shown in Figure 5, the majority of the open areas of the Site were cultivated in 2019. The majority of the Cultivated Fields were planted with soybeans, although small areas were planted with berry rows, and a small apple orchard and lawn were also present. Five (5) patches of Fallow Agricultural Field (Forb Meadow) were found within the Site. One (1) field consisting of Fallow Agricultural Field (Graminoid Meadow) was present east of the Former CN Railway Corridor. The Fallow Agricultural Field (Graminoid Meadow) occurs partially within the lands owned by Valecraft Homes, and partially within a neighboring property to the north. The plant species found within the Fallow Agricultural Fields (Forb Meadow) and the Fallow Agricultural Field (Graminoid Meadow) are described in Section 3.3.5 of MES (2019a).

The *General Habitat Description for Bobolink* (OMNRF 2014d) describes suitable breeding habitat for Bobolink (threatened) as natural tallgrass prairies, open meadows, pastures, fallow fields, and hayfields. Eastern Meadowlark (threatened) and Grasshopper Sparrow (special concern) are found in similar habitats (OMNRF 2014e; SARO 2019). All three (3) grassland species prefer to nest in open habitats that are graminoid dominated (grass dominated). None of the three (3) species is likely to be found nesting in fields cultivated with soybeans and/or fallow fields that are overgrown and dominated by forbs (OMNRF 2014d; OMNRF 2014e; SARO 2019).

No evidence of Eastern Meadowlark was documented anywhere within the Site during the 2019 Breeding Bird Survey. No evidence of Grasshopper Sparrow and/or Bobolink was documented within any of the Cultivated Fields and/or Fallow Agricultural Fields (Forb Meadow).

On June 18th and June 26th, 2019, both Bobolink and Grasshopper Sparrow were seen and heard in the vicinity of Breeding Bird Survey Points #4 and #5 (Refer to Figure 6). On both occasions, both male and female Bobolink were seen. Multiple sightings of these species during the breeding season strongly suggests that both Bobolink and Grasshopper Sparrow are breeding within the Site in the Fallow Agricultural Field (Graminoid Meadow) east of the Former CN Railway Corridor. Only one (1) male and one (1) female Bobolink was observed during each survey visit, suggesting that only one (1) breeding territory was present. Grasshopper Sparrows occupy smaller territories than Bobolink, and hence several Grasshopper Sparrow breeding pairs may have been present.

Bobolink are a threatened species, and therefore their habitat is protected under the Ontario Endangered Species Act. The estimated extent of Bobolink habitat is shown in Figure 6. Grasshopper Sparrow are a species of special concern, and therefore their habitat is not protected under the Ontario Endangered Species Act. Grasshopper Sparrows utilize similar habitat as Bobolink, and therefore it can be assumed that the extent of their habitat is similar to the Bobolink habitat shown in Figure 6. Mitigation and regulatory requirements for Bobolink and Grasshopper Sparrow are described below in Section 6.0.

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FIGURE 5: OPEN HABITATS

Valecraft Kanata North Development (1020 & 1070 March Road)
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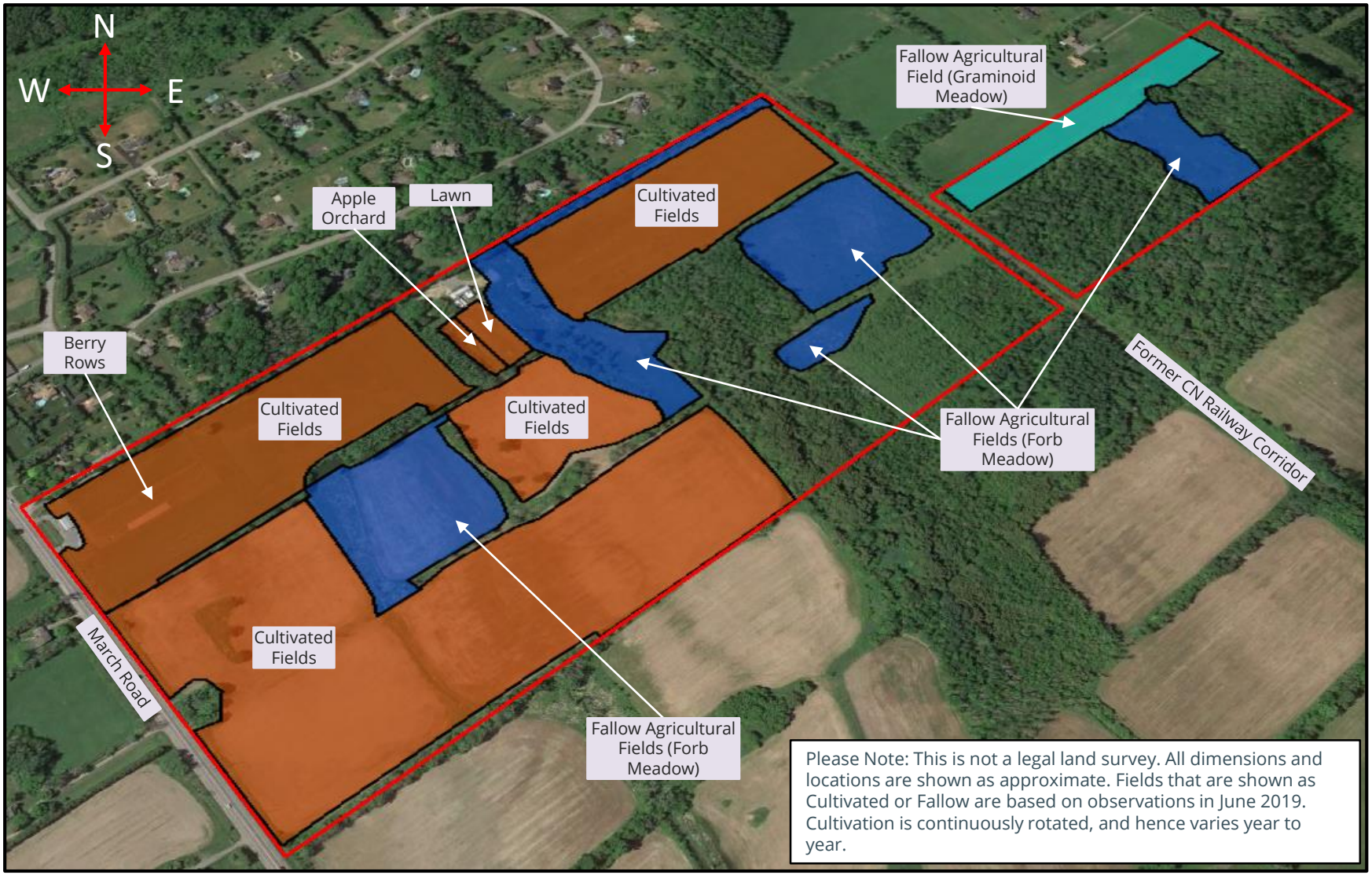

- Site Boundary

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FIGURE 6: BOBOLINK HABITAT

Valecraft Kanata North Development (1020 & 1070 March Road)
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- Site Boundary
B2 - Bird Survey Points

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

Photograph 1: Looking west at the Cultivated Field in the vicinity of Bird Survey Point #8 (June 11th, 2019).

Photograph 2: Looking southeast at the Cultivated Field in the vicinity of Bird Survey Points #2 and #3 (June 11th, 2019).

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Photograph 3: Looking east at the Fallow Agricultural Field (Graminoid Meadow) in the vicinity of Bird Survey Points #4 and #5 (June 11th, 2019).

Photograph 4: Male Bobolink at Bird Survey Point #5 (June 18th, 2019).

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Photograph 5: Female Bobolink at Bird Survey Point #5 (June 18th, 2019).

