Muncaster Environmental Planning Inc.

June 28, 2022

Mr. Vincent Dénommé
Planner
CRT Development Inc.
210 Gladstone Avenue,
Ottawa, ON
K2P 0Y6

Dear Mr. Dénommé:

RE: Westwood Phase 4
Tree Conservation Report and Environmental Impact Statement

This Tree Conservation Report and Environmental Impact Statement addresses the existing vegetation, potential Species at Risk utilization, and other natural heritage features at 5500 Abbott Street East and 1555 Shea Road, also known as the Westwood Phase 4 development. The site is bordered by Abbott Street East to the north; earlier phases of the Westwood development to the east, Fernbank Road to the south and Shea Road to the west. As shown on Maps 2 and 3, urban residential developments are proposed for the site. A recently constructed stormwater management facility immediately to the southeast of the site, north of Fernbank Road, will be utilized. Urban residential units are under construction to the east and west (west of Shea Road) of the site, with existing residential communities to the east of the north portion of the site and to the north, north of Abbott Street East. Cultivated agricultural lands are dominant to the south of the site, south of Fernbank Road. The site itself is a combination of forests and more open habitats regenerating on former agricultural lands (Map 1). A steel tower hydro corridor bisects the site from north to south east of Shea Road and curves to run along the north portion of the site (Map 2). A portion of the Trans Canada Trail is immediately to the north of the site, between the hydro corridor and Abbott Street East. A church and associated parking lot are adjacent to the northwest corner of the site, southeast of the Abbott Street East and Shea Road intersection.

For the purposes of this report Fernbank Road and Abbott Street East are assumed to be in an east-west orientation.

Background and Project Description

Much of the northeast representation of an upland coniferous forest, referred to in this report as the 'northeast forest', is identified as part of the Natural Heritage Features Overlay on Schedule C-11A of the City`s Official Plan. No areas designated Urban Natural Features, Natural Environment Area, Conservation Area, Significant Wetlands, Natural Heritage System Core

Area, or Natural Heritage System Linkage Area were identified in the vicinity of the site on Schedule C-11A. Organic soils are mapped on Schedule 15 of the Official Plan to the west of the northwest portion of the site, but not on the site itself. There are no Areas of Natural and Scientific Interest or provincially significant wetlands in this portion of Stittsville. The closest provincially significant wetland is part of the Goulbourn Wetland Complex, about 2.1 kilometres to the west of the site. Unevaluated wetlands, as shown on the geoOttawa layer, are in the central portion of the site.

The east edge of the Fernbank East Natural Area, as identified in the former Region of Ottawa-Carleton's Natural Environment System Strategy (Keddy, 1997), is in the central-west portion of the site. This 60 hectare Natural Area was rated low overall. None of the eight evaluation criteria were scored with a moderate or high significance. No regionally or provincially rare species, special wildlife concentrations, or large-scale linkages were identified for the Natural Area. The extent of site fragmentation was considered low, with a moderate impact of human disturbance, and a moderate to high impact of non-native species. The extension of Shea Road, the institutional infrastructure, and site preparation tree removal on the west side of Shea Road have since severed the portion of the natural area in the central-west portion of the site from the small remaining portion of the Natural Area west of Shea Road

The East of Shea Road Urban Natural Area includes many of the on-site forests. As the Fernbank Community Design Plan (CDP) was not part of the City's Urban Area when the Urban Natural Area Environmental Evaluation Study was completed by Muncaster and Brunton (2005), this Urban Natural Area was surveyed in 2006 as part of the Fernbank CDP work (Muncaster, 2007). The 30.0 hectare Urban Natural Area was rated moderate overall, with a high rating assigned the size and shape criterion. Three other criterion, connectivity, regeneration and wildlife habitat, were assigned a moderate rating; with the remaining five evaluation criteria assigned a rating less than moderate (that is a score of '1' or '2' out of '5'). Any linkage to other Natural Areas would cross busy roads and agricultural land, and since the 2006 review, expanding urban residential developments. Limited regeneration is present in the forests in the Urban Natural Area due to the high density of cedars. All of the East of Shea Road Urban Natural Area was considered to have an edge effect influence and a low native flora Co-efficient of Conservation rating was assigned by Muncaster (2007). Pathways used extensively by dog walkers are throughout the Urban Natural Area. The impact of non-native flora, including buckthorn, Manitoba maple and tartarian honeysuckle, was considered moderate. Historical logging and agricultural activity have also impacted the ecological integrity of the Natural Area (Muncaster, 2007).

Forests, scrub, thicket and meadows are identified for the site as the natural vegetation on Figure 3-7-1 of the Jock River Reach 2 Subwatershed Study, with the forest cover noted as coniferous on Figure 3-7-2 and as habitat for area-sensitive forest birds on Figure 3-7-14 (MMM, 2005). No forest interior habitat (likely using a 200 metre edge threshold rather than the current 100 metre edge threshold currently applied) was identified by MMM (2005) and the vegetation/landform types were not considered rare, greater than fifty years old or part of an Area of Natural and Scientific Interest or Provincially significant wetland. Riparian cover was noted along the on-site channels.

