



Muncaster
Environmental
Planning Inc.

June 13, 2018

Mr. Cody Campanale
Land Development and Acquisitions Manager
Campanale Homes
Suite 200, 1187 Bank Street
Ottawa, Ontario
K1S 3X7

Dear Mr. Campanale:

RE: 5 Orchard Drive
Tree Conservation Report and Environmental Impact Statement

This Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) assesses an urban residential development for a 4.03 hectare site on the south side of Hazeldean Road between Sweetnam Drive to the west and Fringewood Drive to the east, in the Stittsville portion of the City of Ottawa (Map 1). Poole Creek is 30 metres to the west of the west site edge. The site has approximately 215 metres of frontage along the south side of Hazeldean Road and 150 metres along the west side of Fringewood Drive.

The proposed development includes a commercial or residential component in the north portion of the site, south of Hazeldean Road, and an urban residential component in the south half. A commercial component could include a centre building flanked by smaller restaurant-sized buildings to the west and east. Surface parking spaces, in the range of 225, will be part of the commercial development. The residential component will include sixty-six executive townhouse, two semi-detached units, and seven detached residences. Access to the commercial components will be via the south side of Hazeldean Road and west side of Fringewood Drive, with an east-west cul-de-sac off Fringewood Drive for the residential units. The developments will be on full municipal services. As detailed by DSEL (2018), the development will be required to attenuate post development flows to an equivalent release rate of 238.7 L/s to the existing storm sewer within Hazeldean Road, for all storms up to and including the 100-year storm event. This will be facilitated through a combination of low impact development practice infiltration chambers in the road and rear yards and surface ponding (DSEL, 2018). Water quality control will be provided by oil-grit separators in combination with the proposed low impact development practices to achieve seventy percent total suspended sediment removal as required by the Mississippi Valley Conservation Authority (MVCA).

Site Context

The site and adjacent lands are designated *General Urban Area* on Schedule B of the City of Ottawa Official Plan, with the Poole Creek corridor north of Hazeldean Road designated *Major*

Open Space. The site is zoned Arterial Mainstreet (AM9), except a small portion along the west edge which is zone Parks and Open Space (OIR) (see orange line on Map 1). It is proposed to re-zone this small area to permit a residential use. As described below no natural heritage features were identified in this portion of the Open Space zoning to support the zoning in this area. No terrestrial components of the City's Natural Heritage System are on or adjacent to the site, as shown on the Schedule L3 overlay, with the Poole Creek floodplain shown on Schedule L3 (and Map 1). The closest Urban Natural Area is also north of Hazeldean Road along Poole Creek. At its closest point the Poole Creek North Urban Area Natural Area is approximately 70 metres northwest of the northwest corner of the site. This Natural Area was rated moderate overall by Muncaster and Brunton (2005). No environmental constraints are shown for the site on Schedule K of the Official Plan, with the Poole Creek floodplain to the west of the site.

Poole Creek flows from south to north to the west of the site, with the west site boundary established in 2016 to be 30 metres from the normal high water mark of the creek. Poole Creek provides significant base flow to the Carp River and was considered by the Carp River Watershed/Subwatershed Study (CRWSS) to support tolerant cold water and diverse warm water fish communities, with a natural streamside environment (Robinson, 2004; TSH, 2005). The benthic community was considered reflective of good water quality (Robinson, 2004). Fish species noted by TSH (2005) in Poole Creek in the general area of the site included molted sculpin, brassy minnow, fathead minnow, bluntnose minnow, brook stickleback, longnose dace, northern redbelly dace, finescale dace, logperch, creek chub, white sucker, common shiner, golden shiner, pumpkinseed, rock bass, central mudminnow, and Johnny darter. TSH (2005) noted that water temperatures remained in the range suitable for cold water fish species and were generally 3 – 5 °C lower than the Carp River. No high or moderate recharge areas were identified in the vicinity of the site by Robinson (2004). TSH (2005) noted that Poole Creek upstream, south, of Hazeldean Road is cut into bedrock, with the majority of the sediment supply provided in the lower reaches north of Hazeldean Road. A Centre of Ecological Significance was identified by Robinson (2004) along the Poole Creek corridor to the west of the site. No areas of rare vegetation, Areas of Natural and Scientific Interest, wetlands, woodlands greater than 50 years of age, or forest interior habitat were identified by Robinson (2004) on or adjacent to the site. The recommended Poole Creek corridor width by TSH (2005) to accommodate the meander belt was between 60 and 120 metres. The restoration reaches for Poole Creek recommended by TSH (2005) were all north of Hazeldean Road, downstream of the site.

The majority of the site is open and has been in agricultural use for an extended time. Mobile homes were in the west portion of the site until approximately 2008. Areas of trees are along portions of the north, east and south site edges. The land use in the vicinity of the site is a combination of single urban residences, and commercial operations and business parks along Sweetnam Drive, Iber Road, and Hazeldean Road.