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5.2 Barn Swallow and Chimney Swift

No Barn Swallows (threatened) and/or Chimney Swifts (threatened) were seen foraging within the Site during the 2019 Breeding Bird Surveys. A total of three (3) structures were present within the Site during the 2019 Breeding Bird Survey season. These included Building #1 (Wooden Greenhouse), Building #2 (Glass and Metal Greenhouse), and Building #3 (Gazebo). Photographs of the structures are included below. None of the three (3) structures closely matched the types of buildings that typically attract Barn Swallow nesting (e.g. Barns, sheds, culverts, silos, etc.) (SARO 2019). On June 11th, 2019, all exterior and interior surfaces of the structures were searched for evidence of Barn Swallow nesting, and no evidence of Barn Swallows was noted. None of the three (3) structures have chimneys, and therefore none of the three (3) structures are likely to provide nesting habitat for Chimney Swifts. Due to the absence of potentially suitable nesting habitat for both species, Barn Swallows and Chimney Swifts are unlikely to be a concern for the proposed development.

Photograph 6: Looking north at Building #1 (Wooden Greenhouse) (June 11th, 2019).

Photograph 7: Looking north at Building #2 (Glass and Metal Greenhouse) (June 11th, 2019).

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Photograph 8: Looking west at Building #3 (Gazebo) (June 11th, 2019).

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5.3 Eastern Whip Poor Will

Eastern Whip Poor Will call surveys were completed throughout the KNUEA in 2014 to support the KNUEA Environmental Management Plan (EMP), and no evidence of Eastern Whip Poor Will was noted (MEP 2016). Figure 7 shows the 2019 Eastern Whip Poor Will survey points. The 2019 Eastern Whip Poor Will survey results are summarized below in Table A. As noted in Table A, no evidence of Eastern Whip Poor Will was noted within the Site in 2019. Other species heard calling during the Eastern Whip Poor Will surveys included Killdeer, Spotted Sandpiper, Green Frog, American Toad, and Grey Treefrog.

The *General Habitat Description for the Eastern Whip Poor Will* (OMNRF 2014b) describes Eastern Whip Poor Will breeding habitat as "…open and half treed areas (which) often exhibit a scattered distribution of treed and open space…" Suitable breeding habitats generally consist of a 'mosaic' of open, half treed, and closed conditions (Garlapow 2007). The Site generally does not provide the mosaic of half treed conditions preferred by Eastern Whip Poor Will. Therefore, Eastern Whip Poor Will are unlikely to be a concern for the proposed development.

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FIGURE 7: WPWI SURVEY POINTS

Valecraft Kanata North Development (1020 & 1070 March Road)
Combined Environmental Impact Statement and Tree Conservation Report – Addendum #1

- Site Boundary
- Whip Poor Will Survey Points

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

TABLE A: WHIP POOR WILL SURVEY RESULTS						
Survey Date	**Temperature**	**Conditions**	**Wind Speed**	**Start Time**	**Whip Poor Will Calls**	**Other Species**
May 21st	14°C	95% Clear	11 kph	9:00 PM	None	WPW 1 - *None* WPW 2 - *None* WPW 3 -*None* WPW 4 - *None* WPW 5 - Killdeer
June 11th	15°C	100% Clear	8 kph	9:30 PM	None	WPW 1 - Green Frog, Grey Treefrog, American Toad, and Spring Peeper in Distance WPW 2 - *None* WPW 3 -*None* WPW 4 - Killdeer WPW 5 - Killdeer
June 18th	22°C	60% Clear	6 kph	9:35 PM	None	WPW 1 - Killdeer, Grey Treefrog, Spotted Sandpiper, American Toad WPW 2 - *None* WPW 3 -*None* WPW 4 - *None* WPW 5 - Killdeer, Spotted Sandpiper

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6.0 ADDITIONAL MITIGATION AND REGULATORY REQUIREMENTS

As described above, additional mitigation measures and recommendations related to the Large Tree Inventory have been summarized in Section 3.0 of this letter. Refer to Appendix B for further details. In addition, additional mitigation measures and recommendations related to the Headwaters Drainage Assessment have been summarized in Section 4.0 of this letter. Refer to MES (2019b) for further details. The presence of Eastern Wood Pewee and related mitigation requirements were previously discussed in MES (2019a).

In addition to those mitigation requirements and recommendations referred to above, as well as those described in detail in MES (2019a), the following additional mitigation measures and regulatory requirements are recommended in order to address the presence of Bobolink (threatened) and Grasshopper Sparrow (special concern) habitat within the Site.

Bobolink are a threatened species, and therefore their habitat is protected under the rules and regulations of the Ontario Endangered Species Act. Grasshopper Sparrow are a species of special concern, and therefore their habitat is not protected under the rules and regulations of the Ontario Endangered Species Act. However, given that the Grasshopper Sparrow habitat approximately overlaps the Bobolink habitat within the Site, by default any mitigation measures implemented to protect Bobolink and/or their habitat are likely to be equally effective in protecting Grasshopper Sparrow and/or their habitat.

The Bobolink habitat occurs east of the Former CN Railway Corridor, north of the limits of Woodlot S-23 (e.g. beyond the edge of the City of Ottawa urban area). As described in MES (2019a), the only development activities that are currently proposed to occur east of the Former CN Railway Corridor include those associated with the installation of the Stormwater Management (SWM) pond that will service the Valecraft Homes and Minto Communities Kanata North developments. The KNUEA Environmental Management Plan (EMP) states that the western portion of Woodlot S-23 is to be retained as a natural heritage feature and conveyed to the City of Ottawa (Novatech 2016b). The eastern portion of Woodlot S-23 will accommodate the new SWM Pond. The SWM Pond itself was shown to occur within the portions of Woodlot S-23 and the surrounding areas of recent regrowth that are currently forested, thicket, or Fallow Agricultural Field (Forb Meadow). As such, the installation of the SWM Pond will occur outside of the area of Bobolink habitat (which includes the Fallow Agricultural Field (Graminoid Meadow) found adjacent to Woodlot S-23). The KNUEA EMP specifies that the proposed inlet channels to the new SWM pond will be built outside the limits of Woodlot S-23 (e.g. within the area identified as Bobolink habitat) (Novatech 2016b). The installation of the inlet

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channels is the only significant development activity currently proposed within the Bobolink habitat. The following mitigation measures are recommended for work within the Bobolink habitat:

- As described in Section 3.3.5 of MES (2019a), the extent of Bobolink habitat found within the Site varies from year to year, depending on which fields are under cultivation and which have been left fallow. As such, the extent of Bobolink habitat found in the proposed location of the inlet channels (e.g. in the field north of Woodlot S-23) should be re-evaluated in the growing season prior to the commencement of development, in order to document the extent of Bobolink habitat at the time of development;
- If Bobolink habitat continues to be present at the time of the proposed installation of the inlet channels, then all vegetation removal, excavation, construction, and site preparation activities that overlap the Bobolink habitat must be scheduled to avoid the Bobolink nesting season, which is defined as May 1st to July 31st each year (SARO 2019);
- If Bobolink habitat continues to be present at the time of the proposed installation of the inlet channels, then the *Species at Risk and Wildlife Construction Stage Mitigation Measures – Terrestrial*, which are described in detail in Section 4.4.6 of MES (2019a), must also be implemented. These mitigation measures include requirements for pre-stressing, sweeps, awareness training, inspections, vehicle operations, general site management provisions, and timing windows. Refer to Section 4.4.6 of MES (2019a) for additional detail;
- The inlet channels are intended to consist of open stormwater swales, which will convey surface flows to the SWM Pond following major storm events. The inlet channels will be constructed by undertaking minor grading works and may potentially include the installation of sediment and erosion control features. The inlet channels will be minor grading features, which are not anticipated to permanently remove any significant habitat areas and/or to significantly negatively impact the ability of the Fallow Agricultural Field (Graminoid Meadow) to provide Bobolink habitat. Once installation is complete, the presence of the inlet channels is unlikely to result in a significant detriment to the functionality of the Bobolink habitat. Therefore, it is not anticipated that an authorization under the Ontario Endangered Species Act with respect to Bobolink habitat is likely to be required to support the installation of the inlet channels; and
- As noted above, if Bobolink habitat continues to be present at the time of the proposed installation of the inlet channels, then installation of the inlet channels should occur outside of the Bobolink breeding season. Once installation is complete, the area must be restored by seeding all disturbed/bare areas with a native grassland seed mix, which must include seeds for at least three (3) native grass species, including at least one (1) species that grows to a height of 50 cm or more.