As shown on the Draft Plan of Subdivision (Map 3), two-hundred and eighty-six single detached urban residences are proposed for the site, with townhome blocks in the west and central-west portions and a 0.9 ha commercial block immediately east of Shea Road. A 5.1 hectare park is proposed for the northeast portion of the site, including the core of the northeast forest. A 3.1 hectare school block is proposed south of the northeast park in the central portion, with a one hectare park block further to the south (Map 2). The north park will be a natural park with the forest retained, while the south park will have an active program component. The site will be accessed with an extension of Goldhawk Drive onto the site from the northeast and extending to Fernbank Road, and extensions of Cope Drive and Bobolink Ridge from the east extending to Shea Road and Abbott Street East, respectively. Local roads will be internal to the site from these roads, with Street No. 12 also extending to Shea Road. The existing stormwater pond immediately to the southeast of the site, north of Fernbank Road, will be utilized and the residences will be on full municipal services.

To provide urban services to the west of Shea Road, a servicing corridor was constructed in 2020 through the middle of the site along the proposed Cope Drive extension (Photo 1). This is shown with black hatching on Map 1.

Methodology

This EIS and TCR was prepared in accordance with of the City of Ottawa's EIS Guidelines, with guidance from the Natural Heritage Reference Manual (OMNR, 2010).

The major objective of this EIS is to determine the feature and functions of the on-site and adjacent natural environment conditions, including potential Species at Risk utilization and suitable tree retention, and to assess the anticipated impacts associated with the proposed construction and operation of the urban residential development, including the associated vegetation removal, on these features and functions.

Colour aerial photography (1976 - 2019) was used to assess the natural environment features in the general vicinity of the site. A field review of the site and adjacent lands was completed on June 24th, 2022, from 07:15 to 11:30 under clear skies, a light air, and an air temperature of 18° C. In addition, Shaun St. Pierre of BCH Consulting Inc. completed reviews of the site, including a butternut health assessment of the site on May 25th, 2022 and December 7th, 2021 and the central portion of the site was reviewed by Bernie Muncaster for the servicing expansion along the Cope Drive extension on May 13th, 2020, from 13:20 to 15:25 under sunny skies, a light to moderate breeze, and an air temperature of 14° C. Additional field surveys of the site and adjacent lands were completed as part of the Fernbank Community Design Plan (Muncaster, 2007).

The spring field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over thirty-three years of experience in completing natural environment assessments. The owner of the site is CRT Development Inc. It is proposed to remove the woody vegetation required for construction in 2022 or 2023 outside of the breeding bird season.

Existing Conditions

The site is generally flat with a gentle slope to the south. Bedrock was observed at the surface in many portions of the site. The geological mapping describes the bedrock as interbedded dolostone and limestone of the Gull River formation. The soils of the area were mapped by Schut and Wilson (1987) as a mixture of well drained and poorly drained sandy loams, which is consistent with field observations.

An upper reach of the Flewellyn Drain was originally in the southeast corner of the site and in a north-south alignment immediately to the east of the site. Since construction in 2018 of stormwater management ponds to the southeast, the original channel to the east has been filled in and the area is now residential development. The source for the remaining channels on the site is the central-east wetland habitat. Muncaster (2007) noted that no fish were captured in the channel with electrofishing sampling. The channel had a modest contribution to downstream fish habitat, but Muncaster (2007) concluded that it did not provide any on-site fish habitat based on the lack of fish, no riparian cover, straight channelized nature and extensive cattle disturbance. Clear, flowing water was common in the channels on June 24th, 2022 following rain events. In the forest cover, the channel is more defined and wetted widths were up to 1.2 metres, with water depths up to 10cm (Photo 2). Within the thicket swamp to the north, the channels are less defined and often wider in areas of expanded standing water (Photo 3). The channels are dominated by fine substrate, with short stretches of coarser material. Riparian cover was good in the forest and lacking in the willow thickets. In the southeast corner of the site, a west-east addition to the channel was recently constructed to connect the channel flow to the stormwater management ponds to the southeast. The original alignment of the channel does not connect to the stormwater pond to the south. As part of the overall Fernbank CDP process, an agreement was reached with RVCA for removal of the upper channels in the study area, with enhancements completed along the retained Monaghan Drain corridor in the central-east portion of the Fernbank community.

Cultural Meadow and Thicket

The vegetation communities along the hydro corridor in the north and west portions of the site are identified as cultural meadow and thicket habitats on Map 1 (Photos 4 and 5). Non-native and/or invasive species such as common brome grass, June meadow grass, timothy, reed canary grass, European bur-reed, bird's-foot trefoil, evening primrose, tufted vetch, tall buttercup, wild carrot, red clover, white clover, white-sweet clover, ox-eye daisy, yellow hawkweed, wormseed mustard, wild parsnip, narrow-leaved goldenrod, Canada goldenrod, tall goldenrod, white bedstraw, purple loosestrife, broad-leaved cattail, common mullein, Canada thistle, colt's-foot, blueweed, bladder campion, wild grape, soapwort, common dandelion, common mugwort, yellow bedstraw, St. John's wort, and common burdock are common in the cultural meadows and thickets, along with common buckthorn, staghorn sumac, red raspberry, apple, crabapple, Tartarian honeysuckle, common juniper, Bebb's willow, and slender willow shrubs. Scattered white cedar, balsam poplar, trembling aspen, grey birch, black walnut, bur oak, and white elm trees are up to 22cm dbh and a mature weeping willow in the southeast corner of the site.

