Muncaster Environmental Planning Inc.

August 20, 2019

Ms. Michelle Taggart
Director Development
Taggart Investments
3187 Albion Road South
Ottawa, Ontario
K1V 8Y3

Dear Ms. Taggart:

RE: Environmental Impact Statement and Tree Conservation Report Update
Cardinal Creek Village - Phases 5 and 6

I have reviewed the existing information for the lands in the southeast portion of the Cardinal Creek Village urban residential development. The current lands are to the east of the developed phases of Cardinal Creek Valley, including Phases 1 to 4, and are within the *General Urban Area* of the City of Ottawa. The current study area is represented by the Phase 5 lands in the west and centre, with the Phase 6 lands to the east (Figures 1 and 2). The urban residential development will be on full municipal services.

I reviewed my April 4th, 2014 Environmental Impact Statement and Tree Conservation Report for Cardinal Creek Village and can confirm that the Phase 5 and 6 lands were covered by my 2014 report.

Existing Conditions

The Phase 5 and 6 lands are dominated by agricultural fields, with deciduous hedgerows between the agricultural fields, and cultural meadows, thickets, and woodlands present in the north portion. The deciduous hedgerows (vegetation community '4f' on Figure 2) are dominated by white ash up to 55cm diameter at breast height (dbh), with green ash and white elm up to 38cm dbh well represented. Many of the ash and elm have reduced leaf-out and vine coverage is common.

The cultural woodland (vegetation community '3' on Figures 1 and 2) includes regenerating trembling aspen, apple, sugar maple, white ash, white elm, and green ash up to 25cm dbh. Many of the trees have fungal growth, while vine coverage is common on others. Ash regeneration is extensive in the meadow and thicket habitats north of Old Montreal Road, with Manitoba maple and poplar regeneration also present. Many of these trees also have fungal growth while vine coverage is common on others. Common buckthorn, glossy buckthorn, red-osier dogwood, red raspberry, staghorn sumac, slender willow, Bebb's willow, apple, highbush cranberry and hawthorn shrubs are well represented in the cultural habitats (vegetation communities '1', '2',

and '3' on Figures 1 and 2), with the hawthorn and apple shrubs particularly dense in many areas.

The future parkland in the northwest corner of the Phase 5 lands is a combination of cultural meadow in the centre and remnants of an upland sugar maple deciduous forest. The majority of this maple forest has been removed as part of the existing Phase 3 development to the west. In addition to the dominant sugar maple, bur oak, ironwood, red maple, and white ash were common species in the deciduous forest, with white cedar, basswood, white birch, white elm, Manitoba maple, butternut, and black locust also present. The understory was generally open, indicating former pasture activity, with regenerating maple stems and some common buckthorn, blackberry, prickly ash, black currant, and staghorn sumac shrubs near the forest peripheries.

Species at Risk

I reviewed the Species at Risk added since my work in 2014, including those reported in eastern Ontario such as bank swallow, eastern small-footed bat, mottled duskywing, gypsy cuckoo bumble bee, spiny softshell, and nine-spotted lady beetle, with respect to the Phase 5 and 6 lands. Given the habitat requirements of these newly listed species there is no expectation that they will be found on or adjacent to the Phases 5 and 6 lands and were not observed during the field surveys. To update the previous work for Species at Risk and other potential natural heritage features of interest, the Phase 5 and 6 lands and adjacent areas were surveyed by Shaun St. Pierre on August 9th, 2018. Other than butternut no Species at Risk were observed. The butternut findings are discussed below.

Butternut is the only Species at Risk observed north of Old Montreal Road to date. A Confirmation of Registration for the removal of two Category 2 (retainable) butternuts on the Phase 5 and 6 lands was received on February 28th, 2019. A copy of the Confirmation of Registration will be kept on the site where the impacts to butternut are occurring. The Category 2 butternuts can be removed and tree protection fencing will not be installed around them. Butternuts originally assessed as Category 3 in 2013 were assessed as Category 1 (unhealthy) in 2018 and can be removed as the 2018 butternut health assessment has been with the Ministry for more than 30 days without comment.

Modifications to Lands to be Zoned Environmental Protection

As shown on Figures 1 and 2 below, some minor changes are proposed to the lands to be included as part of the undisturbed natural areas:

> 1) in the northwest portion of the Phase 5 lands, within a former agricultural field, 1,510 m^2 are proposed to be added the lands not be disturbed and zoned *Environmental Protection* (see blue hatching on Figure 1). This addition will be contiguous with the *Environmental Protection* lands to the east however the addition is over 80 metres west of the current west edge of the cultural woodland and upland cedar forest. Note that a six metre servicing corridor will be required in this area in the future. This is the same corridor that will be required in the *Environmental Protection* lands to the east.