Methodology

This report includes an assessment of the terrestrial features, including the potential for specimen trees, significant woodlands and Species at Risk, as well as setbacks and other components associated with the Poole Creek corridor to the west. Colour aerial photography (1976-2017) was used to assess the natural environment features in the general vicinity of the site. A survey

of the site and adjacent lands was completed on February 14th, 2018 from 10:15 to 13:30. Weather conditions during the survey included a light to moderate breeze, an air temperature of 3° C, and sunny skies. Snow cover was throughout the site. A second field survey was completed on June 12th, 2018 from 06:20 to 08:40. Weather conditions during the June survey included a light breeze, an air temperature between 16 and 19° C, and sunny skies.

The field survey and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over thirty years of experience in completing natural environment assessments. The purpose of the Tree Conservation Report component is to establish which vegetation should be retained and protected on the site and to assess adjacent trees. The site is currently owned by 2491929 Ontario Inc (Campanale Homes). It is proposed to remove the woody vegetation not proposed for retention in 2018 after the breeding bird period.

For the purposes of this report Hazeldean Road is considered to be in an east-west orientation.

Potential Species at Risk

The Ministry of Natural Resources and Forestry (MNR)'s Make a Map: Natural Heritage Areas website was reviewed on January 30th, 2018 (www.giscoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html). This site allows for a search of Threatened and Endangered species covered by the 2008 *Endangered Species Act*, as well as other species of interest. A search was conducted on the 1 km squares including the site and adjacent lands (18VR21 – 73). No Species at Risk were noted for this square, with one Species of Special Concern; snapping turtle. Snapping turtle is reported by TSH (2005) from Poole Creek as well as the Carp River, which is approximately 1.8 kilometres to the east of the site. An information request was submitted on January 8th to the Kemptville District Office of the MNR.

Five Species at Risk, barn swallow, bank swallow, eastern whip-poor-will, eastern meadowlark, and bobolink, are identified in the Ontario Breeding Bird Atlas for the overall 10 km square (18VR21) that includes the current site. Eastern meadowlark and bobolink utilize larger grassland areas such as hayfields. The onsite meadow habitat was formally cut for hay, but at approximately 2.4 hectares it is too small to provide suitable nesting habitat for these grassland Species at Risk. Bank swallows nest in open sand walls, often in association with sand pits, habitat also not present. No structures were present on or adjacent to the site that may be utilized by chimney swift or barn swallow. Eastern whip-poor-will utilize rock or sand barrens with scattered trees, savannahs, old burns, or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations. There are no suitable forests on or adjacent to the site.

Many other endangered and threatened species have historically been reported in the overall City, including butternut, American ginseng, eastern prairie fringed-orchid, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, little brown myotis, northern long-eared bat, olive hickorynut, bald eagle, golden eagle, cerulean warbler, least bittern, eastern cougar, lake sturgeon, and American eel.

Based on the habitat present on and adjacent to the site, a potential Species at Risk for the site itself is butternut, while Blanding's turtle may be found along Poole Creek. Butternut is well known along the Poole Creek north of Hazeldean Road. No large cavity trees were observed on the site.

Existing Conditions

Paterson (2018) described the subsurface profile as a topsoil layer underlain by loose to compact brown silty sand layer and/or glacial till. Grey limestone bedrock was encountered by Paterson (2018) below the silty sand and/or glacial till, with an overburden thickness ranging between three and ten metres. The site is generally flat with a gentle slope to the east and northeast, away from Poole Creek, except for the west edge of the site which is directed towards the creek (DSEL, 2018). Outside of Poole Creek, no channels with aquatic habitat potential were identified on or adjacent to the site. There are two north-south swales in the east portion of the site (Photos 12 and 13). These swales connect to the existing storm sewers and other infrastructure on the south side of Hazeldean Road and did not have any aquatic habitat characteristics, with meadow vegetation throughout south of Hazeldean Road. The east swale was poorly defined and had been mowed through as part of the vegetation maintenance along the west side of Fringewood Drive (Photo 13). The definition of the west swale is reduced as it approaches the catchbasin on the south side of Hazeldean Road (Photo 12). Grading associated with the widened road bed in the Hazeldean Road corridor has appeared to reduce the ability of the west swale to drain to the catchbasin. Regardless no water was observed in either swale on June 10th.

Expected long-term groundwater levels were noted by Paterson (2018) to range between three and four metres below ground elevation. No grade raise restrictions were identified for the site by Paterson (2018).

Paterson (2018) concluded that Poole Creek to the west of the site is confined by a two to three metre high stable slope. The slope was observed by Paterson (2018) to be well vegetated and stable, with little to no signs of active erosion. The slope stability analysis completed by Paterson (2018) identified a maximum stable slope allowance of 1.6 metres, a toe erosion allowance of two metres, and an erosion access allowance of six metres from the top of slope, as shown on Drawing PG4428-1 in Appendix 2 of Paterson (2018). Thus, the limit of hazard lands extends a maximum of 9.6 metres from the top of slope.

