



Muncaster
Environmental
Planning Inc.

April 7, 2017

Mr. Connor Gallagher
Land Development Coordinator
Mattamy Homes
50 Hines Road, Suite 100
Ottawa, Ontario
K2K 2M5

Dear Mr. Gallagher:

**RE: Fernbank Lands, Blackstone South - Phases 5 - 8
Environmental Impact Statement and Tree Conservation Report**

This report provides an update to our Tree Conservation Report dated April 28th, 2010 as well as information on Species at Risk and other components of an Environmental Impact Statement.

Site Context

The site is north of Fernbank Road, south of the Monahan Drain and east of Terry Fox Drive, in Lots 29 and 30, Concession 10 of the Geographic Township of Goulbourn, City of Ottawa. The municipal addresses are 5431, 5505, and 5555 Fernbank Road. The site is approximately 50 hectares and is dominated by active agricultural fields planted in soybeans and corn, with remaining woody vegetation in a couple of places among the fields (Map 1). For the purposes of this report Fernbank Road is assumed to run in an east-west orientation.

The site is designated *General Urban Area* on Schedule B of the City of Ottawa Official Plan. The site is not part of or adjacent to a natural area, as identified in the former Region's Natural Environment System Strategy (Keddy, 1997) or the Urban Natural Area Environmental Evaluation Study (Muncaster and Brunton, 2005). The closest remaining Natural Area is the low rated Abbott/Iber Woodlot Urban Natural Area to the north of Abbott Street and west of Iber Road, approximately 1.2 kilometres to the northwest of the site. The Kanata South Business Park Urban Natural Area east of Terry Fox Drive and north of Fernbank Road was removed for development since the Urban Natural Area study was completed in 2005. No components of the Natural Heritage System, as shown on the Schedule L3 overlay of the Official Plan, are on the site, with the closest component being a wooded area to the south of Fernbank Road, approximately 250 metres to the southwest of the southwest corner of the site. No environmental or other constraints are shown on or adjacent to the site on Schedule K of the Official Plan. There are no Areas of Natural and Scientific Interest or Provincially Significant Wetlands in this

portion of Kanata, with Stony Swamp the closest representation of both features, approximately three kilometres to the northeast of the site. No natural environment features outside of the Monahan Drain corridor were identified in the Jock River Reach 2 & Mud Creek Subwatershed Study (MMM, 2005). Features not identified included rare vegetation, forest cover, forest interior habitat, provincially significant wetlands, or Areas of Natural and Scientific Interest. No natural vegetation was identified for the site on Figure 3.7.1 of the Subwatershed Study (MMM, 2005).

Methodology

This EIS was prepared in accordance with Section 4.7.8 of the City of Ottawa Official Plan (2010) following the EIS Guidelines and the Guidelines for City of Ottawa Tree Conservation Report, found at <http://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-0#4-7-8-environmental-impact-statement> and http://ottawa.ca/en/env_water/tlg/trees/preservation/guidelines/index.html, with guidance from the Natural Heritage Reference Manual (OMNR, 2010). This report includes the components of an Environmental Impact Statement as identified in Sections 4.7.8.11 a) through i) of the City of Ottawa Official Plan (City of Ottawa, 2010).

The major objective of this EIS is to determine the features and functions of the on-site and adjacent natural environment conditions, such as potential Species at Risk utilization or significant woodlands, and to assess the anticipated impacts associated with the proposed urban residential development on these features and functions.

Colour aerial photography (1976 - 2014) was used to assess the natural environment features in the general vicinity of the site. A field review of the site was completed on July 13th, 2011 under partly sunny conditions and an air temperature of 22° C. The winds were gentle at the beginning of the survey at 10:10, increasing to moderate by 11:30. Another field review was completed on September 17th, 2014, under overcast skies, a light breeze and an air temperature of 12° C. Notes were made on wildlife usage and potential for wildlife habitat. A field review to obtain updated field conditions was completed on April 3rd, 2017. The April 3rd, 2017 survey was under partly cloudy conditions, a light to moderate breeze and an air temperature of 6° C. The majority of the snow on the site had melted by April 3rd.