7.0 CLOSURE

The purpose of this letter is to provide Addendum #1 to the Combined Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) (MES 2019a). This Addendum #1 includes a summary of the Large Tree Inventory results and a summary of the Headwaters Drainage Assessment (HDA) report. The full results of the Large Tree Inventory have been presented in a separate letter, which is included in Appendix B. The HDA report has been prepared under separate cover (MES 2019b). This letter also provides the results of the additional Species at Risk (SAR) surveys completed in 2019.

As described above, additional mitigation measures and recommendations related to the Large Tree Inventory have been summarized in this letter. Refer to Appendix B for further details. In addition, additional mitigation measures and recommendations related to the Headwaters Drainage Assessment have been summarized in this letter. Refer to MES (2019b) for further details. The presence of Eastern Wood Pewee and related mitigation requirements were previously discussed in MES (2019a). In addition to those mitigation requirements and recommendations referred to above, as well as those described in detail in MES (2019a), additional mitigation and regulatory requirements have been described in this letter in order to address the presence of Bobolink and Grasshopper Sparrow within the Site.

Pending that the regulatory, mitigation, and avoidance measures outlined in this letter are implemented appropriately, in addition to those outlined in Appendix B, MES (2019a), and MES (2019b), the development of the Site is not anticipated to have a significant negative effect on the natural features and functions.

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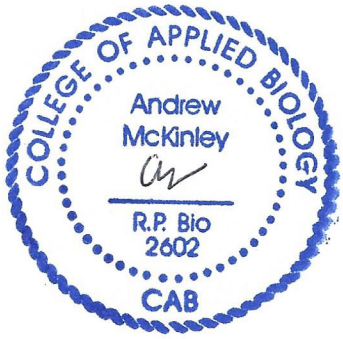
We trust that the above information is sufficient; should you have any questions or require further information, please do not hesitate to contact the undersigned, at your convenience.

Sincerely,



Dr. Andrew McKinley, EP, RP Bio.
Senior Biologist, McKinley Environmental Solutions

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APPENDIX A

Updated Bird and Wildlife Species Lists

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TABLE A: BIRDS	
Common Name	**Scientific Name**
Spotted Sandpiper	Actitis macularius
Red-winged Blackbird	Agelaius phoeniceus
Grasshopper Sparrow - Special Concern	***Ammodramus savannarum***
Mallard	Anas fulvigula
Great Egret	Ardea alba
Cedar Waxwing	Bombycilla cedrorum
Ruffed Grouse	Bonasa umbellus
Canada Goose	Branta canadensis
Red-tailed Hawk	Buteo jamaicensis
Green Heron	Butorides virescens
Northern Cardinal	Cardinalis cardinalis
Turkey Vulture	Cathartes aura
Veery	Catharus fuscescens
Killdeer	Charadrius vociferus
Northern Harrier	Circus cyaneus
Black-billed Cuckoo	Coccyzus erythropthalmus
Northern Flicker	Colaptes auratus
Eastern Wood-Pewee - Special Concern	***Contopus virens***
American Crow	Corvus brachyrhynchos
Blue Jay	Cyanocitta cristata
Bobolink - Threatened	***Dolichonyx oryzivorus***
Pileated Woodpecker	Dryocopus pileatus
Gray Catbird	Dumetella carolinensis
Alder Flycatcher	Empidonax alnorum
Common Yellowthroat	Geothlypis trichas
Barn Swallow - Threatened	***Hirundo rustica***
Baltimore Oriole	Icterus galbula

Ring-billed Gull	Larus delawarensis
Wild Turkey	Meleagris gallopavo
Swamp Sparrow	Melospiza georgiana
Song Sparrow	Melospiza melodia
Black-and-white Warbler	Mniotilta varia
Great Crested Flycatcher	Myiarchus crinitus
Savannah Sparrow	Passerculus sandwichensis
Indigo Bunting	Passerina cyanea
Rose-breasted Grosbeak	Pheucticus ludovicianus
Downy Woodpecker	Picoides pubescens
Hairy Woodpecker	Picoides villosus
Black-capped Chickadee	Poecile atricapilla
Common Grackle	Quiscalus quiscula
Eastern Phoebe	Sayornis phoebe
American Woodcock	Scolopax minor
Ovenbird	Seiurus aurocapilla
Yellow-rumped Warbler	Setophaga coronata
Chestnut-sided Warbler	Setophaga pensylvanica
Yellow Warbler	Setophaga petechia
White-breasted Nuthatch	Sitta carolinensis
American Goldfinch	Spinus tristis
Clay-colored Sparrow	Spizella pallida
Chipping Sparrow	Spizella passerina
Field Sparrow	Spizella pusilla
European Starling	Sturnus vulgaris
Tree Swallow	Tachycineta bicolor
Brown Thrasher	Toxostoma rufum
House Wren	Troglodytes aedon
American Robin	Turdus migratorius

Eastern Kingbird	Tyrannus tyrannus
Red-eyed Vireo	Vireo olivaceus
Mourning Dove	Zenaida macroura
White-throated Sparrow	Zonotrichia albicollis

TABLE B: OTHER WILDLIFE	
Common Name	**Scientific Name**
Coyote	Canis latrans
Beaver	Castor canadensis
Groundhog	Marmota monax
White Tailed Deer	Odocoileus virginianus
Muskrat	Ondatra zibethicus
Common Raccoon	Procyon lotor
Eastern Grey Squirrel	Sciurus carolinensis
Red Squirrel	Sciurus vulgaris
Eastern Chipmunk	Tamias striatus
American Toad	Anaxyrus americanus
Grey Treefrog	Hyla versicolor
Green Frog	Lithobates clamitans
Northern Leopard Frog	Lithobates pipiens
Snapping Turtle - Special Concern	***Chelydra serpentina***
Common Garter Snake	Thamnophis sirtalis

APPENDIX B

Woodlot S-23 Large Tree Inventory

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Minto Communities / Valecraft Homes Ltd.
200-180 Kent Street / 1455 Youville Drive, Suite 210
Ottawa, ON, K1P 0B6 / Orleans, Ontario, K1C 6Z7

June 3rd, 2019

Attn: Beth Henderson, Senior Land Development Manager – Minto Communities
Danny Page, Manager of Planning and Land Development – Valecraft Homes

RE: Woodlot S-23 Large Tree Inventory – Minto Communities and Valecraft Homes Kanata North Developments

1.0 BACKGROUND AND PURPOSE

McKinley Environmental Solutions (MES) was previously retained by Minto Communities (Minto) to prepare the *Combined Environmental Impact Statement and Tree Conservation Report (Revised) – Minto Communities and 2559688 Ontario Inc. Kanata North Development (936 March Road)* (dated May 2019) (MES 2019a). MES was also previously retained by Valecraft Homes (Valecraft) to prepare the *Combined Environmental Impact Statement and Tree Conservation Report – Valecraft Kanata North Development (1020 & 1070 March Road)* (dated April 2019) (MES 2019b). MES (2019a) was prepared to support the proposed development of the Minto and 2559688 Ontario Inc. Kanata North property (936 March Road) which includes the Southeast Quadrant of the Kanata North Urban Expansion Area (KNUEA). MES (2019b) was prepared to support the proposed development of the Valecraft Kanata North property (1020 & 1070 March Road) which includes the Northeast Quadrant of the KNUEA.