Orchard grass, brome grass, reed canary grass, redtop, common burdock, white clover, red clover, wild carrot, wild parsnip, purple loosestrife, common milkweed, Canada goldenrod, white bedstraw, field horsetail, common mugwort, bird's-foot trefoil, black medic, cow vetch, daisy fleabane, wild parsnip, common dandelion, ox-eye daisy, bladder campion, tall buttercup, mouse-eared chickweed, bittersweet nightshade, Canada thistle, common mullein, and wild grape were representative of the ground vegetation in the cultural meadow habitats (Photos 7 and 8). Red-osier dogwood, grey dogwood, glossy buckthorn, and staghorn sumac shrubs and regenerating Manitoba maple stems were also present. Two white elms, up to 25cm diameter at breast height (dbh), were south of Hazeldean Road in the northeast corner of the site. Sumac shrubs were west of Fringewood Drive, south of the coniferous hedgerow described below, along

with red and Norway maples in the 32cm – 35cm dbh range and smaller Manitoba maple in the southeast corner of the site. Hedges of white cedar are common along portions of the south site edge, along with trembling aspen up to 22cm dbh. Piles of construction debris and fill were common in the west portion of the site, along with gravel pads (Photo 8).

Manitoba maple, sugar maple, red maple, Norway maple, trembling aspen, balsam poplar, eastern cottonwood, Norway spruce, white cedar, white ash, white birch, white pine, Scot's pine, red pine, white spruce, and basswood were represented in the pockets of cultural woodlands on the site peripheries (Photos 1 - 5). The current landowner reports that many of these trees were planted in the 1970s and 1980s. A 60cm dbh Norway maple south of the parking lot for the Cabotto's restaurant adjacent to the northwest portion of the site and a 65cm dbh bur oak to the east had major trunk damage but also relatively good leaf-out (Photo 2). Some white ash showed signs of emerald ash borer. Red maples up to 58cm dbh in the south-central cultural woodlands also had good leaf-out (Photo 3). The larger maple, white birch, white ash, and white spruce trees were in the 35 – 50cm dbh range and appeared to be in generally good condition, with wild grape coverage on some of the lower tree branches. White cedars up to 15cm dbh were dominant in portions of the south-central cultural woodland, with trembling aspen dominant in the southeast corner (Photo 5). A 23cm dbh butternut was among the cedars along the east edge of the south-central cultural woodland (Photo 11). Tree cutting was common in the central and west portions of the south-central cultural woodland (Photo 4).

Regenerating poplar, ash, Norway maple, Manitoba maple, bur oak, and white cedar stems were in the cultural woodlands, along with common buckthorn, tartarian honeysuckle, black currant, staghorn sumac, and red raspberry shrubs. Early goldenrod, yellow goat's-beard, silvery cinquefoil, garlic mustard, wild grape, thicket creeper, wild carrot, common mullein, Canada thistle, white-sweet clover, evening primrose, heal-all, lily-of-the-valley, common dandelion, enchanter's nightshade, white avens, common milkweed, bladder campion, yellow violet, common mugwort, and common burdock were representative of the ground flora in the cultural woodland habitats.

Trembling aspen was dominant in a north-south deciduous hedgerow in the east portion of the site (Photo 6). The largest poplars were 36cm dbh. Trunk fungus was on many of the poplars, with wind throw damaging others. White ash up to 28cm dbh among the poplars showed signs of emerald ash borer. White elm, Manitoba maple, and balsam poplar up to 15cm dbh were also in the deciduous hedgerow. Wild grape coverage was on the lower branches of many of the hedgerow trees. In addition to common buckthorn shrubs, regenerating stems of poplar, white cedar, bur oak, and ash were among the hedgerow trees.

A north-south row of white spruce up to 30cm dbh west of Fringewood Drive south of Hazeldean Road is shown as a coniferous hedgerow on Map 1. The conifers appear to be in generally good condition except for two of the stems with few needles in the north portion of the hedgerow.

White cedar and Manitoba maple up to 40cm and 32cm dbh, respectively are dominant along the Poole Creek corridor to the west of the site (Photo 9). White ash, green ash, Norway maple, white elm, basswood, crack willow, and sugar maple were common in areas. The largest tree

noted was a 60cm dbh crack willow. The trees appeared to be in generally good condition except many of the ash showed impacts from emerald ash borer and some of the crack willows and Manitoba maple had limb damage. As discussed below three butternuts were observed along the east side of Poole Creek. Grey dogwood, red-osier dogwood, common buckthorn, blackberry, and red raspberry shrubs were also along the Poole Creek corridor, along with regenerating Manitoba maple, ash and maple stems. Ground vegetation included an extensive amount of wild grape, along with thicket creeper, reed canary grass, common burdock, wormseed mustard, panicked aster, ground ivy, garlic mustard, bittersweet nightshade, and common dandelion.