Upland White Cedar Coniferous Forest

Upland white cedar coniferous forests represent the bulk of the northeast forest, along with representation in the south-central portion of the site (Photos 6 and 7). The cedar forests are generally intermediate-aged, with a few cedars up to 44cm diameter at breast height (dbh). Stumps indicating historical logging are common in many areas. The density of cedar stems is high in most areas, resulting in limited light into much of the understory and ground of the forest and associated reduced flora in these other layers (Photo 7). Trembling aspen, white birch, and white spruce in the 40cm to 50cm dbh range are scattered among the dominant white cedars, with smaller balsam poplar, bur oak, and green ash stems also present. As described below, ten butternuts varying size between 1cm and 69cm dbh were observed in the cedar forests (Photo 8). Only two of the ten butternuts (1cm and 45cm dbh) were assessed as healthy. Windthrow was extensive in areas and many of the poplars had fungus along the trunks, but except for the windthrow, the cedars appeared to be in generally good condition.

Glossy buckthorn, common buckthorn, tartarian honeysuckle, apple, and red raspberry are representative of the limited understorey in the upland cedar forests, with poison ivy, sensitive fern, common strawberry, Canada mayflower, partridgeberry, evergreen woodfern, wild sarsaparilla, tall buttercup, ox-eye daisy, thicket creeper and wild grape representative of the ground flora.

Exposed rock and boulders are common in the cedar forest. Several dogwalkers and other people were observed during each of the field surveys on the many trails in the forest and adjacent lands. Wooden foot bridges are across the channels described above. Tree forts and painted rocks were also observed in the cedar forests.

Upland Poplar Deciduous Forest

Scattered representations of this community are in the central and south portions of the site (Photos 10 and 11). Balsam poplar and trembling aspen are the common tree species, with trembling aspens up to 30cm dbh the largest trees noted in the deciduous forests. White spruce, bur oak, white elm, white ash, green ash, white cedar, and white birch are also present. Many of the poplar trees had fungus on the trunks and evidence of emerald ash borer damage was common on the ash trees. Windthrow was also common in the deciduous forests and wild grape coverage is common on many of the trees and shrubs.

The understory is much more extensive (Photo 11) than in the coniferous forests, with regenerating poplar stems common in many areas along with white cedar, bur oak, and white elm saplings and red raspberry, beaked hazel, common buckthorn, grey dogwood, and glossy buckthorn shrubs. Canada goldenrod is dominant in many areas of the ground flora, with wild parsnip, thicket creeper, tall buttercup, yellow avens, common dandelion, ox-eye daisy, poison ivy, and wild grape also representative of the ground vegetation in the deciduous forest.

Upland White Cedar – Poplar Mixed Forest

This forest community is to the west of the hydro corridor, east of Shea Road (Photo 9). Trembling aspen, white cedar, and green ash are the common tree species, with trembling aspens up to 40cm dbh the largest trees noted in the mixed forest. Grey birch, white spruce, bur oak, white ash, and white birch are also present. Many of the poplar trees had fungus on the trunks and evidence of emerald ash borer damage was common on the ash trees. Windthrow was also common in the mixed forest.

The understory is thick with regenerating poplar stems common in many areas along with white cedar and balsam fir stems and red raspberry, black current, common buckthorn, red-osier dogwood, and glossy buckthorn shrubs. Ground flora includes field horsetail, common dandelion, bittersweet nightshade, sensitive fern, blue violet, evergreen wood fern, and wild grape.

Tall Shrub Swamp

Slender willow is dominant in the thicket shrub wetland representation in the middle of the site, with Bebb's willow, red-osier dogwood, narrow-leaved meadowsweet, red raspberry, nannyberry, and glossy buckthorn shrubs also present (Photo 12). Regenerating balsam poplar, white elm, and ash stems are among the periphery of the thicket swamp. Reed canary grass and purple loosestrife are dominant ground vegetation. Other examples of the ground flora include joe-pye-weed, Canada bluejoint, wild grape, Canada thistle, marsh bedstraw, talk buttercup, daisy fleabane, water horehound, tufted vetch, and sensitive fern.

Robust Emergent Marsh

The highly invasive European bur-reed is dominant is this central-west wetland community within the hydro corridor (Photo 13). Broad leaved cattail is common, with narrow-leaved goldenrod, Canada goldenrod, marsh bedstraw, reed canary grass, and wool grass also present in the marsh. Woody vegetation includes slender willow, Bebb's willow, glossy buckthorn and narrow-leaved meadowsweet shrubs, along with regenerating poplar stems. Small areas of standing water were observed in the hydro corridor adjacent to historical access roads, but not in the marsh itself.