The KNUEA Community Design Plan (CDP) and Environmental Management Plan (EMP) identify that a new Stormwater Management (SWM) pond will be constructed east of the Former CN Railway Corridor in order to provide SWM servicing for both the KNUEA Northeast and Southeast Quadrants (the Minto and Valecraft developments) (Novatech 2016a; Novatech 2016b). The CDP and EMP state that "*The eastern portion of Woodlot S-23 (referred to in the EMP as the 'northeast forest') is the recommended location of the SWM pond that will service the lands east of March Road. The remaining areas of Woodlot S-23 will be retained and conveyed to the City once the detailed design of the SWM pond has been*

confirmed." The EMP also specifies that the proposed inlet channels to the new SWM pond will be built outside the limits of Woodlot S-23 (Novatech 2016b).

As described in MES (2019a), the Draft Plan of Subdivision for the Minto development identified an approximately 2.4 ha block that is anticipated to include the retained portion of Woodlot S-23 within the Minto property. The anticipated limits of the SWM pond within the Valecraft lands was not identified in MES (2019b), however, it was noted that it is anticipated that the core of Woodlot S-23 will ultimately be retained. For the purposes of this Large Tree Inventory, it is assumed that the retained portion of Woodlot S-23 within the Valecraft lands will be similar in size to the retained portion of the feature within the Minto lands. Both MES (2019a) and MES (2019b) note that the limits of the retained area of Woodlot S-23 will depend on the final detailed design of the SWM pond.

Following review of the Minto Draft Plan of Subdivision Application, the City of Ottawa requested that further detail be provided with regards to the location of large trees within Woodlot S-23, as well as potential impacts to large trees which may result from the proposed SWM pond. The purpose of this letter is to provide a Large Tree Inventory within the portions of the Minto and Valecraft properties that occur east of the Former CN Railway Corridor (including Woodlot S-23 and surrounding recent regrowth habitats). In addition, the health status of the large trees has been documented, and potential impacts on large trees have been quantified, based on the estimated extent of the SWM pond. Lastly, recommendations for tree retention and mitigation are provided.

This letter report is intended to provide supplemental information that expands upon the Combined Environmental Impact Statements (EIS) and Tree Conservation Reports (TCR) prepared for the Minto and Valecraft Kanata North developments. This letter report is intended to be read in conjunction with MES (2019a) and MES (2019b). Refer to MES 2019a and MES 2019b for further detail regarding the proposed developments, the presence of natural heritage features, potential impacts on natural heritage features, and recommended mitigation measures.

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2.0 STUDY AREA OVERVIEW

The Study Area addressed by this Large Tree Inventory includes the portions of the Minto and Valecraft properties that occur east of the Former CN Railway Corridor (Figure 1). The Study Area is approximately 14.6 ha in size. The north side of the Study Area is owned by Valecraft, whereas the south side is owned by Minto. Vegetation communities found within the Study Area are shown in Figure 2. For brevity, the vegetation communities are not described in detail as part of this Large Tree Inventory. A detailed description of each vegetation community, including plant species, photographs, tree species composition, and ages is included in MES (2019a) and MES (2019b).

The northwest portion of the Study Area (Valecraft) is dominated by a Fresh-Moist Poplar Deciduous Forest, which extends into the western part of the Minto property. As described in Section 3.2 of MES (2019b), historic air photos indicate that the majority of trees within the Fresh-Moist Poplar Deciduous Forest are approximately 20 to 30 years of age. The central part of the Valecraft property includes an open Fallow Agricultural Field (Graminoid Meadow) with little tree cover. The eastern part of the Valecraft property includes a young recent regrowth Fresh-Moist Ash – Elm Deciduous Forest. A Deciduous Hedgerow that is dominated by moderately aged Crack Willow occurs along the eastern edge of the Valecraft property, adjacent to March Valley Road.

As described in Section 3.2 of MES (2019a), the oldest trees within the Study Area occur in the western part of the Minto property. Historic air photos indicate that trees within the Fresh-Moist White Cedar – Hardwood Mixed Forest and the Dry-Fresh Sugar Maple – Ash Deciduous Forest are greater than 40 years of age. In contrast, the eastern part of the Minto property includes a recent regrowth Cultural Thicket that includes young recent regrowth stems.

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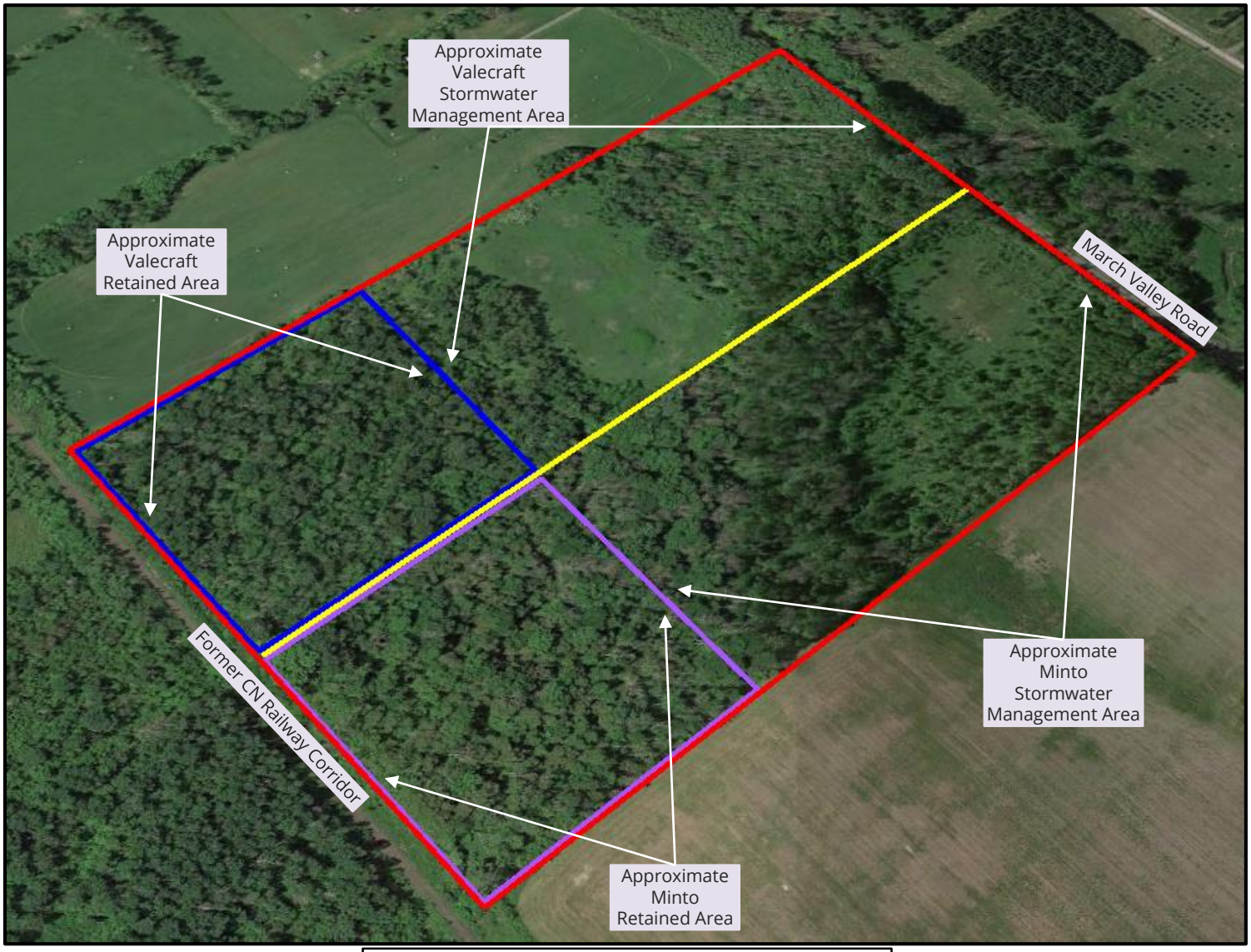
FIGURE 1: STUDY AREA OVERVIEW