Five butternuts, an endangered Species at Risk, were observed on and adjacent to the site and assessed on June 8th, 2018 by Shaun St. Pierre, a certified Butternut Health Assessor (#281). As shown on Map 1, two of these butternuts along Poole Creek were assessed as unhealthy and are considered Category 1 butternuts (Photo 10). A third 1cm dbh butternut along Poole Creek was assessed as healthy as were the 23cm (Photo 11) and 1 cm dbh butternuts on site. The three healthy trees are considered Category 2 butternuts. No site disturbances are anticipated within 25 metres of the butternuts along Poole Creek. As a permit for butternut removal will not be required, our understanding is compensation for butternut habitat is not considered and therefore the 50 metre distance is not applicable. The two on-site butternuts assessed as healthy are proposed for removal and will be registered through the online process and compensated for with off-site plantings of twenty-two pure seedlings. It is very important to note that no site disturbances are permitted within 25 metres of all of the butternuts until thirty days have passed following submission of the butternut health assessment report to MNRF.

Poole Creek has been identified as Category 2 Blanding's turtle habitat in the vicinity of the site, with Blanding's turtle observed within two kilometres to the northwest of the site. The Category 2 Blanding's turtle habitat extends 30 metres from Poole Creek and thus is not present on the site itself. Category 3 Blanding's turtle habitat is on the site, extending 220 metres from the east edge of the Category 2 habitat. The Category 3 habitat would include all of the site except the 50 metres or so closest to Fringewood Drive. The primary purpose with respect to Blanding's turtle habitat of the Category 3 lands is to provide movement corridors between wetlands. As the Category 3 habitat leads only to developed areas via the site, they cannot support overland travel corridors from Poole Creek to wetlands as no wetlands are present within or to the north, east, or south of the Category 3 lands. There is no indication that Blanding's turtle would utilize the site to migrate to other suitable habitats from Poole Creek. Thus, the primary purpose of Category 3 Blanding's turtle habitat is not applicable to the Category 3 lands on the site.

Wildlife observed included American crow, common raven, European starling with many immatures, red-winged blackbird, black-capped chickadee, eastern kingbird, blue jay, yellow warbler, common yellowthroat, American robin, song sparrow, chipping sparrow, American goldfinch, eastern cottontail, red squirrel, grey squirrel, and white-tailed deer tracks and pellets. No stick nests or other evidence of raptor use were observed. No large trees with cavities for potential summer bat roosts were observed on the site, with some woodpecker cavities in a couple of the maple trees. A squirrel drey was in the south-central cultural woodland.



*Photo 1 – Small area of cultural woodland along the north edge of the site.
View looking northwest*



*Photo 2 – Mature bur oak in the north cultural woodland along the north property line.
View looking west*



Photo 3 - Mature red maple with good leaf-out in the north portion of the south-central cultural woodland



Photo 4 – White spruce, area of tree cutting, and white cedar in the south-central cultural woodland. View looking east



Photo 5 – Young trembling aspen dominate the cultural woodland in the southeast corner of the site. View looking south



Photo 6 – North-south deciduous hedgerow in the east portion of the site. View looking west



Photo 7 - Cultural meadow in the central portion of the site. View looking west



*Photo 8 – Gravel pad and meadow habitat in the west portion of the site.
View looking west to the Poole Creek corridor*



Photo 9 – Manitoba maple, with 22cm dbh butternut in centre. along the Poole Creek corridor to the west of the site. View looking northwest



Photo 10 – Multi-stem butternut with no leaf-out and extensive vine coverage on the east side of Poole Creek, west of the site



Photo 11 – Healthy 23cm dbh butternut along the east edge of the south-central cultural meadow. View looking west



Photo 12 - West swale approaching Hazeldean Road. View looking north



*Photo 13 - East swale west of Fringewood Drive approaching Hazeldean Road.
View looking north*

Significant Woodlands and Valleylands

The criteria for significant woodlands in the urban area of Ottawa are found in Official Plan Amendment 179. There are no forests on or adjacent to the site that are at least 0.8 hectares in size.

The Natural Heritage Reference Manual (OMNR 2010) provides criteria for identifying significant valleylands. The Poole Creek valley would be considered a significant valleylands due to significant slope associated with the valley, the presence of Poole Creek and associated cold water fish habitat, well-treed valley slopes and a distinctive geomorphic landform.

Significant Wildlife Habitat

The potential for significant wildlife habitat was assessed using the guidance in OMNR (2010) and MNRF (2015). No flora, fauna or ecological conditions identified in the background review or field survey that would trigger a Significant Wildlife Habitat designation with respect to the ELC communities present were observed on the site. For example, the cultural habitats do not support waterfowl stopover or staging areas, colonial nesting bird breeding habitat or other examples of seasonal concentration areas, rare vegetation communities as noted in MNRF (2015), or rare or specialized habitats including seeps or springs.

No forest interior habitat is present and thus potential nesting of species of special concern such as wood thrush and eastern wood-pewee is not expected. No evidence of raptor wintering areas

was noted and old growth forests are not present. Areas of broken and fissured rock for potential use by snakes were not observed.

The site is isolated from an environmental perspective by the adjacent urban residential developments of Stittsville and associated transportation network and other servicing infrastructure.