Wildlife observed on and adjacent to the site includes white-tailed deer tracks, red squirrel, green frog (in the hydro corridor), black-capped chickadee, white-breasted nuthatch, turkey vulture, American crow, northern flicker, American woodcock, red-winged blackbird, great-crested flycatcher, yellow warbler, common yellowthroat, American robin, northern cardinal, American goldfinch, blue jay, and song sparrow. Mallard, Canada goose, ring-billed gull, and bullfrog were observed in the stormwater pond immediately to the southeast of the site. A few snags with potential wildlife cavities were observed, though most of the cavities were too close to the ground and too exposed to be good wildlife features. The lack of hedgerows and larger trees reduces the potential for larger wildlife cavities on the site. As described below rock piles were

observed in the north portion of the hydro corridor. No other potential hibernaculum features were noted on or adjacent to the site.

Dog walkers were reported by Muncaster (2007) as common along trails through and adjacent to the cedar forest and were again common in 2022. Wildlife observations by Muncaster (2007) in the cedar forest included white-tailed deer, woodchuck, American woodcock, ruffed grouse, black-capped chickadee, white-throated sparrow, American robin, northern cardinal, black-and-white warbler, and blue jay. The coniferous forests in the East of Shea Urban Natural Area are about 300 metres wide and thus contain some habitat for area sensitive species and to the north of the Cope Drive extension a limited amount of forest interior habitat. For example, black and white warbler and ruffed grouse were observed in the coniferous forest by Muncaster (2007).

Photo 1 - Cleared servicing corridor in the central portion of the site along the Cope Drive extension, with view looking west to hydro corridor

Photo 2 - North-south channel within forest cover in the southeast portion of the site. View looking north

Photo 3 - Channel is wider, with areas of ponding in the willow thicket swamp. View looking west

Photo 4 - Typical condition of on-site cultural thickets. This example is in the southeast corner of the site, with view looking north

Photo 5 - Cultural thicket in the hydro corridor in the north portion of the site, with view looking east

Photo 6 - Typical condition of upland cedar coniferous forest. This example is in the south portion of the site, with view looking north

Photo 7 - Limited understory and ground flora in upland cedar coniferous forest. View looking south

Photo 8 - Butternut assessed as unhealthy in the upland cedar coniferous forest in the south portion of the site, with view looking south

Photo 9 – Upland cedar-poplar mixed forest in the west-central portion of the site. View looking east towards the hydro corridor

Photo 10 - Upland poplar deciduous forest in the south portion of the site, with view looking west

Photo 11 - Thick understory of poplar deciduous forest. This example is in the central portion of the site, with view looking west

Photo 12 - Willow thicket tall shrub swamp in the central portion of the site, with view looking northwest

Photo 13 - Robust emergent marsh in the west portion of the site, with view looking northwest to upland mixed forest

Species at Risk

The only Species at Risk observed on or adjacent to the site during the field surveys was butternut. As mentioned, ten butternuts varying size between 1cm and 69cm dbh were observed in the cedar forests. Only two of the ten butternuts (1cm and 45cm dbh) were assessed as healthy. Once the butternut health assessment has been submitted to the Ministry and a 30 day review period has past, the butternuts assessed as unhealthy (see grey circles on Map 1) can be removed pending obtaining a Tree Cut Permit from the City and the bird nesting period. Due to their location within projected road alignment, it is not proposed to retain the two healthy butternuts (green circles on Map 2). The removal of these butternuts will be registered on-line following the Ministry process and compensation will be provided with plantings and monitoring off-site by a third party of 22 pure butternut seedlings.

Barn swallow, bobolink, and eastern meadowlark are other Species at Risk that have been observed elsewhere on the Fernbank CDP lands. The Ministry of Natural Resources and Forestry's Make a Map: Natural Heritage Areas website was reviewed on June 16th, 2022. 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 areas (18VR21-82, - 92 and -93). Four Species at Risk were reported for these squares: bobolink, eastern meadowlark, butternut, and black ash. MECP has temporarily paused protection for black ash and its habitat under the *Endangered Species Act*.

In addition to bobolink, eastern meadowlark, and barn swallow, bank swallow, and eastern whip-poor-will are Species at Risk identified in the Ontario Breeding Bird Atlas for the 10km squares (18VR21) that include the site and general area. Eastern meadowlark and bobolink utilize larger grassland areas such as hayfields and were observed to the west of the site during the Fernbank Community Design Plan studies. A Development Plan was approved in 2012 by the Kemptville District Ministry of Natural Resources and Forestry for removal of 82.6 acres of potential habitat for these Species at Risk. Due to the extent of woody vegetation in the cultural meadow habitat of the Westwood Phase 4 lands, no potential habitat is considered present for bobolink or eastern meadowlark on the current site. No suitable structures or other habitats were observed on or adjacent to the site for barn swallow or chimney swift. No sand banks are present that may be used by bank swallow. No bird or other wildlife activity was observed in the stockpiles within the cleared Cope Drive extension and the piles appeared to contain too much coarse material to be used by bank swallow. The understory or tree density of the on-site forests is considered too thick to be utilized by eastern whip-poor-will habitat, which requires large wooded areas with open patches, plantations, open woodlands, and/or alvars.

Blanding's turtle and snapping turtle were identified in the Ontario Reptile and Amphibian Atlas for the 10km squares (18VR21) that includes the site and general area. The on-site wetland habitat is not considered suitable for turtles due to its isolated nature, small areas of standing water, and narrow channels.