Woodlot S-23 Large Tree Inventory

Minto Communities and Valecraft Homes Kanata North Developments



Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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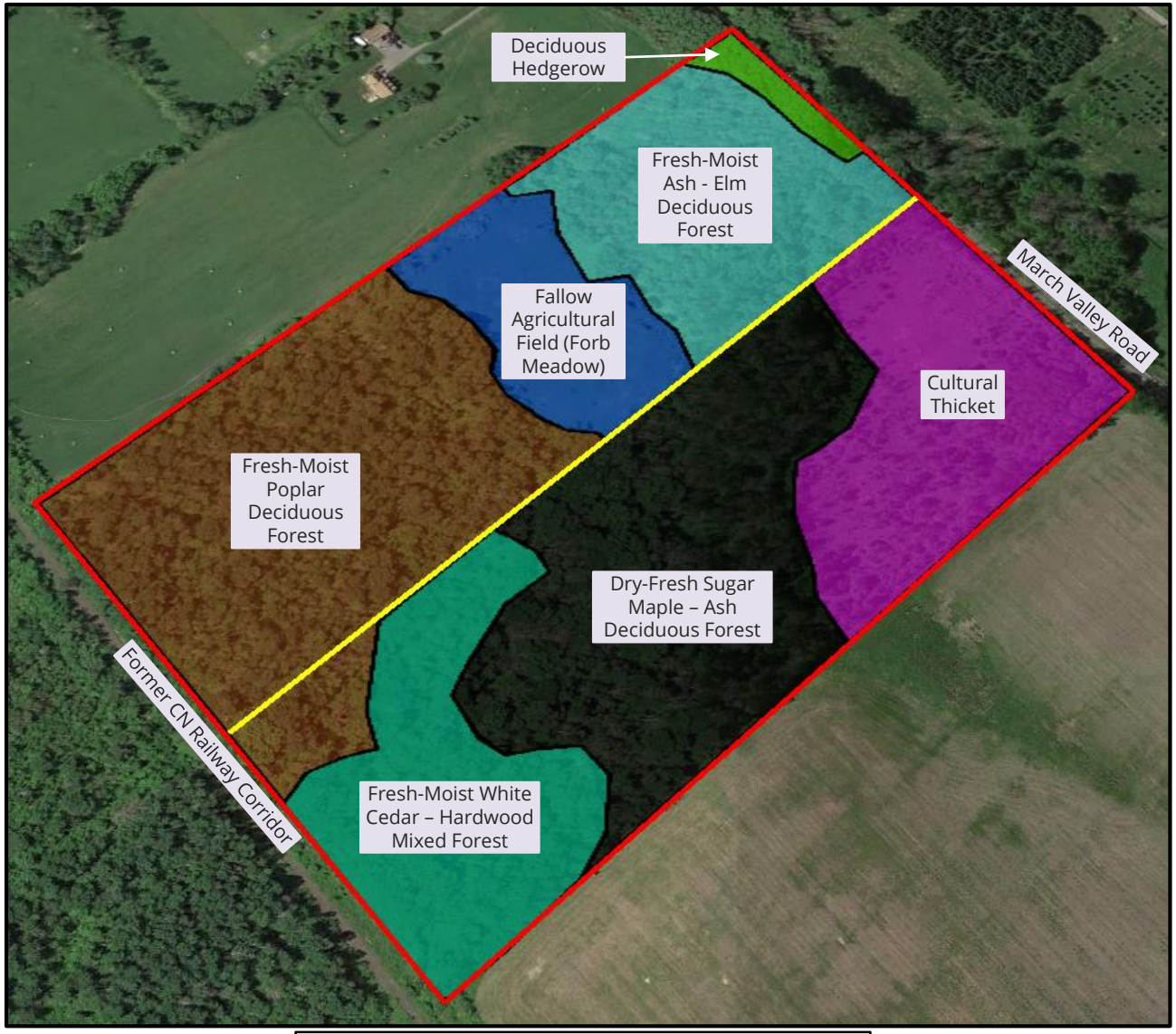
FIGURE 2: VEGETATION COMMUNITIES

Woodlot S-23 Large Tree Inventory

Minto Communities and Valecraft Homes Kanata North Developments



Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

3.0 METHODS

The vegetation communities and trees within the Study Area have previously been assessed in detail as part of the plant surveys and tree inventory described in MES (2019a) and MES (2019b). Refer to MES (2019a) and MES (2019b) for a detailed description of the plant surveys and tree inventory methods that have previously been employed. The previously completed plant surveys and tree inventory included multiple survey visits.

Large trees were defined as any trees that are ≥50 cm diameter at breast height (dbh) in size. In order to complete an inventory of large trees within the Study Area, additional site visits were undertaken on May 27th and May 30th, 2019. Conditions during the site visits included partly cloudy skies and 16 ºC and partly cloudy skies and 21 ºC on May 27th and May 30th (respectively). The site visits were undertaken in the late spring when the majority of trees were leafed out. Large trees were identified by undertaking transects through the Study Area that were spaced 25 m apart. Any trees along the transects that appeared approximately 50 cm in size or greater were measured through the use of a calibrated dbh tape. Trees were also identified to species and their condition was noted.

The condition of Butternut Trees (endangered) was described based on the results of the Butternut Health Assessments (BHAs) that have been completed in the Minto and Valecraft properties (Fleguel 2018a; Fleguel 2018b).

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4.0 LARGE TREE INVENTORY RESULTS

The results of the Large Tree Inventory are summarized below in Table A. Photographs of the trees are included in Appendix A. Large tree locations are shown below in Figure 3. In total, seventy six (76) trees ≥50 cm dbh in size were documented within the Study Area. In total, eleven (11) tree species with specimens ≥50 cm dbh in size were recorded. This included Butternut (21%, 16 trees), White Ash (17%, 13 trees), Bur Oak (15%, 11 trees), Trembling Aspen (12%, 9 trees), White Pine (9%, 7 trees), Sugar Maple (9%, 7 trees), White Cedar (7%, 5 trees), Yellow Birch (4%, 3 trees), Crack Willow (2.5%, 2 trees), Basswood (2.5%, 2 trees), and American Elm (1%, 1 tree). Notably, approximately 32% of the large trees (24 trees) were identified as non-retainable. Non-retainable trees included those that were dead, in poor condition, or those trees identified as Category 1 (Non-retainable) Butternut Trees by Fleguel (2018a) and Fleguel (2018b). Potentially retainable trees included any trees that were found to be in good condition and living during the Large Tree Inventory. The relatively high proportion of non-retainable trees is due to the fact that the two (2) most common species with specimens ≥50 cm dbh in size were Butternut (21%, 16 trees) and White Ash (17%, 13 trees). Butternut Trees are an endangered species, and many Butternuts are in decline due to the effects of the Butternut Canker disease. White Ash trees throughout the Ottawa area are also frequently in decline due to the effects of the invasive Emerald Ash Borer. Extensive evidence of damage to Butternut Trees and White Ash by the Butternut Canker/Emerald Ash Borer was noted throughout the Study Area. Notably, virtually all of the mature White Ash trees within the Study Area showed signs of damage from the Emerald Ash Borer.