The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over twenty-eight 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. The owner of the site is Mattamy Homes. Urban residential development is proposed for the site. The woody vegetation that cannot be retained is proposed for removal in 2017, after the breeding bird season from April 15th to August 15th.

Existing Conditions

The site is isolated from an environmental perspective due to expanding urban residential and commercial developments to the west, north, and east, and agricultural activity to the south.

The topography of the site is virtually level, with the Monahan Drain immediately to the north of the site and a stormwater management facility to the northwest, at the upper end of the remaining reaches of the drain. Clay deposits dominate the soils.

The site is dominated by cultivated fields, planted in soybeans and corn in recent years (Photos 1, 2 and 3). Much of the woody vegetation formerly along the borders of the fields has been removed, with some trees and shrubs remaining in the vicinity of former farmhouses (Map 1). One former residence remains standing in the southwest corner. Non-native and/or invasive species such as orchard grass, brome grass, timothy, reed canary grass, common burdock, cow vetch, thicket creeper, wild grape, tall buttercup, wild parsnip, field horsetail, Canada goldenrod, tall goldenrod, narrow-leaved goldenrod, New England aster, tall white aster, common burdock, lamb's quarter, common ragweed, white sweet clover, horseweed, purple loosestrife, bird's-foot trefoil, Canada thistle, bull thistle, field sow-thistle, wild parsnip, common dandelion, common milkweed, and evening primrose are common along the edges of the agricultural fields, along with red-osier dogwood, blackberry, staghorn sumac, and red raspberry shrubs as well as regenerating Manitoba maple stems.

A small area of cultural woodland approximately 60 metres north of Fernbank Road in the south-central portion of the site (see the east "D" community label on Map 1) is entirely Manitoba maple, with the largest stem in the range of 70cm diameter at breast height (dbh). Many of the Manitoba maples are coppice (multi-stem) and appear to be in poorer condition with severe trunk decay, major broken limbs, fungus, and vine growth. Tartarian honeysuckle and red raspberry shrubs are common among the maple stems, with reed canary grass dominant in the ground flora. Canada goldenrod, New England aster, wild cucumber, thicket creeper, wild parsnip, field sow-thistle, and common mugwort are also well represented in the ground flora. Mature weeping willow, white cedar and eastern cottonwood are adjacent to the site at 5441 Fernbank Road in the southeast portion of the site.

Another area of cultural woodland north of Fernbank Road and to the west of the one described above contained fifteen white spruce stems up to 38cm dbh (Photo 5). These trees appeared to be in good condition. A 54cm dbh white ash was in poor condition with very minimal leaf-out and evidence of emerald ash borer (see left portion of Photo 5). Smaller Manitoba maple, red pine, and green ash were also present in the cultural woodland. A hedgerow of white cedar is along the north side of Fernbank Road. The cedars are up to 26cm dbh and appear to be in generally good condition. Wild cucumber and wild grape vines were on the lower branches of the Manitoba maple.

Two mature eastern cottonwoods and smaller Manitoba maple and apple remain around the residence in the southwest corner. The largest cottonwood (approximately 130cm dbh) is in very poor condition with little leaf-out, major broken limbs, extensive bark loss, and thicket creeper

coverage. Another mature eastern cottonwood appears to be in better condition with more leaf-out (Photo 6).

Planted rows of white spruce (identified as vegetation community 'C' on Map 1) are 100 metres long in an east-west orientation near the west edge of the site approximately 260 metres north of Fernbank Road (Photos 7 and 8). There are between three and five rows of spruce, with the largest trees 38cm dbh. A couple of smaller (up to 20cm dbh) balsam poplars are on the north side of the spruce in the east portion of the hedgerow.

The scattered trees on the site provide some local wildlife habitat but many of the larger trees are in poor condition with decreased leaf-out, broken limbs, and/or vine growth. Many of the trees are coppice, with poor form and are representative of less desirable species. For example, Manitoba maple is generally not desired due to its ragged appearance, including its weak, spreading branches, which are easily broken by wet snow, ice and wind. The minimal woody vegetation, along with the adjacent agricultural land use and increasing residential developments greatly limit any current linkage function.