The potential Species at Risk in the City of Ottawa were also reviewed. Endangered and threatened species that have historically been reported in the overall City include 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, chimney swift, eastern meadowlark, barn swallow, bank swallow, bobolink, whip-poor-will, bald eagle, golden eagle, cerulean warbler, least bittern, eastern cougar, lake sturgeon and American eel.

The habitat requirements of the above species were reviewed. The extent of cavity trees is well under the 10 per hectare density for significant bat habitat per the Ministry threshold. Of the species currently receiving protection under the *Endangered Species Act* only butternut is considered to have the potential to be on the site. Eight of the ten on-site and adjacent butternuts were assessed as unhealthy and compensatory plantings will be provided for removal of the two healthy butternuts.

Significant Woodlands

A forested area is considered significant woodlands in the urban area of the City of Ottawa if the forest is 0.8 hectares in size or larger and is 60 years of age and older at the time of evaluation. Representation of the northeast forest, north of the Cope Drive extension, is present on 1960 aerial photography. The west portion of this forest was removed with construction of the hydro corridor in the 1980s. Approximately 1.3 hectares of the forest as present in 1960 remains today and thus the forest would be considered significant woodlands. A small representation of the 1960 forest will be retained in the northeast forest block to be retained north of the Cope Drive extension. This will be augmented with five hectares of retained forest as shown on Map 2. Over time there will be a greater area of significant woodlands than currently. No other forest parcels greater than 0.8 hectares on 1960 aerial photography remained after the hydro corridor construction.

Significant Wildlife Habitat

The potential for significant wildlife habitat was assessed using the guidance in OMNR (2010) and MNRF (2015). Potential components which may lead to a designation of significant wildlife habitat include seasonal concentration areas of animals, rare vegetation communities or specialized habitat for wildlife, habitat for species of conservation concern, and animal movement corridors.

Stone piles along a north-south fence line in the north portion of the hydro corridor may represent significant wildlife habitat for snakes and other wildlife. At the detailed design stage, the location of this feature relative to the cul-de-sac at the end of Street No. 14 in the hydro corridor will be determined and if the fence must be disturbed the mitigation measures recommended below implemented. A green frog was heard in the hydro corridor and other amphibians may be preset in the wetter portions of the thicket swamp. As no amphibians were heard in this area it is not anticipated that the density of amphibians would be high enough to meet the thresholds in MNRF (2015). However, the mitigation measures recommended below for potential amphibians are to be properly implemented.

No other field observations which would trigger a significant wildlife habitat designation with respect to the ELC communities present were noted. For example, the habitats do not support waterfowl stopover or staging areas, colonial nesting bird breeding habitat, or other examples of seasonal concentration areas. No wetlands suitable for turtle habitat, rare vegetation

communities as noted in MNRF (2015), Provincially rare species, evidence of animal movement corridors, or rare or specialized habitats were observed. The forests do not appear to support raptor wintering areas and old growth forest is not present. Although a small amount of forest interior habitat is present is the northeast forest, bird species considered species of special concern such as wood thrush and eastern wood pewee were not observed in the forests during the Fernbank CDP breeding bird work or the more recent field surveys. The extent of cavity trees is well under the 10 per hectare density for significant bat habitat per the Ministry threshold. Forest interior habitat will remain in the forest block to be retained north of the Cope Drive extension. No seeps or springs were observed. No potential bat hibernacula or maternity colonies in the forests, or suitable turtle nesting or wintering areas were observed.

Due to the abundance of disturbed activities in the immediate area including urban residential developments and agricultural activity, there is a limited potential for linkage functions in and adjacent to the site. No linkages were identified by Keddy (1997) for the Natural Areas in the general area.

Impact Analysis and Recommendations

The significant natural heritage features, as identified in the Provincial Policy Statement and OMNR (2010), observed on and adjacent to the site are significant woodlands in the northeast forest, potential significant wildlife habitat associated with a stone fence in the hydro corridor in the north portion of the site, and butternut, an endangered Species at Risk. The meadow habitat contains too much woody vegetation to represent potential nesting habitat for the grassland Species at Risk bobolink and eastern meadowlark. The channels do not appear to support direct fish habitat and with construction of the adjacent stormwater management facilities and residential developments if flow is present in the channels during major events the flow would not be connected to downstream fish habitat.

Local wetland habitat is also present on the site. The wetland within the hydro corridor will be retained but the majority of the tall willow thick swamp will be removed. This habitat is common in the general landscape and is low in diversity. Mitigation measures for removal of the local wetland habitat are identified below.

The portion of the northeast forest to be retained is 5.2 hectares, representing approximately half of the existing forest and large enough to continue to support a small amount of forest interior habitat. By 1980 the existing forest to be retained generally had filled in and thus over time the retained forest will represent a greater area of significant woodlands relative to the 1.3 hectares present today based on forest cover in 1960 that was not removed for the construction of the hydro corridor in the 1980s. Trails for dog walking in the existing forest will also be retained.