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FIGURE 3: LARGE TREE LOCATIONS

Woodlot S-23 Large Tree Inventory

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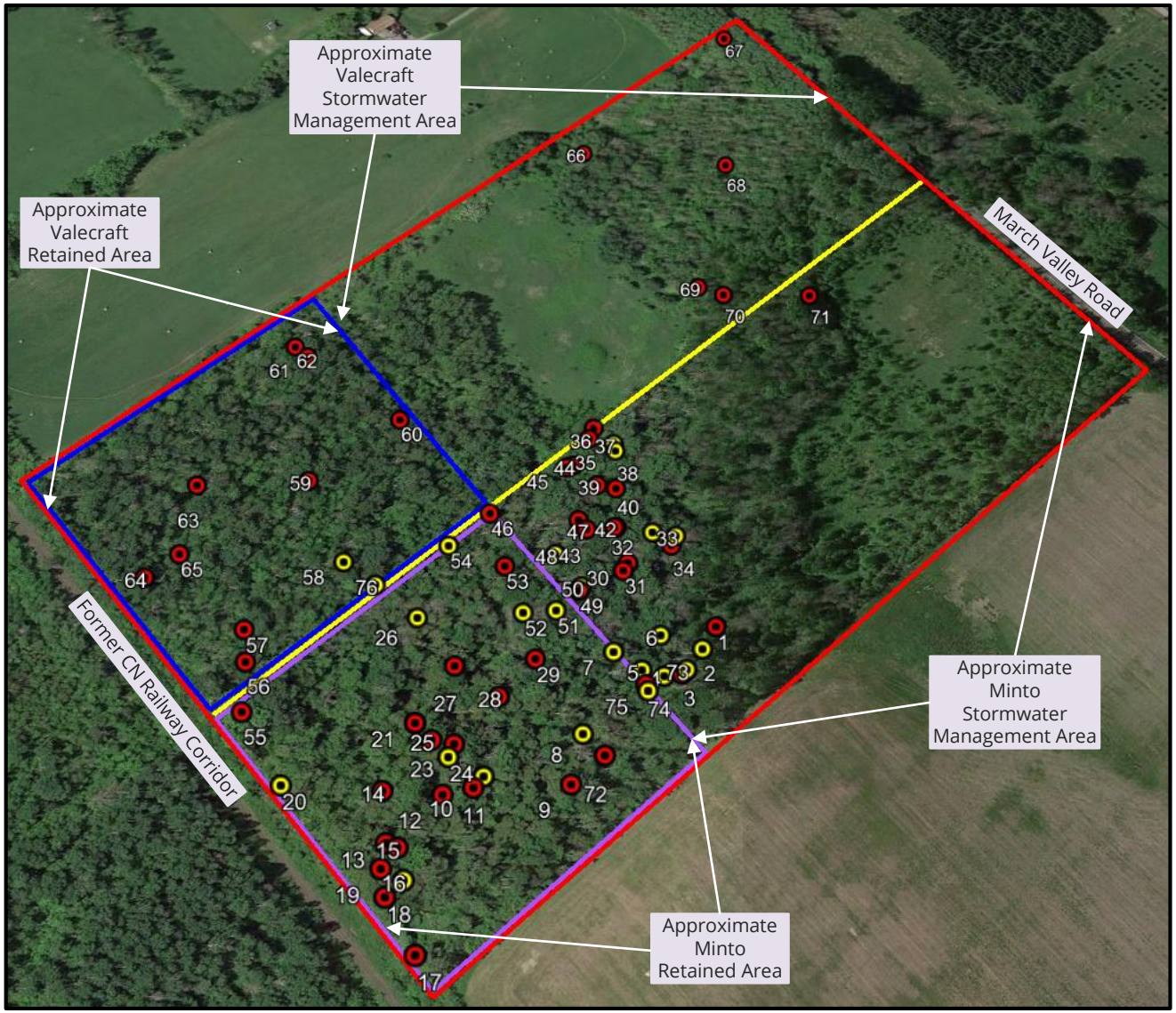

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. Potentially retainable trees include those identified in Table A as being in good condition, Category 2 Butternut Trees, and Category 3 Butternut Trees. Non-retainable trees include those identified in Table A as dead, in poor condition, and Category 1 Butternut Trees.

Table A: Large Tree Inventory Results

Tree #	Butternut Health Assessment #	Species	Diameter at Breast Height (dbh)	Condition	Location
1	N/A	Bur Oak (Quercus macrocarpa)	78	Good	SWM Pond
2	N/A	White Ash (Fraxinus americana)	57	Dead	SWM Pond
3	Minto Tree #182	Butternut (Juglans cinerea)	85	Category 3	SWM Pond
4	N/A	White Ash (Fraxinus americana)	57	Dead	SWM Pond
5	N/A	White Ash (Fraxinus americana)	50	Dead	SWM Pond
6	N/A	White Ash (Fraxinus americana)	64	Dead	SWM Pond
7	Minto Tree #187	Butternut (Juglans cinerea)	70	Category 1	Retained Area
8	N/A	White Ash (Fraxinus americana)	86	Dead	Retained Area
9	N/A	White Pine (Pinus strobus)	68	Good	Retained Area
10	N/A	White Cedar (Thuja occidentalis)	54	Good	Retained Area
11	N/A	White Cedar (Thuja occidentalis)	52	Dead	Retained Area
12	N/A	White Cedar (Thuja occidentalis)	59	Good	Retained Area
13	Minto Tree #201	Butternut (Juglans cinerea)	53	Category 3	Retained Area
14	Minto Tree #198	Butternut (Juglans cinerea)	67	Category 3	Retained Area
15	N/A	Bur Oak (Quercus macrocarpa)	69	Good	Retained Area
16	Minto Tree #221	Butternut (Juglans cinerea)	55	Category 1	Retained Area
17	N/A	White Pine (Pinus strobus)	74	Good	Retained Area
18	Minto Tree #202	Butternut (Juglans cinerea)	55	Category 2	Retained Area
19	N/A	White Cedar (Thuja occidentalis)	53	Good	Retained Area
20	Valecraft Tree #85	Butternut (Juglans cinerea)	55	Category 1	Retained Area
21	N/A	Bur Oak (Quercus macrocarpa)	54	Good	Retained Area
22	N/A	Bur Oak (Quercus macrocarpa)	61	Good	Retained Area
23	N/A	Bur Oak (Quercus macrocarpa)	72	Good	Retained Area
24	Minto Tree #196	Butternut (Juglans cinerea)	65	Category 1	Retained Area
25	Minto Tree #197	Butternut (Juglans cinerea)	57	Category 3	Retained Area
26	N/A	White Ash (Fraxinus americana)	59	Dead	Retained Area
27	N/A	Bur Oak (Quercus macrocarpa)	60	Good	Retained Area
28	N/A	Bur Oak (Quercus macrocarpa)	54	Good	Retained Area
29	N/A	Bur Oak (Quercus macrocarpa)	60	Good	Retained Area
30	N/A	Sugar Maple (Acer saccharum)	74	Good	SWM Pond

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Tree #	Butternut Health Assessment #	Species	Diameter at Breast Height (dbh)	Condition	Location
31	N/A	Sugar Maple (Acer saccharum)	59	Good	SWM Pond
32	N/A	White Ash (Fraxinus americana)	70	Dead	SWM Pond
33	N/A	White Ash (Fraxinus americana)	60	Dead	SWM Pond
34	N/A	Basswood (Tilia americana)	51	Good	SWM Pond
35	N/A	White Pine (Pinus strobus)	98	Good	SWM Pond
36	N/A	Bur Oak (Quercus macrocarpa)	50	Good	SWM Pond
37	N/A	White Ash (Fraxinus americana)	52	Dead	SWM Pond
38	N/A	Sugar Maple (Acer saccharum)	74	Poor	SWM Pond
39	N/A	Sugar Maple (Acer saccharum)	73	Good	SWM Pond
40	N/A	White Pine (Pinus strobus)	72	Good	SWM Pond
41	N/A	Sugar Maple (Acer saccharum)	55	Good	SWM Pond
42	N/A	Sugar Maple (Acer saccharum)	54	Good	SWM Pond
43	N/A	Yellow Birch (Betula alleghaniensis)	58	Good	SWM Pond
44	N/A	Yellow Birch (Betula alleghaniensis)	65	Good	SWM Pond
45	N/A	Yellow Birch (Betula alleghaniensis)	60	Good	SWM Pond
46	N/A	White Cedar (Thuja occidentalis)	53	Good	Retained Area
47	N/A	American Elm (Ulmus americana)	76	Good	SWM Pond
48	N/A	White Ash (Fraxinus americana)	53	Dead	SWM Pond
49	N/A	Sugar Maple (Acer saccharum)	120	Good	Healthy Edge Tree
50	N/A	Basswood (Tilia americana)	60	Poor	SWM Pond
51	N/A	White Ash (Fraxinus americana)	58	Dead	Retained Area
52	N/A	White Ash (Fraxinus americana)	90	Dead	Retained Area
53	Minto Tree #235	Butternut (Juglans cinerea)	59	Category 3	Retained Area
54	N/A	White Ash (Fraxinus americana)	76	Dead	Retained Area
55	N/A	Bur Oak (Quercus macrocarpa)	113	Good	Retained Area
56	Minto Tree #228	Butternut (Juglans cinerea)	71	Category 3	Retained Area
57	N/A	Trembling Aspen (Populus tremuloides)	55	Good	Retained Area
58	N/A	Trembling Aspen (Populus tremuloides)	55	Poor	Retained Area
59	N/A	Trembling Aspen (Populus tremuloides)	69	Good	Retained Area
60	N/A	Trembling Aspen (Populus tremuloides)	62	Good	Retained Area