The Monahan Drain immediately to the north of the site supports cool and warmwater forage fish communities (Muncaster, 2007). The benthic invertebrate data analysis by MMM (2005) identified the upper reaches of the Monahan Drain as fairly poor water quality based on the communities present. However, water temperature monitoring conducted by MMM (2005) on the Monahan Drain at Fernbank Road, downstream of the site, indicated that water temperatures remained within the coolwater temperature designation even when air temperatures exceeded 30°C for three consecutive days. A more diverse fish community was collected by MMM (2005) in the downstream reaches of the Monahan Drain, well downstream of the study area, including mottled sculpin (a species with a preferred water temperature of 17°C) near Richmond Road. Sampling of the Monahan Drain by Gore and Storrie (1992) in the vicinity of the current Terry Fox Drive identified only four fish species in the watercourse, central mudminnow, northern redbelly dace, fathead minnow, and brook stickleback. Fish species netted by Muncaster (2007) in the Monahan Drain north of the site included banded killifish, creek chub, brook stickleback, and northern redbelly dace. De-fishing on the Monahan Drain upstream of Terry Fox Drive in April, 2012 netted central mudminnow, blackchin shiner, blacknose shiner, and brook stickleback.

The substrate in the Monahan Drain channel is a combination of fines including sand, clay, and organics. Aquatic vegetation and algae provide some in-stream cover. Broad-leaved cattail, water plantain, slender pondweed, lesser duckweed, frog spit algae, and filamentous algae represent the in-stream vegetation. The aquatic vegetation is very thick later in the growing season. The riparian vegetation is limited to ground flora such as Canada goldenrod, black-eyed susan, and reed canary grass. No canopy cover is provided among the hardened channels. The aquatic habitat of the Monahan Drain is limited by the intermittent flow with a dry summer channel, exposed silt and sand at areas of erosion, livestock access, a lack of stream cover, and a lack of in-stream structure other than the aquatic vegetation (Muncaster, 2007). A large gabion basket has been removed in the Monahan Drain upstream (west) of Terry Fox Drive as part of the channel enhancements in this area. In addition, extensive riparian vegetation will provide

stream cover (Photo 4) and additional in-stream structure has been added along the meandering low-flow channel north of the site.

North-south agricultural ditches along the site boundaries convey surface water flow during storm events to the Monahan Drain. The loss of intermittent indirect aquatic habitat in the north-south channels was compensated for with the habitat enhancements along the Monahan Drain corridor.

Wildlife observed during the April 3rd field survey included white-tailed deer tracks, turkey vulture, Canada goose, ring-billed gull, killdeer, American crow, mourning dove, gray partridge, American robin, northern cardinal, red-winged blackbird, European starling, American goldfinch, black-capped chickadee, song sparrow, dark-eyed junco, and belted kingfisher.

Species at Risk

No Species at Risk, including butternut, were observed during the recent field surveys. Bobolink, barn swallow, and eastern meadowlark were observed to the west of the site during the extensive natural environment field surveys for the Fernbank Community Drainage Plan and bobolink was historically observed in a former cultural meadow south of the Monahan Drain in the northeast portion of the site. No potential grassland Species at Risk habitat remains on or adjacent to the site. No structures remain on the site that may be utilized for nesting by barn swallow. The chimneys of the remaining residence are either vented or covered, preventing potential utilization by chimney swift.

The Ministry of the Natural Resources and Forestry's Make a Map: Natural Heritage Areas website was reviewed on March 24th (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 (18VR31-03, -13 and -14). No Species at Risk were identified for these squares, with one provincially significant plant species, ram's-head lady's-slipper, recorded. This orchid is found in mature coniferous forests or coniferous fens and swamps, habitat not present on or adjacent to the site. Two provincially rare dragonflies were also noted for these squares. Given the lack of wetland habitat on the site and the limited amount along the Monahan Drain corridor, potential habitat utilization by these insects is not anticipated to be impacted by the proposed development.

The breeding birds listed in the Ontario Breeding Bird Atlas for the 10 km square 18VR31 identified barn swallow, bank swallow, eastern meadowlark, and bobolink as Species at Risk in the overall 10 km square including the study area. Bobolink and eastern meadowlark require larger areas of grasslands, including hayfields, while barn swallows utilize barns and other structures with open rafters for nesting. The cultivated fields do not represent suitable nesting habitat for the grassland Species at Risk. If the site was to be used for haying or left fallow, additional surveys should be completed for these potential grassland Species at Risk. As discussed above no structures remain on the site that may be used by barn swallow.