2) South of Old Montreal Road where the edge of *Environmental Protection* lands was formerly associated with the edge of the Famille Laporte right-of-way where it curved around to meet Old Montreal Road. Under the updated road network and development concept, the boundary has been adjusted to add 85m^2 to the area not to be disturbed (see blue hatching on Figure 2), with 422m^2 and 32m^2 proposed for removal from the *Environmental Protection* zoing (see pink hatching on Figure 2). Both the addition and subtraction are in a former agricultural field to the northwest of the upland maple forest along the escarpment north of Old Montreal Road. At the closest point the subtraction will be over seven metres west of the maple forest and thus the critical root zones of the adjacent trees are not anticipated to be impacted.

There will be a net addition of 1,141. m^2 (1,510 + 85 – (422 + 32)) to the lands zoned *Environmental Protection.* All of the proposed additions and subtractions are within former agricultural lands and will not impact the upland forests to the east.

Temporary Relocation of North Tributary

A temporary relocation of the North Tributary, as shown by the green line on Figure 3, is required to support the Phase 5 development. The alignment of the temporary relocation will be finalized in the field but it will occur all with the future Phase 7 of the CCV development and a Tree Cut Permit has been obtained for this area.

The temporary relocation of the north tributary is proposed to spill over a siltsoxx level spreader, directing flows to the north within the future Phase 7. A plunge pool is proposed at the downstream extent of the temporary channel to dissipate energy and minimize erosion. The plunge pool stone was sized to withstand the largest anticipated velocity of 0.79 m/s. A range of techniques were utilized by the stormwater engineer to determine the appropriate stone size based on the anticipated flow conditions. Given the gradient of the slope downstream of the temporary channel, Siltsoxx or coir logs are proposed to be installed along the potential flow path to provide slope interruption and reduce potential erosion.

Tree Retention and Protection

To protect the adjacent greenspace natural areas to the north of the Phase 5 and 6 lands, and the trees to be retained along the east boundary and the upland maple forest in the southeast corner of the Phase 5 lands, tree protection fencing is to be properly installed along the north, east, and south boundaries of the Phase 5 and 6 lands. Tree protection fencing will also be placed around the future City park in the northwest portion of the Phase 5 lands to retain at this time trees on the parkland.

Forestry/Planning Services of the City of Ottawa is to be contacted after the protective fencing is installed and at least two (2) working days prior to any tree removal so that Staff can verify the fencing has been properly constructed. Other tree protection measures are provided in the original EIS and TCR and page 8 of the Environmental Protection Plan for Phases 5 and 6 (Muncaster Environmental Planning Inc., February 28th, 2019).

Tree Removal Schedule

It is proposed to remove the trees identified in this update in 2019 outside of the bird nesting season between April 15th and August 15th.

Other Recommended Mitigation Measures

The following is a summary of the recommended mitigation measures:

1. To protect breeding birds, as required no additional tree or shrub removal should 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. Tree removal should generally occur from south to north to permit wildlife to relocate to the retained lands along the escarpment north of the Phase 5 and 6 lands;

2. Trees and shrubs to be retained are to be protected with sturdy orange construction fencing at least 1.2 metres in height installed from the tree trunk a minimum distance of ten times the retained tree diameter. 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 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 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. Exhaust fumes from all equipment during construction will not be directed towards 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 zone, the barrier should be kept in place until all site servicing and house construction has been completed;

3. Plantings of native vegetation as part of the urban residential subdivision on a lot-by-lot basis are recommended to provide natural environment and aesthetic features. Potential native species to plant include nannyberry, elderberry and dogwood shrubs along with sugar maple, red maple, basswood, balsam fir, white cedar, bur oak, red oak and white spruce trees. Sourcing native species from local seed sources is strongly recommended to ensure adaptability and longevity. Only locally appropriate native species are to be used for landscaping adjacent to natural features or buffer zones;

4. To protect any trees immediately adjacent to the site, no excavations or other activities that may impact the critical root zone of these adjacent trees should be undertaken within the critical root zones. The critical root zones are identified as ten times the diameter of the tree to be protected. To be conservative, no excavations, filling, stockpiling, or other major site disturbances should occur within four metres of the property line;

5. 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;

6. 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;

7. 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;

8. 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;

9. The contractors and other on-site workers are to be aware of potential Species at Risk in the vicinity of the site including butternut, and on appropriate measures to reduce human-wildlife conflict during the work. Appendix 1 of the City of Ottawa's Protocol for Wildlife Protection during Construction (August, 2015) describes these species. The project biologist for this project is Bernie Muncaster (613-748-3753). Any Species at Risk sightings are to be immediately reported to the project biologist and the Ministry of Environment, Conservation and Parks and activities modified to avoid impacts until further direction by the Ministry;

10. 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. Any turtles, snakes, or other sensitive wildlife in the work areas are to be relocated to the undisturbed natural areas to be north. 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;

11. To discourage wildlife from entering the work areas 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 areas;

12. 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,

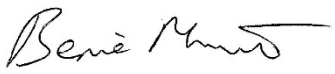
13. Waste will be managed in accordance with provincial regulations. The contractor will have a spill kit on-hand at all times in case of spills or other accidents.