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Tree #	Butternut Health Assessment #	Species	Diameter at Breast Height (dbh)	Condition	Location
61	N/A	Trembling Aspen (Populus tremuloides)	57	Good	Retained Area
62	N/A	Trembling Aspen (Populus tremuloides)	60	Good	Retained Area
63	N/A	Trembling Aspen (Populus tremuloides)	54	Good	Retained Area
64	N/A	Trembling Aspen (Populus tremuloides)	59	Good	Retained Area
65	N/A	Trembling Aspen (Populus tremuloides)	67	Good	Retained Area
66	N/A	Crack Willow (Salix fragilis)	>1m	Good	SWM Pond
67	N/A	Crack Willow (Salix fragilis)	2 Stems - 65/67	Good	SWM Pond
68	N/A	White Pine (Pinus strobus)	60	Good	SWM Pond
69	N/A	White Pine (Pinus strobus)	56	Good	SWM Pond
70	N/A	White Pine (Pinus strobus)	64	Good	SWM Pond
71	N/A	Bur Oak (Quercus macrocarpa)	62	Good	SWM Pond
72	Minto Tree #193	Butternut (Juglans cinerea)	50	Category 3	Retained Area
73	Minto Tree #184	Butternut (Juglans cinerea)	58	Category 1	SWM Pond
74	Minto Tree #185	Butternut (Juglans cinerea)	51	Category 3	SWM Pond
75	Minto Tree #186	Butternut (Juglans cinerea)	53	Category 1	SWM Pond
76	Minto Tree #234	Butternut (Juglans cinerea)	51	Category 1	Retained Area

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5.0 TREE RETENTION

The Kanata North Urban Expansion Area (KNUEA) Environmental Management Plan (EMP) stated that the western portion of Woodlot S-23 is to be retained as a natural heritage feature and conveyed to the City of Ottawa (Novatech 2016b). The limits of the retained area of Woodlot S-23 will depend on the final detailed design of the SWM pond. As described above, the Draft Plan of Subdivision for the Minto development identified an approximately 2.4 ha block that is anticipated to include the retained portion of Woodlot S-23 within the Minto property. The anticipated limits of the SWM pond within the Valecraft lands was not identified in MES (2019b), however, it was noted that it is anticipated that the core of Woodlot S-23 will ultimately be retained. For the purposes of this Large Tree Inventory, it is assumed that the retained portion of Woodlot S-23 within the Valecraft lands will be similar in size to the retained portion of the feature within the Minto lands. Both MES (2019a) and MES (2019b) note that the limits of the retained area of Woodlot S-23 will depend on the final detailed design of the SWM pond.

Per the KNUEA EMP, it is recommended that all trees within the Study Area that occur outside of the limits of the future SWM pond blocks should be preserved. In addition, wherever feasible, trees that occur along the edge of the retained area should also be preserved. Based on the estimated limits of the SWM pond shown above in Figures 1 to 3, the only potentially retainable tree (healthy) that currently occurs along the edge of the SWM pond blocks is Tree #49, which is approximately 4 m from the edge of the anticipated retained area. If feasible and compatible with the SWM pond design, Tree #49 should be preserved adjacent to the edge of the retained area during the development of the SWM pond.

Based on the estimated limits of the SWM pond shown above in Figures 1 to 3, the proposed extent of tree retention will result in retention of approximately 55% of the large trees within the Study Area (this assumes that Tree #49 is preserved along the edge of the retained area). Notably, the extent of tree retention will preserve approximately 58% of the potentially retainable (healthy) large trees within the Study Area. Notably, the retained area will preserve the majority of the Fresh-Moist White Cedar – Hardwood Mixed Forest and a portion of the Dry-Fresh Sugar Maple – Ash Deciduous Forest, which are the two (2) forest communities that are oldest and which include the highest densities of large trees within the Study Area.

6.0 SIGNIFICANT WOODLOT ASSESSMENT

MES (2019a) and MES (2019b) include a Significant Woodlot Assessment for Woodlot S-23. Both reports note that available evidence suggests that Woodlot S-23 may qualify as a Significant Woodlot due to the presence of a comparatively high density of older trees, the presence of interior forest habitat, and the presence of Significant Wildlife Habitat (due to breeding Eastern Wood Pewee). MES (2019a) and MES (2019b) note the majority of older trees, the interior forest habitat, and occurrences of Eastern Wood Pewee were all present primarily in the western part of Woodlot S-23. In contrast, the eastern portion of the feature is fragmented by additional openings, tree cover is younger, and occurrences of Eastern Pewee were not documented. As such, MES (2019a) and MES (2019b) conclude that the anticipated extent of tree preservation is anticipated to be sufficient to preserve the woodlot's significant features and functions. Refer to MES (2019a) and MES (2019b) for additional detail.

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7.0 TREE PRESERVATION MITIGATION MEASURES

The inlet channels to the new SWM pond will consist of buried pipes, which will be placed outside the limits of the retained portion of Woodlot S-23. Per the tree preservation mitigation measures described below, where feasible, the inlet pipes should be placed beyond the critical root zone of any boundary trees that occur along the edges of the retained portion of Woodlot S-23. This will ensure that the installation of the inlet pipes does not negatively impact the retained portion of Woodlot S-23. The following tree mitigation measures should be implemented to help protect and preserve retained trees:

- Mark the edge of the tree clearing area to ensure only designated trees are removed. Natural areas that are to be retained are to be isolated by sturdy construction fencing or similar barriers at least 1 m in height;
- Protect the critical root zone (CRZ) of retained trees, where the CRZ is established as being 10 cm from the trunk of a tree for every centimeter of trunk dbh. The CRZ is calculated as dbh x 10 cm;
- When trees to be removed overlap with the CRZ of trees to be retained, cut roots at the edge of the CRZ and grind down stumps after tree removal. Do not pull out stumps. Ensure there is not root pulling or disturbance of the ground within the CRZ;
- If roots must be cut, roots 20 mm or larger should be cut at right angles with clean, sharp horticultural tools without tearing, crushing, or pulling;
- Do not place any material or equipment within the CRZ of any tree;
- Do not attach any signs, notices, or posters to any tree;
- Do not damage the root system, trunk, or branches of any tree;
- Ensure that exhaust fumes from all equipment are directed away from any tree canopy; and
- Disturbed areas of retained natural features should be replanted with locally grown native species.

Additional mitigation measures to address potential impacts to wildlife and Species at Risk during tree clearing are described in MES (2019a) and MES (2019b). The mitigation measures described above are intended to be implemented in conjunction with those described in MES (2019a) and MES (2019b).