The potential Species at Risk and their habitat requirements reported for the overall City of Ottawa historically and in 2015 correspondence from the Ministry of Natural Resources and Forestry for an adjacent site east of Terry Fox Drive were also reviewed. The potential species include butternut, American ginseng, eastern prairie fringed-orchid, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, eastern meadowlark, barn swallow, bank swallow, bobolink, eastern whip-poor-will, bald eagle, golden eagle, least bittern, little brown myotis, northern long-eared bat, eastern small-footed myotis, olive hickorynut, eastern cougar, common gray fox, lake sturgeon, cerulean warbler, and American eel. An updated information request has been submitted to the Ministry.

In summary, the only potential Species at Risk anticipated to be on or adjacent to the site is butternut, an endangered species but present in many areas of Ottawa. As mentioned above no butternuts were observed on or adjacent to the site.

Proposed Development

As shown on Map 2 at the end of this report, a mix of detached residential units, townhomes, and higher density residential blocks is proposed for the site. In addition, a high school is proposed for a 7.1 hectare block in the southeast corner, with an elementary school in a 2.2 hectare block to the west in the central portion of the site. Two parks, 0.9 and 1.1 hectares, are in the southeast and southwest portions of the site, respectively, with a stormwater management facility planned for the northeast corner adjacent to the Monahan Drain corridor. An existing stormwater management facility immediately to the northwest of the site will also be utilized.

Impact Analysis and Recommendations

Outside of the Monahan Drain, which will be retained in a natural and enhanced corridor with a minimum width of 40 metres, there are no natural environment features of note on or adjacent to the site. Over the long-term the aesthetic and wildlife value of the site can be improved with a generous planting of native trees and shrubs. Due to the clay soils, tree and shrub species that have a high water demand are not recommended. These species include willow, poplar, and elm. The Landscape Plan for the site should include native species where possible including a mix of coniferous and deciduous species such as sugar maple, red maple, basswood, bur oak, red oak, tamarack, white pine, and white spruce trees, along with nannyberry, elderberry, and dogwood shrubs. Where possible the woody vegetation should be planted in clusters to improve the wildlife benefit.

Most of the trees on the site are representative of species with poor aesthetic or longevity characteristics and/or are specimens in poorer condition, with some white spruce in better condition in the southwest portion of the site. Due to extensive fill and grading changes required for the proposed urban development and associated servicing, retention of the scattered trees is not considered feasible. Any ecological and aesthetic features and functions of the on-site woody vegetation can be relatively easily replaced over time with plantings of native species.

Any trees to be retained must be protected with sturdy fencing installed a distance of ten times the trunk diameter from the trunk. No grading or activities that may cause soil compaction such

as heavy machinery traffic or stockpiling of material are permitted within the fencing. No machinery maintenance or refuelling, storage of construction materials, or stockpiling of earth is to occur within five metres of the outer edge of the dripline of the trees to be retained and protected. The existing grade is not to be raised or lowered within the fencing and no digging is permitted within the fencing. The root system, trunk, and branches of the trees to be retained must not be damaged. Exhaust fumes from the equipment during construction will not be directed towards the canopy of the retained trees. 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 or woodchips and kept moist until the roots can be buried permanently.

To protect breeding birds, no tree or shrub removal is to 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 trees or shrubs.

The follow additional mitigation measures are recommended to protect the Monahan Drain to the north and the environment in general:

1. 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;
2. 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.
3. Specifically, the contractor is to be aware of potential Species at Risk in the vicinity of the study corridor including butternut, barn swallow, bobolink, and eastern meadowlark. 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, as applicable. Any Species at Risk sightings are to be immediately reported to the project manager and the Ministry of the Natural Resources and Forestry and activities modified to avoid impacts until further direction by the Ministry;
4. As recommended in City of Ottawa (2015) prior to beginning work each day, check 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. Any turtles and snakes in the work areas are to be relocated to the Monahan Drain corridor to the north or the rural lands to the south. 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;
5. The objective with respect to erosion and sediment controls will be to ensure that the surface water runoff leaving the site is not degraded with respect to water quantity or quality. Erosion and sediment control will focus on best management practices;

6. Where groundwater must be removed, the groundwater will be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to release to the environment;
7. 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. An Erosion and Sediment Control Plan will be prepared during the detailed engineering analysis;
8. 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,
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.