Due to their location within projected road alignments, it is not proposed to retain the two healthy butternuts (green circles on Map 2). The removal of these butternuts will be registered on-line following the Ministry process and compensation will be provided with plantings and monitoring off-site by a third party of 22 pure butternut seedlings.

As the smaller park south of the school lands will be an active park tree retention in this area is not shown on Map 2 though, as always, the extent of tree retention should be maximined as

much as possible, including along the edges of the active park. Unfortunately, due to the locations of the other on-site trees relative to the urban development and the grading and other urban servicing requirements, other tree retention on the site is not anticipated. As shown on the Macro Grading Plan by IBI Group (May 9th, 2022) grade raises will be required for portions of the site closer to existing developments. For example, raises greater than 1.4 metres are anticipated approaching Abbott Street East, with raises of about two metres required in the south portion of the site to bring the elevation in line with Fernbank Road. The proposed grade raises will be approximately one metre in the east-central and northeast areas.

Due to Shea Road to the west, the church parking lot and hydro corridor to the north, recent urban developments to the east including Goldhawk Drive, Angel Heights, and the stormwater management facility and the Fernbank Road corridor to the south, the potential for co-owned trees or adjacent trees with critical root zones that may extend onto the site from adjacent lands is limited. The vegetation along the south edge of the Trans-Canada Trail between the church parking lot and the hydro corridor was examined. There is extensive wind damage in this area. The largest trees in sustainable condition were white spruce (38cm dbh) and white cedar (32cm dbh) immediately to the north of the property line. The critical root zones of these trees extend a maximum of three metres onto the site. Thus, a no disturbance area extending three metres from the property line is recommended in this area of Block 312, as shown with green shading on Map 2. Another area of potential concern is along the west side of Street 13 at the south edge of the site, adjacent to the existing residence off Fernbank Road. The top of a couple of the trees immediately to the west of the site have been blown off. The property line could not be easily located in this area. The property line needs to be staked and discussions are required with the adjacent landowner to see if any of the trees in the east portion of the front yard of the existing residence on north side of Fernbank Road have critical root zones extending onto the site and whether there is a concern with removing these trees. No city-owned trees appear to be present in the Shea or Fernbank Road allowances or the road allowances along the east side.

Summary of Mitigation Measures

1. The extent of exposed soils is to be kept to a minimum at all times. Re-vegetation of exposed, non-developed areas is to be achieved as soon as possible. The objective with respect to erosion and sediment controls will be to ensure that the surface water runoff leaving the work area is not degraded with respect to water quantity or quality;
2. To protect breeding birds, woody vegetation removal should not occur between April 15th and August 15th, unless a breeding bird survey conducted by a qualified biologist within five days of the woody vegetation removal identifies no active nests in the trees or shrubs. No stick nests or other evidence of raptor utilization were observed on or adjacent to the site. If tree removal is anticipated between November 1st and March 31st, surveys should be undertaken ahead of time to determine if overwintering wildlife are utilizing trees with suitable cavities;

3. Stone piles were observed in the hydro corridor in the north portion of the site. If required, disturbances to stone piles are to occur outside of the winter and spring periods to protect wildlife, with the ideal time for removal in August and September. City of Ottawa (2015) contains mitigation measures for the removal of stone piles including retaining a biologist to inspect habitat for occupancy prior to removal during the more sensitive periods, and in cases where occupancy is uncertain, the stone piles are to be disassembled slowly (by hand where possible) to reduce potential impacts and allow wildlife time to relocate;
4. The ideal time for removal of trees with potential wildlife cavities is between August 15th and October 15th to protect both breeding birds and overwintering wildlife in cavity trees. Depending on the year, April may also be a suitable time. If winter tree removal is anticipated, surveys should be undertaken ahead of time to determine no overwintering wildlife use in trees with suitable cavities;
5. Prior to site alterations in the thicket swamp and remnant channels to be disturbed the channels are to be slowly drained and any fish, amphibians and other susceptible wildlife relocated to the stormwater management pond or in the channel network downstream of Fernbank Road. A Collector's Permit will be required from MNRF. This relocation should be completed during the low flow summer months of July and August after the more sensitive spring period;
6. Stockpiles of fine material should be covered with tarps before May 1st to prevent nesting by swallows and other wildlife if the stockpiles will be disturbed before August 15th,
7. The limit of the parkland in the northeast forest, trees to be retained along the north edge west of the church parking lot, and other trees that can be retained are to be protected during construction with temporary fencing at least 1.3 metres in height installed from the tree trunk a distance of ten times the retained tree's diameter (the critical root zone). The fencing is to be clearly signed indicating that the fence is "to protect the critical root zone of the retained trees'. Signs or notices are not to be attached to the retained trees. No grading, heavy machinery traffic, stockpiling of material, maintenance and refueling, or other activities that may cause soil compaction is to occur within five metres of the critical root zone of the trees to be retained and protected. The root system, trunk or branches of the trees to be retained are to be protected. Exposed roots are to be kept moist and protected until they can be backfilled, or if this is not feasible, as advised by a certified arborist, the roots cut cleanly as far from the tree as possible at a proper angle to facilitate healing. If any damage or site alteration is necessary within the critical root zones, City of Ottawa staff and the project biologist are to be contacted. Exhaust fumes from all equipment during construction will not be directed towards the canopy of the 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 trees' critical root zones, the barrier should be kept in place until all site construction has been completed in the vicinity of the trees;
8. Many helpful wildlife oriented mitigation measures are detailed in the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2015). Contractors are to review in detail and understand the City's Protocol for Wildlife Protection during Construction prior to commencement of construction. The contractor is to be aware of the potential Species at Risk in the vicinity of the site, including butternut. Appendix 1 of