Impact Analysis and Recommendations

Species at Risk and other Significant Natural Heritage Features

Other than butternut no Species at Risk utilization was observed or is anticipated for the site. No other Species at Risk were observed on or adjacent to the site during the field surveys. No potential structures for chimney swift or barn swallow are present. Forests are not present and significant wildlife habitat is not anticipated. No tributaries to Poole Creek with aquatic habitat potential were observed or are mapped for the site. There is no anticipation that Blanding's turtle will utilize the upland terrestrial habitat of the site for nesting or migrating. The gravel pad is considered too hard packed for potential nesting habitat.

Butternut and the fish habitat and significant valleylands of Poole Creek are the significant natural heritage features on and adjacent to the site. The two healthy butternuts proposed for removal can be removed once on-line registration is complete, provided a Tree Cut Permit has been obtained from the City and there are no breeding bird concerns. Removal or harming of the two healthy Category 2 butternuts will be compensated for with twenty-two plantings of pure butternut seedlings to be completed off site. The current owner advises that the south butternut along Poole Creek was planted. If planted this tree would not be subject to the Endangered Species Act. Regardless this butternut was assessed as unhealthy.

Poole Creek will not be impacted directly as the channel is to the west of the site. The setback requirements from Poole Creek are whichever of the following is greater:

- 30 metres from the normal high water mark of the creek;
- 15 metres from the top of valley slope;
- the floodplain as defined by MVCA;
- a hazard line as determined by a geotechnical assessment looking at slope stability, erosion, and access factors; and,
- the meander belt requirements.

The west edge of the site is a minimum of 30 metres from the normal high water mark. The 30 metre normal high water mark setback is similar to the west edge of the site and is a greater distance from Poole Creek than the floodplain (shown as dashed blue line on Map 1). The 30 metres from the normal high water mark of the creek is also greater than 15 metres from the top of valley slope as the top of valley slope is in the range of 12 metres east of the normal high water mark, as shown on Drawing PG4428-1 in Appendix 2 of Paterson (2018). The 30 metres from the normal high water mark of the creek is also to the east of the meander belt width associated with Poole Creek based on a study by Parish Geomorphic which is currently under review by MVCA. The recommended meander belt is approximately 21 metres east of Poole

Creek. As discussed above, the limit of hazard lands extends a maximum of 9.6 metres from the top of slope or in the range of 22 metres from the normal high water mark. In summary, all of the above constraints will be less than 30 metres from the normal high water mark.

A portion of the setback east of Poole Creek contains a spill area as part of the floodplain. This is shown on Map 1 where the floodplain juts to the east south of the Orchard Drive crossing of Poole Creek. MVCA correspondence summarized the spillway as approximately 4.5 metres in width and extends approximately 25 m west from the centre of Poole Creek. As the west boundary of the site was adjusted in 2016 to be 30 metres from the normal high water mark of Poole Creek, the spill area is not on the site itself. An assessment by DSEL (2018) indicates that the spill area can be addressed by property grading rather than constructing a berm to the west of the site.

Finally, there is a very small portion of the west edge of the site that is zoned O1R (Parks & Open Space). This is shown with a solid orange line on Map 1. The City reports that this zoning dates back to the Township of Goulbourn and was zoned Environmental Protection Area. Other than the spill area, there was no rationale observed for why the zoning line jutted to the east in this location. The O1R extension is within mostly the footprint of Orchard Drive east of Poole Creek, as well as cultural meadow habitat. There are no natural features that would support this zoning in this location to the east of the floodplain and associated spill area. Thus, it is recommended that a Zoning By-law Amendment be undertaken to adjust the O1R zoning line to match the floodplain.

Tree Retention

Due to the density of the development and required urban servicing and associated grading no tree retention potential is anticipated for the site other than along the south site boundary, as shown on Map 2. The conceptual grading plan (Drawing CGP-1 in DSEL, 2018) indicates grade raise requirements between 1 and 3 metres for the site. Due to the proposed infiltration chambers along some of the rear yards, no tree retention is shown along portions of the south boundary. Detailed engineering studies and associated grading requirements will determine if tree retention is feasible in these areas.

In terms of planting sensitivities, tree and shrub species that have a high water demand are not recommended for the site due to the clay soils. These species include willows, poplars, and elm. It is important that native trees from a local seed stock be used whenever possible, however the landscape architect may choose species that are less sensitive to an urban environment. Recommended species for planting include a mix of coniferous and deciduous trees such as sugar maple, red maple, basswood, bur oak, red oak, white pine, and white spruce, along with nannyberry, elderberry, and dogwood shrubs. Along the rear of the west lots, the woody vegetation should be planted in clusters to improve the wildlife benefits and other components of the Poole Creek corridor.