Removal of the on-site woody vegetation is not anticipated to have a detectable impact on the ecological features and functions of the surrounding landscape. It is anticipated that the existing features and functions of the woody vegetation and other components of the natural system will continue to occur on similar lands to the south of the site. With mitigation such as removal of trees and shrubs outside of the breeding bird period and the other measures described above it is anticipated that the attributes of the existing on-site natural systems to be removed will either continue within the vegetation to be added to the site as part of the development or relocate to other areas in the overall regional landscape.

Schedule of Proposed Works

It is proposed to remove the vegetation later in 2017, after 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 any protective fencing 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.

The Monahan Drain corridor to the north of the site has been enhanced and protected. No other significant natural heritage features are on or adjacent to the site. With proper implementation of the mitigation measures described in this report it is anticipated that the construction and operation of the urban residential subdivision in agricultural fields will not increase the potential for cumulative effects in the general landscape.

Conclusions

No high-quality specimen trees, Species at Risk, valued woodlands, urban natural areas, rare communities, wetlands, steep slopes, or valleys were observed on or adjacent to the site. The site is isolated from a natural environment perspective by on-site and adjacent agricultural activity and expanding urban residential developments. The on-site trees are dominated by Manitoba maple, ash, and poplar, generally less desirable species, along with two areas of white spruce. Due to extensive fill and grading changes required for the proposed urban development and associated servicing, retention of the scattered trees is not considered feasible. Planting of native trees of desirable species along the Monahan Drain corridor, park land, and elsewhere will replace over time the current limited on-site functions.

Reference

City of Ottawa. 2010. City of Ottawa Official Plan. As adopted by City Council, May, 2003 and Updated 2010. Publication: 1-28. 227 pp & Sched.

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

Gore and Storrie. 1992. Environmental Analysis of the Monahan Drain Watershed. Prepared for the City of Kanata. July 1992.

Keddy, C.J. 1997. Summary: Natural Area Reports for Natural Areas West of the Rideau River (300 series). Prepared for the Regional Municipality of Ottawa-Carleton, Planning and Development Approvals Department. March 1997. #28-08b. 83 pp.

Marshall Macklin Monaghan and WESA. 2005. Jock River Reach 2 & Mud Creek Subwatershed Study. Existing Conditions Report. May 2005. Three Volumes

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Muncaster Environmental Planning Inc. 2007. Fernbank Community Design Plan. Natural Environment Existing Conditions Report. January 26, 2007. 29 pp & Append.

Ontario Ministry of Natural Resources. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. March 2010. 233 pp.

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 Environmental Impact Statement.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, MSc.
Principal

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Photo 1 – Soybean fields dominate the site. This view is looking northwest from north of Fernbank Road in the south-central portion of the site (September 14th, 2014)



*Photo 2 – Fields in the east portion of the site.
View looking northwest from current west end of Cope Road (April 3rd, 2017)*



*Photo 3 – Fields in the west portion of the site.
View looking east from access road along the Tapadero Avenue alignment (April 3rd, 2017)*



*Photo 4 – Plantings and other enhancements along the Monahan Drain corridor
immediately to the north of the site.
View looking east from access road along the Tapadero Avenue alignment (April 3rd, 2017)*



Photo 5 – White spruce dominates the central cultural woodland north of Fernbank Road with ash in very poor condition (September 14th, 2014)