City of Ottawa (2015) describes these species. The project biologist for this construction is Bernie Muncaster (613-748-3753). Any Species at Risk sightings are to be immediately reported to the project biologist, project manager, and the Ministry of the Environment, Conservation and Parks and work that may impact the species suspended immediately until direction is obtained from the Ministry;

9. As recommended in City of Ottawa (2015), prior to beginning work each day the work areas are to be checked for wildlife by conducting a thorough visual inspection of the work space and immediate surroundings. See Section 2.5 of the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2015) for additional recommendations on construction site management;
10. To discourage wildlife from entering the work area during construction, the site should be kept clear of food wastes and other garbage, and proper drainage provided to avoid accumulation of standing water, which could attract amphibians, birds, and other wildlife to the work area;
11. Any snakes and other wildlife that may be impacted during construction are to be relocated to the hydro corridor or the northeast forest block. Animals should be moved only far enough to ensure their immediate safety. Species at Risk are to be moved only by persons trained to do so and after receiving direction from MECP. See Appendix 1 and the links in Section 4 of City of Ottawa (2015) for suggestions on how to effectively relocate turtles and snakes; and,
12. There are no planting sensitivities for the site. 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, red oak, white pine, and white spruce, along with nannyberry, elderberry, and dogwood shrubs. Use of invasive non-native plant material is strongly discouraged.

Additional recommended mitigation measures for sediment and erosion control and general environmental protection include:

13. Any groundwater that must be removed from work area will be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to release to the environment;
14. Seepage barriers such as silt fencing, straw bale check dams and other sediment and erosion control measures will be installed as required to OPSD requirements in any temporary drainage ditches and around disturbed areas during construction and stockpiles of fine material. These control measures must be properly maintained to maximize their function during construction;
15. Silt fencing is recommended along the edges of the work area. The fencing must be properly keyed in to filter runoff, and maintained as required including repair of broken panels and removal of accumulated sediment;
16. Municipal by-laws and provincial regulations for noise will be followed and utilities will be located as required in the vicinity of the site prior to construction; and,
17. 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

A Tree Cut Permit will be required for removal of all trees greater than 10cm dbh. It is proposed to remove the woody vegetation not to be retained in 2022 or 2023 outside of the breeding bird season. 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 for adjacent trees has been properly constructed.

Cumulative Effects

The Canadian Environmental Assessment Agency (CEAA) defines cumulative effects as…"*the effects on the environment caused by an action in combination with other past, present, and future human actions*…" They occur when two or more project-related environmental effects, or two or more independent projects, combine to produce an augmented effect. These cumulative effects may be positive or negative.

Representation of significant woodlands will be retained and over time the extent of significant woodlands will increase relative to current conditions as the retained forest ages. Removed of two healthy butternuts will be compensated for with off-site plantings of pure butternut stems following Ministry protocols. Local wetland habitat will be removed. The urban residential development is adjacent to existing urban residential areas, with agricultural lands to the south, south of Fernbank Road. With proper implementation of the mitigation measures described in this report it is anticipated that the construction and operation of the proposed urban residences will not increase the potential for cumulative effects on the general landscape given the adjacent land uses.

Conclusion

Two-hundred and eighty-six single detached urban residences are proposed for the site, with townhome blocks in the west and central-west portions and a 0.9 ha commercial block immediately east of Shea Road. A 5.1 hectare nature passive park is proposed for the northeast portion of the site, including the core of the East of Shea Road Urban Natural Area. A 3.1 hectare school block is proposed south of the northeast park in the central portion, with a one hectare active park block further to the site.

The site is in the urban area of the City of Ottawa and is dominated by former agricultural fields and expanding thickets and forests. The northeast forest park will retain the core of the upland forests and associated Urban Natural Area. Local wetland habitat and associated channels no longer connected to a natural watercourse downstream will be removed. Removed of two healthy butternuts will be compensated for with off-site plantings of pure butternut stems. It is important that the mitigation measures outlined in this EIS and TCR are properly implemented and maintained for protection of the local landscape and the environment in general.

References

City of Ottawa. 2015. Protocol for Wildlife Protection during Construction. August, 2015. 14 pp & Append.

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Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. January, 2015. 38 pp.

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

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.