Conclusion

As there are no changes in the Species at Risk assessment and the proposed changes for the development plans for the Phase 5 and 6 lands where not result in a negative impact on the retained natural environment features, I confirm that the anticipated environmental impact assessment and associated required mitigation measures have not changed since production of the 2014 Environmental Impact Statement and Tree Conservation Report and the 2015 Integrated Environmental Review.

Please call with any questions on the above EIS/TCR/IER update.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, MSc.
Principal

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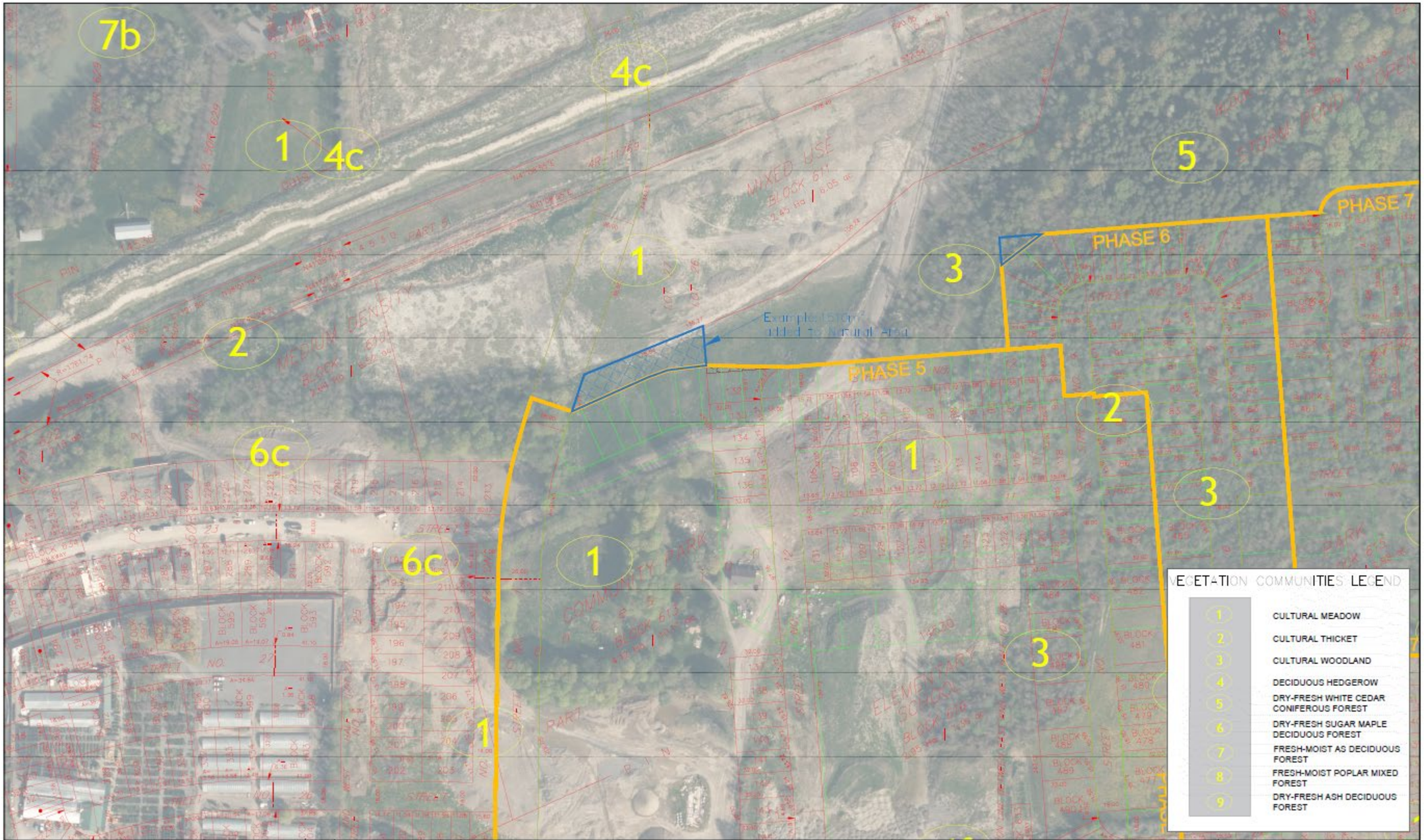
FIGURE 1 – PHASES 5 and 6 – NORTH PORTION