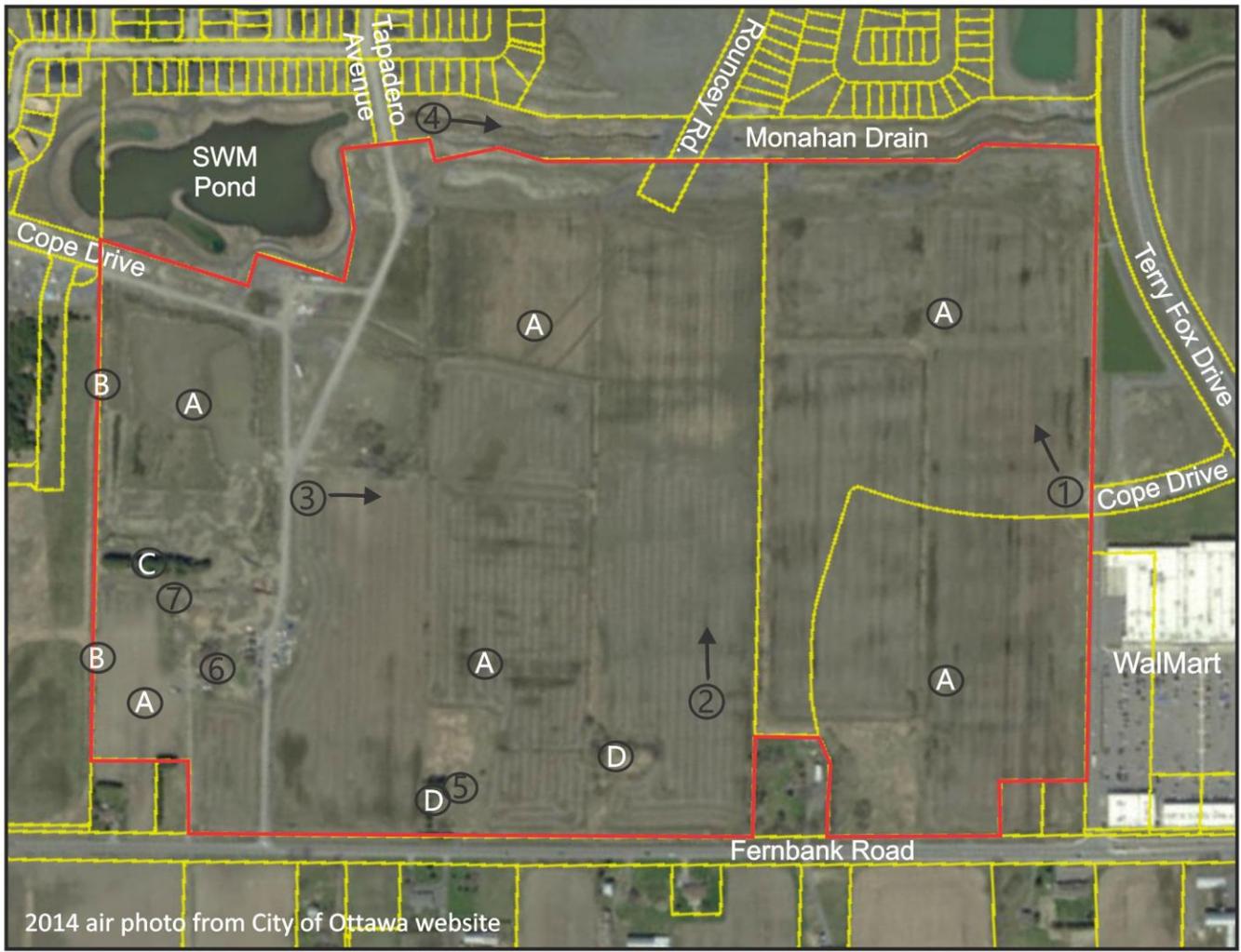


Photo 6 – Mature eastern cottonwood in the west cultural woodland (September 14th, 2014)



*Photos 7 and 8 – Rows of white spruce near the west edge of the site,
260 metres north of Fernbank Road (April 3rd, 2017 – above, September 14th, 2014 - below)*





Legend

- Phase 5 - 8 Lands
- 4 Locations of Photos in Text

Approx. Scale 1:6,400



2014 air photo from City of Ottawa website

Vegetation Communities

- A Cultivated land
- B Intermittent deciduous hedgerow
- C Coniferous hedgerow
- D Cultural woodland

Map # 1

FILE: 09-11

March 31, 2017

Prepared for:

Mattamy Homes

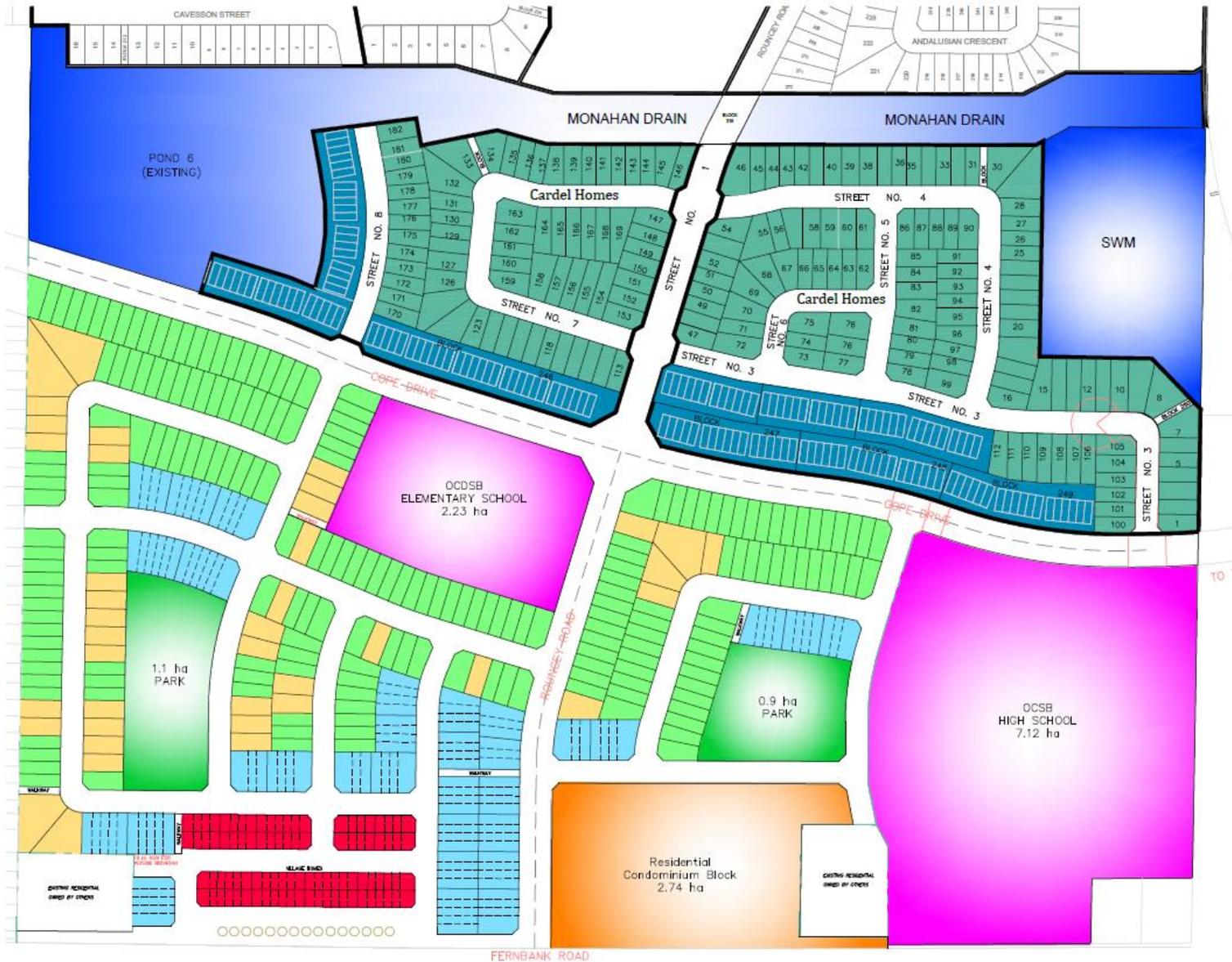
Prepared by:



CURRENT VEGETATION

**Blackstone South, Phases 5 - 8
Fernbank Community, City of Ottawa**

MAP 2 – DRAFT PLAN of SUBDIVISION



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Blackstone South

April 5, 2017

Lot Count (Mattamy)

■ 21' Village Townhome	92
■ 21' Widelot Townhome	127
■ 32' Single Detached	150
■ 46' Single Detached	38
■ Residential Block	156
	<hr/> 563

Lot Count (Cardel)

■ Singles	182
■ Towns	157
	<hr/> 339