The following important mitigation measures are to be properly implemented:

1. To protect breeding birds, no tree removal should occur between April 15th and August 15th, unless a breeding bird survey conducted within five days of the woody vegetation removal identifies no active nests in the vegetation to be removed;
2. Trees to be retained are to be protected with sturdy temporary fencing at least 1.2 metres in height installed from the tree trunk a distance of ten times the retained tree's diameter where possible. Signs, notices, or posters are not to be attached to any tree. No grading, heavy machinery traffic, stockpiling of material, machinery maintenance and refueling, or other activities that may cause soil compaction are to occur within the critical root zones of the trees to be retained and protected. The root system, trunk, or branches of the trees to be retained are to be protected and not damaged. If any roots of trees to be retained are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth, burlap or woodchips and kept moist until the roots can be buried permanently. A covering of plastic should be used to retain moisture during an extended period when watering may not be possible. Any roots that must be cut are to be cut cleanly to facilitate healing and as far from the tree as possible. Overhanging branches from retained trees that may be damaged during construction are to be pruned by a qualified arborist prior to construction. Exhaust fumes from all equipment during construction will not be directed towards the canopies of retained trees.

All of the supports and bracing for the protective fencing should be placed outside of the protected area and should be installed in such a way as to minimize root damage. Also, since the desired effect of the barrier is to prevent construction traffic from entering the tree's critical root zone, the barrier should be kept in place until all site servicing and construction has been completed;

3. Where the critical root zones (ten times the trunk diameter) of the shared trees along the northeast boundary (adjacent to the parking lot for Cabotto's) extend onto the site, discussions are required with the City Planning forester and adjacent landowner to determine if these trees should be retained or given their condition, replaced with new plantings post-construction. Where present it is anticipated that the tree retention along the south site boundary will protect the outer edge of the critical root zones of any trees in the rear of the residences on the north side of Cloverloft Court, to the south of the site. Where the infiltration chambers will be installed discussions are required with the adjacent landowners to establish an approach to protecting or replacing these trees. No trees are adjacent to the west or east site boundaries or the portion of the site that fronts onto Hazeldean Road;
4. Silt fencing is to be placed along the west edge of site disturbances, with the fencing wrapped around the north and south ends. The fencing must be properly dug in and maintained throughout the construction period. The extent of exposed soils is to be kept to a minimum at all times. Re-vegetation of exposed, non-developed areas with native species is to be achieved as soon as possible to reduce surface erosion. Once the site is stabilized following construction, all temporary fencing is to be removed;

5. Where required seepage barriers such as silt fencing, straw bale check dams, and other sediment and erosion control measures will be installed to OPSD requirements in any temporary drainage ditches, around disturbed areas during construction, and stockpiles of fine material. These control measures must be properly maintained to maximize their function during construction and will be removed at the completion of construction once the site has stabilized. Any dewatering of groundwater is to be properly treated before release or directed to the sanitary system;
6. The contractor is to be aware of potential Species at Risk in the vicinity of the site including butternut and Blanding's turtle. Appendix 1 of City of Ottawa (2015) describes these species. Appendix 1 should be modified for this development project to include the contact information of the project biologist. Any Species at Risk sightings are to be immediately reported to the project biologist and the MNRF, and activities modified to avoid impacts until further direction by the Ministry;
7. As recommended in City of Ottawa (2015) prior to beginning work each day, wildlife is to be checked for by conducting a thorough visual inspection of the work space and immediate surroundings. See Section 2.5 of City of Ottawa (2015) for additional recommendations on construction site management with respect to wildlife. It is the responsibility of the contractor to be familiar with all components of City of Ottawa (2015). Any turtles, snakes, or other sensitive wildlife in the work area are to be relocated to the Poole Creek corridor to the west. Animals should be moved only far enough to ensure their immediate safety. See Appendix 1 and the links in Section 4 of City of Ottawa (2015) for suggestions on how to effectively relocate turtles and snakes;
8. Municipal by-laws and provincial regulations for noise will be followed and utilities will be located in the vicinity of the site prior to construction; and,
9. Waste will be managed in accordance with provincial regulations. The contractor will have a spill kit on-hand at all times in case of spills or other accidents.

Schedule of Proposed Works

It is proposed to remove the woody vegetation not identified for retention in 2018 after the breeding bird period. City of Ottawa staff (Forester – Planning) is to be contacted at least two business days prior to any tree removal so that staff have the opportunity to verify that the protective fencing has been properly constructed. A Tree Cut Permit will be required for all trees greater than 10cm dbh.

Conclusion

A mix of commercial and residential developments are proposed for the 4 hectare site on the south side of Hazeldean Road between Sweetnam Drive to the west and Fringewood Drive to the east, in the Stittsville portion of the City of Ottawa. The site is mostly disturbed meadow habitat, with some deciduous and coniferous hedgerows and cultural woodlands. Butternut and the fish habitat and significant valleylands of Poole Creek are the significant natural heritage

features on and adjacent to the site. As Poole Creek is 30 metres to the west of the west site edge, the Creek will not be directly impacted and important mitigation measures are provided in this report to avoid indirect impacts on Poole Creek and its corridor. Three of the five butternuts on and adjacent to the site were assessed as healthy Category 2 butternuts. Removal of the two healthy on-site butternuts will be addressed through MNR's on-line registry process and pure butternut seedlings will be planted off-site as compensation.