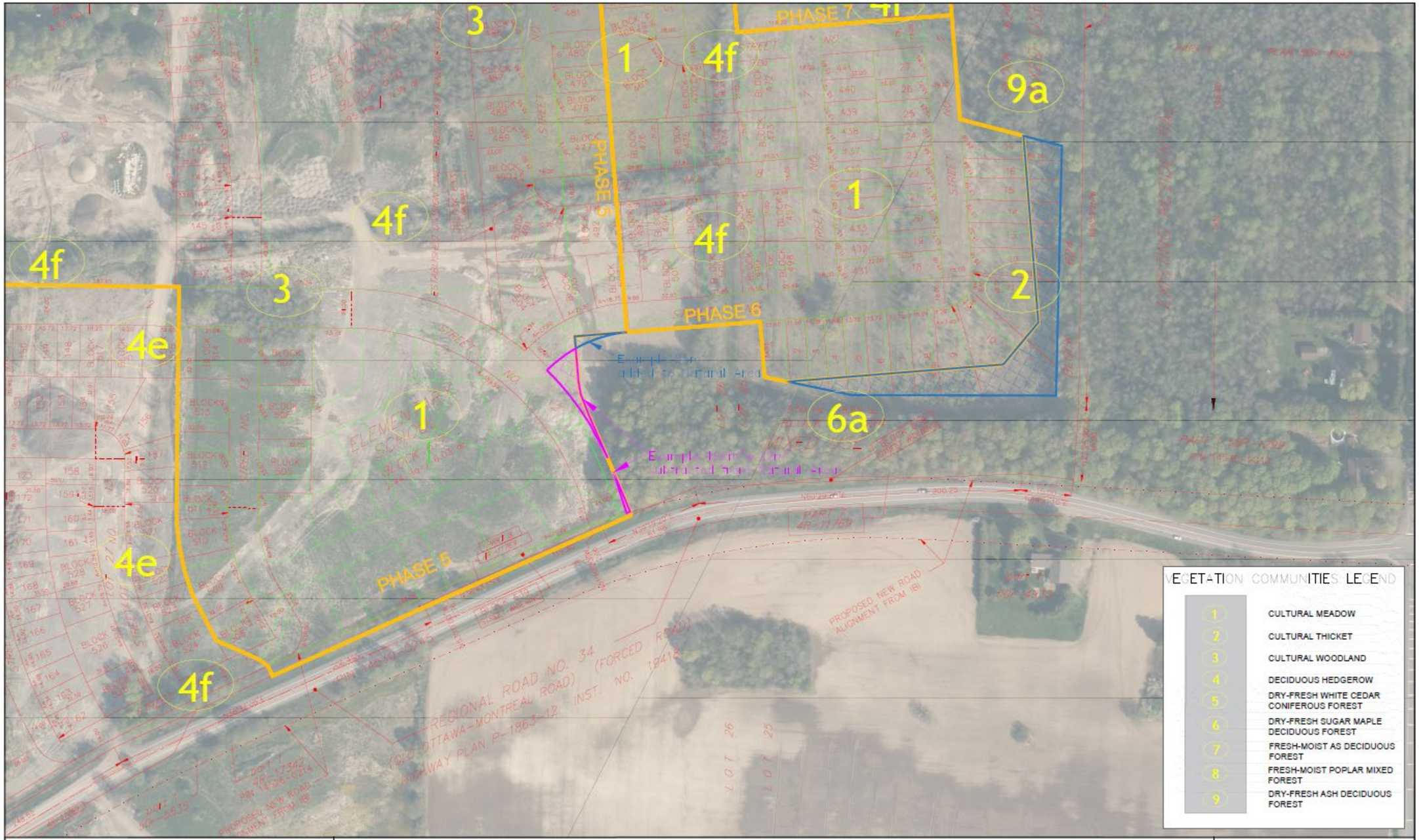


DSEL
david schaeffer engineering ltd
SMART SUBDIVISIONS™
120 Iber Road Unit 103
Stittsville, Ontario, K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

CURRENT CARDINAL CREEK VILLAGE PHASES 5/6/7
& ORIGINAL DEC 2013 DRAFT PLAN OVERLAY

PROJECT No. :	18-1019
SCALE:	1:1000
DATE:	AUGUST 2019
DRAWING No.	3

FIGURE 2 – PHASES 5 and 6 – SOUTH PORTION



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DRAWING No.	2

FIGURE 3 – TEMPORARY RELOCATION of NORTH TRIBUTARY