Bernie Muncaster, M.Sc.
Principal

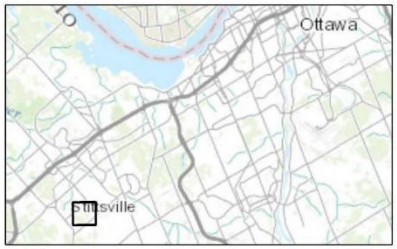
\Westwood Phase 4

MAP 1
EXISTING CONDITIONS

Subject Lands
Adjacent Lands (120m)
Cleared Area
Vegetation Community Boundary

Butternut
Category 2
Category 1

CUM - Cultural Meadow
CUT - Cultural Thicket
FOC2-2- Dry-fresh White Cedar Coniferous Forest
FOD4 - Dry-Fresh Deciduous Forest
FOM5-2- Dry-fresh Poplar Mixed Forest
re - Robust Emergent Marsh
ts - Tall Shrub Swamp



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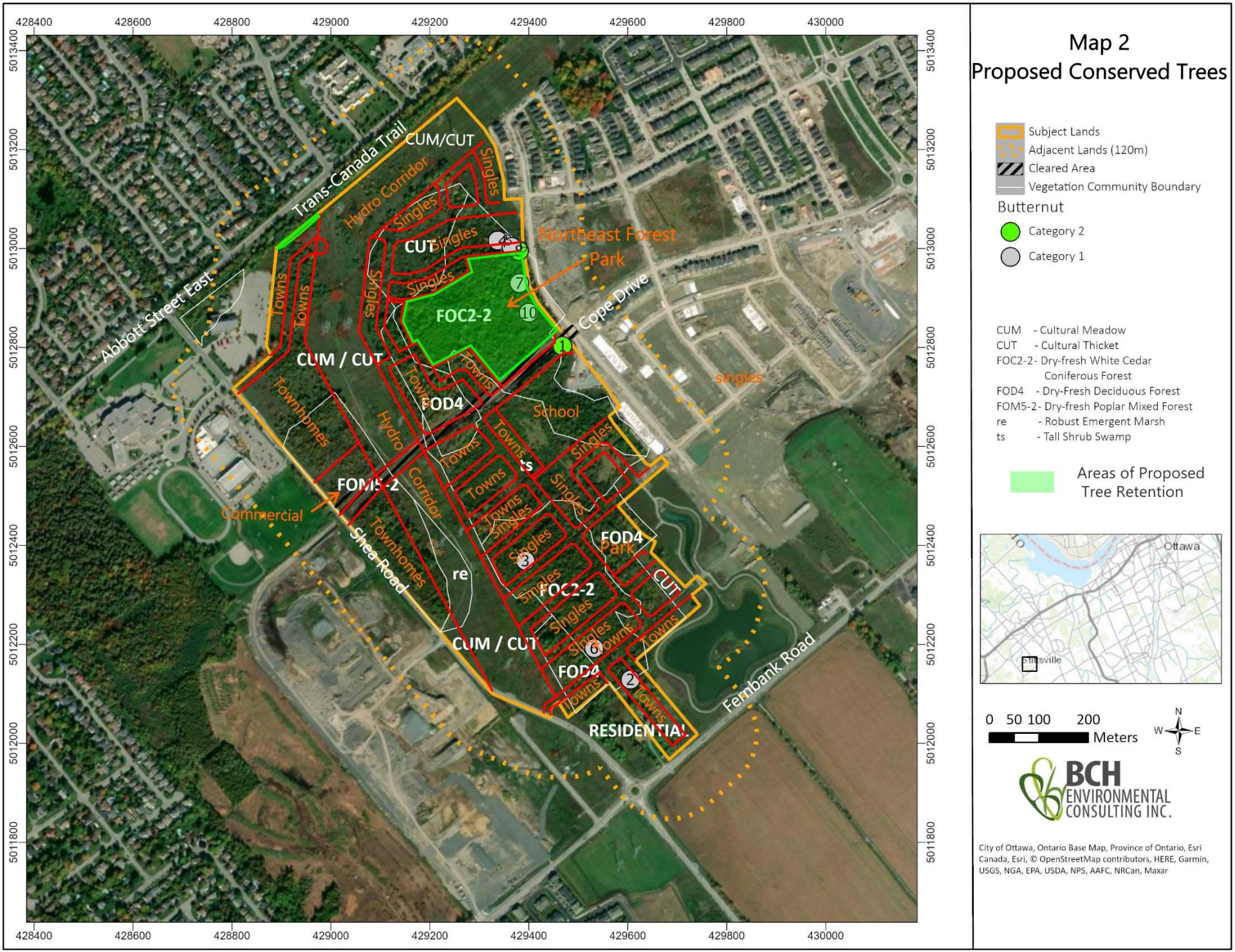
City of Ottawa, Ontario Base Map, Province of Ontario, Esri Canada, Esri, © OpenStreetMap contributors, HERE, Garmin, USGS, NGA, EPA, USDA, NPS, AAFC, NRCan, Maxar



Map 2
Proposed Conserved Trees

Subject Lands
Adjacent Lands (120m)
Cleared Area
Vegetation Community Boundary

Butternut
- Category 2
- Category 1

CUM - Cultural Meadow
CUT - Cultural Thicket
FOC2-2- Dry-fresh White Cedar Coniferous Forest
FOD4 - Dry-Fresh Deciduous Forest
FOM5-2- Dry-fresh Poplar Mixed Forest
re - Robust Emergent Marsh
ts - Tall Shrub Swamp

Areas of Proposed Tree Retention

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MAP 3 – DRAFT PLAN of SUBDIVISION