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8.0 REPLANTING

In order to mitigate the loss of woody vegetation from tree clearing, trees and shrubs will be replanted selectively surrounding the SWM pond. The planting locations and specific planting requirements will be confirmed by a detailed Landscaping Plan. Plantings should emphasize the use of native trees and shrubs, which may include those identified above (e.g. White Pine, White Cedar, Basswood, Sugar Maple, Bur Oak, and Trembling Aspen). Planting of White Ash or Green Ash trees should be avoided due to the high likelihood that any planted Ash trees will become infested with Emerald Ash Borer.

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9.0 CLOSURE

The Kanata North Urban Expansion Area (KNUEA) Environmental Management Plan (EMP) stated that the western portion of Woodlot S-23 is to be retained as a natural heritage feature and conveyed to the City of Ottawa (Novatech 2016b). The limits of the retained area of Woodlot S-23 will depend on the final detailed design of the SWM pond. As described above, it is anticipated that the core of Woodlot S-23 will ultimately be retained. Based on the estimated limits of the SWM pond shown above in Figures 1 to 3, the proposed extent of tree retention will result in retention of the majority of the healthy large trees found within the Study Area. As described in greater detail in MES (2019a) and MES (2019b), it is anticipated that the extent of tree retention is sufficient to preserve the significant features and functions of Woodlot S-23.

We trust that the above information is sufficient; should you have any questions or require further information, please do not hesitate to contact the undersigned, at your convenience.

Sincerely,

Dr. Andrew McKinley, EP, RP Bio.
Senior Biologist, McKinley Environmental Solutions

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mckinleyenvironmental@gmail.com
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10.0 REFERENCES

Fleguel, Rose (2018a) Butternut Health Assessment – 936 March Road, Kanata.

Fleguel, Rose (2018b) Butternut Health Assessment – 1020 & 1070 March Road, Kanata.

McKinley Environmental Solutions (MES) (2019a) Combined Environmental Impact Statement and Tree Conservation Report (Revised) – Minto Communities and 2559688 Ontario Inc. Kanata North Development (936 March Road).

McKinley Environmental Solutions (MES) (2019b) Combined Environmental Impact Statement and Tree Conservation Report – Valecraft Kanata North Development (1020 & 1070 March Road).

Novatech Engineering Consultants (Novatech) (2016a) Kanata North Community Design Plan.

Novatech Engineering Consultants (Novatech) (2016b) Kanata North Community Design Plan – Environmental Management Plan.

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APPENDIX A – TREE PHOTOS

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Photograph 1: Tree #1 – Bur Oak in good condition (May 27th, 2019).

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Photograph 2: Tree #2 – dead White Ash (May 27th, 2019).

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Photograph 3: Tree #3 – Category 3 Butternut Tree (May 27th, 2019).

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Photograph 4: Tree #4 – dead White Ash (May 27th, 2019).

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Photograph 5: Tree #5 – dead White Ash (May 27th, 2019).

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Photograph 6: Tree #7 – Category 1 Butternut (May 27th, 2019).

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Photograph 7: Tree #8 – dead White Ash (May 27th, 2019).

Photograph 8: Tree #9 – White Pine in good condition (May 27th, 2019).

Photograph 9: Tree #10 – White Cedar in good condition (May 27th, 2019).

Photograph 10: Tree #11 – dead White Cedar (May 27th, 2019).

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Photograph 11: Tree #12 – White Cedar in good condition (May 27th, 2019).

Photograph 12: Tree #13 – Category 3 Butternut (May 27th, 2019).

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Photograph 13: Tree #14 – Category 3 Butternut (May 27th, 2019).

Photograph 14: Tree #15 - Bur Oak in good condition (May 27th, 2019).

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Photograph 15: Tree #16 – Category 1 Butternut (May 27th, 2019).

Photograph 16: Tree #17 – White Pine in good condition (May 27th, 2019).

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Photograph 17: Tree #18 – Category 2 Butternut (May 27th, 2019).

Photograph 18: Tree #19 – White Cedar in good condition (May 27th, 2019).

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Photograph 19: Tree #20 – Category 1 Butternut (May 27th, 2019).

Photograph 20: Tree #21 – Bur Oak in good condition (May 27th, 2019).

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Photograph 21: Tree #22 – Bur Oak in good condition (May 27th, 2019).

Photograph 22: Tree #23 – Bur Oak in good condition (May 27th, 2019).

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Photograph 23: Tree #24 – Category 1 Butternut Tree (May 27th, 2019).

Photograph 24: Tree #25 – Category 3 Butternut Tree (May 27th, 2019).

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Photograph 25: Tree #26 – dead White Ash (May 27th, 2019).

Photograph 26: Tree #27 – Bur Oak in good condition (May 27th, 2019).

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Photograph 27: Tree #28 – Bur Oak in good condition (May 27th, 2019).

Photograph 28: Tree #29 – Bur Oak in good condition (May 27th, 2019).

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Photograph 29: Tree #30 – Sugar Maple in good condition (May 27th, 2019).

Photograph 30: Tree #31 – Sugar Maple in good condition (May 27th, 2019).

Photograph 31: Tree #32 – dead White Ash (May 27th, 2019).

Photograph 32: Tree #33 – dead White Ash (May 27th, 2019).

Photograph 33: Tree #34 – Basswood in good condition (May 27th, 2019).

Photograph 34: Tree #35 – White Pine in good condition (May 27th, 2019).

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Photograph 35: Tree #36 – Bur Oak in good condition (May 27th, 2019).

Photograph 36: Tree #37 – dead White Ash (May 27th, 2019).

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Photograph 37: Tree #38 – Sugar Maple in poor condition (May 27th, 2019).

Photograph 38: Tree #39 – Sugar Maple in good condition (May 27th, 2019).

Photograph 39: Tree #40 – White Pine in good condition (May 27th, 2019).

Photograph 40: Tree #41 – Sugar Maple in good condition (May 27th, 2019).

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Photograph 41: Tree #42 – Sugar Maple in good condition (May 27th, 2019).

Photograph 42: Tree #43 – Yellow Birch in good condition (May 27th, 2019).

Photograph 43: Tree #44 – Yellow Birch in good condition (May 27th, 2019).

Photograph 44: Tree #45 – Yellow Birch in good condition (May 27th, 2019).

Photograph 45: Tree #46 – White Cedar in good condition (May 27th, 2019).

Photograph 46: Tree #47 – American Elm in good condition (May 27th, 2019).

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Photograph 47: Tree #48 – dead White Ash (May 27th, 2019).

Photograph 48: Tree #49 – Sugar Maple in good condition (May 27th, 2019).

Photograph 49: Tree #50 – Basswood in poor condition (May 27th, 2019).

Photograph 50: Tree #51 – dead White Ash (May 27th, 2019).

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Photograph 51: Tree #52 – dead White Ash (May 27th, 2019).

Photograph 52: Tree #53 – Category 3 Butternut (May 27th, 2019).

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Photograph 53: Tree #54 – dead White Ash (May 30th, 2019).

Photograph 54: Tree #55 – Bur Oak in good condition (May 30th, 2019).

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Photograph 55: Tree #56 – Category 3 Butternut (May 30th, 2019).

Photograph 56: Tree #57 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 57: Tree #58 – Trembling Aspen in poor condition (May 30th, 2019).

Photograph 58: Tree #59 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 59: Tree #60 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 60: Tree #61 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 61: Tree #62 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 62: Tree #63 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 63: Tree #64 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 64: Tree #65 – Trembling Aspen in good condition (May 30th, 2019).

Photograph 65: Tree #66 – Crack Willow in good condition (May 30th, 2019).

Photograph 66: Tree #67 – Crack Willow in good condition (May 30th, 2019).

Photograph 67: Tree #68 – White Pine in good condition (May 30th, 2019).

Photograph 68: Tree #69 – White Pine in good condition (May 30th, 2019).

Photograph 69: Tree #70 – White Pine in good condition (May 30th, 2019).

Photograph 70: Tree #71 – White Pine in good condition (May 30th, 2019).

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