Due to grading and other urban servicing requirements tree retention is anticipated to be limited to the south site edge, in locations where the infiltration chambers are not proposed. Planting of native trees in the rear of the larger lots proposed for the west portion of the site will add to the features and functions of the Poole Creek corridor.

It is important that mitigation measures outlined in this report are properly implemented and maintained.

References

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**5 ORCHARD DRIVE
TREE CONSERVATION REPORT and ENVIRONMENTAL IMPACT STATEMENT**

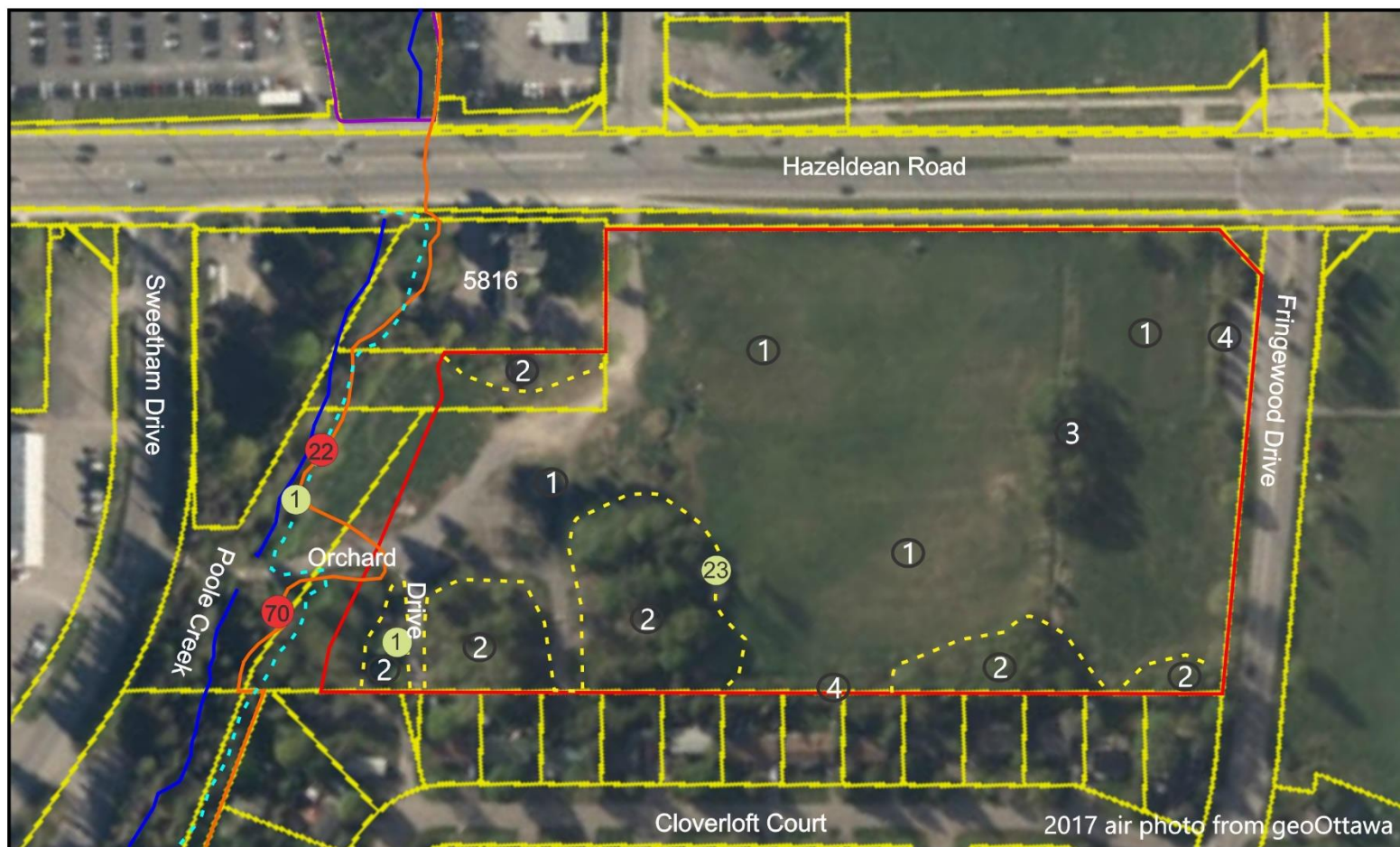
Please call if you have any questions or comments on this Environmental Impact Statement and Tree Conservation Report.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, M.Sc.
Principal

5 Orchard Drive EISTCR



Vegetation Communities

- ① Cultural meadow
- ② Cultural woodland
- ③ Deciduous hedgerow
- ④ Coniferous hedgerow

Legend

- Site
- Poole Creek North UNA
- Open Space Zoning Line
- Floodplain
- Vegetation Communities

- 23 Healthy Butternut (# indicates cm dbh)
- 70 Unhealthy Butternut

Approx. Scale 1:2,100



Map 1

FILE: 17-18

June 15, 2018

Prepared for:

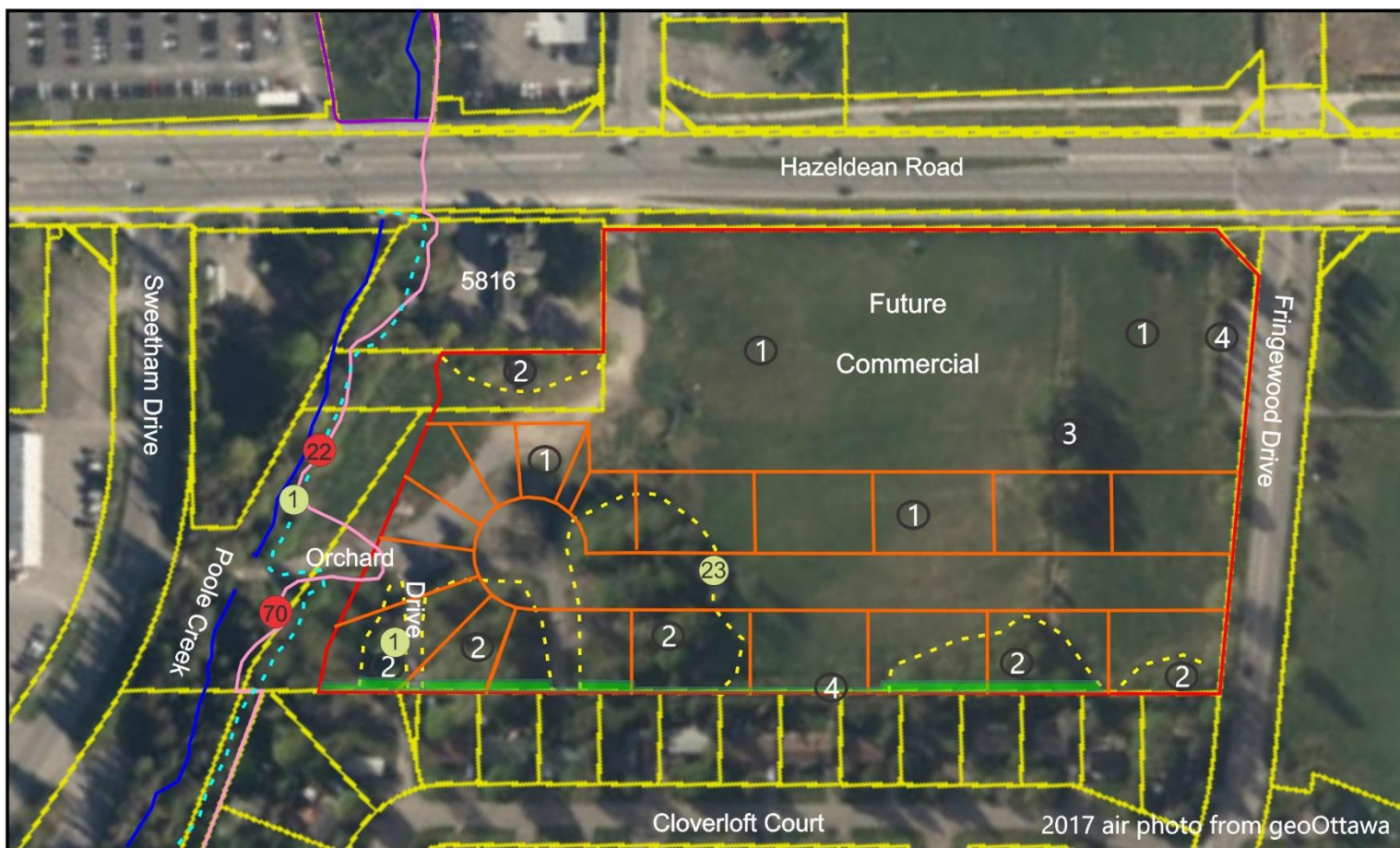
Campanale Homes

Prepared by:



ENVIRONMENTAL IMPACT STATEMENT & TREE CONSERVATION REPORT

5 Orchard Drive, Stittsville, City of Ottawa



Vegetation Communities

- ① Cultural meadow
- ② Cultural woodland
- ③ Deciduous hedgerow
- ④ Coniferous hedgerow

Legend

- Site
- Poole Creek North UNA
- Open Space Zoning Line
- Floodplain
- Vegetation Communities

- 23 Healthy Butternut
(# indicates cm dbh)
- 70 Unhealthy Butternut
- Proposed Tree Retention Areas

Approx. Scale 1:2,100



Map 2

FILE: 17-18

June 15, 2018

Prepared for:

Campanale Homes

Prepared by:



Muncaster
Environmental
Planning Inc.

PROPOSED CONSERVED VEGETATION

5 Orchard Drive, Stittsville, City of Ottawa

APPENDIX A

MINISTRY of NATURAL RESOURCES and FORESTRY

CORRESPONDENCE

(not received – have sent a reminder to MNR)