Muncaster
Environmental
Planning Inc.

November 25, 2013

2099116 Ontario Inc.
c\o Mr. Chris Collins
Planning and Land Management
Thomas Cavanagh Construction Ltd.
9094 Cavanagh Road
RR # 2
Ashton, Ontario
K0A 1B0

Dear Chris:

RE: 1240 Old Prescott Road, Greely
Tree Conservation Report and Environmental Impact Statement

This combined Tree Conservation Report (TCR) and Environmental Impact Statement (EIS) assesses a proposed 20 hectare Village development site in the Village of Greely.

Background and Project Description

The municipal address is 1240 Old Prescott Road (PIN 043190649) and the site is described as part of Lot 4, Concession IV, in the Geographic Township of Osgoode, now the City of Ottawa. The site is to the east of Old Prescott Road, north of Parkway Road and the Greely Industrial Park and south, west and east of existing Village residential developments. The Sunset Lakes Mutual Agreement Drain and a hydroelectric power transmission line traverse the west portion of the site in a northwest-southeast alignment, with an oil pipeline corridor further to the west. Forty-five Village residential lots are proposed for the 19.3 hectare subdivision with a typical lot size of 0.28 hectares (Map 2). A 1.75 hectare park block is proposed for the northwest portion of the site, with a dry pond stormwater management facility in the west portion of the park block. Each home will be serviced by an individual drilled drinking well and a septic sewage system. Access to the lots will be via an extension of West Beach Way connecting the current terminus north of the northwest corner of the site with Old Prescott Road at the current intersection with Aldergrove Way (Map 2). The site is currently dominated by deciduous forest, with some meadow habitat.

The site is designated *Village* on Schedule A of the City of Ottawa Official Plan, with a zoning of *Development Reserve* (DR1). The site is part of the Greely West Natural Area, identified as Area 17 in the Region of Ottawa-Carleton's Natural Environment System Strategy (Brownell and Larson, 1997). The Natural Area was broadly designated to have a high overall significance in the evaluation summary performed as part of the Region of Ottawa-Carleton's Natural

491 Buchanan Crescent, Ottawa, ON K1J 7V2
Tel (613) 748-3753, Fax (613) 748-6376

Environment System Strategy. The Greely West Natural Area is described by Brownell and Larson (1997) as primarily containing poplar and white birch upland forest on acidic sand with about 23% (approximately 80 hectares) of thicket swamp and poplar swamp forest present. The forests are young to intermediate-aged. Note that since the Natural Environment System Strategy was undertaken the land containing the Greely West Natural Area have been re-designated *Village* and the majority of the Natural Area between Old Prescott and Stage Coach Roads has been developed as Village residential. The west portion of the site, west of the hydroelectric power transmission line, is identified as part of the Natural Heritage System on Schedule L2 of the Official Plan. The site is identified as a medium, 'Level 2B' ecological constraint by TSH (2004) in the Shield's Creek Subwatershed Study. Level 2B lands are noted by TSH (2004) as areas of significant ecological function. Since the Subwatershed study was completed much of the surrounding lands have been developed as Village residential subdivisions.

There are no Areas of Natural and Scientific Interest in the general vicinity of the site. The closest evaluated wetland is a portion of the provincially significant North Osgoode Wetland Complex, approximately two kilometres southeast of the site.

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/development-application-review-process-0/environmental-impact-statement-guidelines 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 Section 4.7.8.2 a) through h) of the City of Ottawa Official Plan (City of Ottawa, 2010).

The major objective of this EIS is to determine the feature and functions of the on-site and adjacent natural environment conditions and to assess the anticipated impacts associated with the proposed Village residences on these features and functions. To attain this objective, the draft concept plan was reviewed and mitigation measures developed as required based on field observations of the features and functions of the natural environment.

The following items were identified for particular attention in this EIS, recognizing that many of these issues are interrelated:

- what are the terrestrial habitat features of the site and adjacent lands and the associated sensitivities?;
- is there any aquatic habitat potential on or adjacent to the site outside of the Sunset Lakes Mutual Agreement Drain and are suitable setbacks provided for from the Drain?
- what are the recommended areas of tree retention and other mitigation measures to ensure no unacceptable impacts on any significant natural heritage features? and,
- does the site support any other natural heritage features, including Species at Risk, that should be considered in development of the site?

Colour aerial photography (1976 - 2011) was used to assess the natural environment features in the general vicinity of the site. The natural environment features of the site and adjacent lands were reviewed on October 9th, 2012 and July 11th, 2013. The site conditions on October 9th were sunny skies, a light to moderate breeze and an air temperature of 14° C, with partly sunny skies, a light breeze and an air temperature of 24° C on July 11th.

The field survey and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over twenty-four 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 2099116 Ontario Inc. c\o Thomas Cavanagh Construction Limited (613-257-2918). It is proposed to remove the woody vegetation not to be retained in 2014 before the breeding bird season.

Existing Conditions

The site is relatively flat, with a very gentle slope to the southwest (Stantec, 2013). Paterson Group (2013) reported that the site is generally overlain by a thick layer of topsoil up to 0.45 metres. The topsoil layer was noted to have significant organic content but has an overall loamy texture and composition. This is generally reflective of the sand parent material underlying the organic layer (Paterson Group, 2013). The sand deposits include a transition zone of silty sand with a layer of medium to coarse sand below the silty sand. The sand is underlain by silty clay and compact to very dense silt and glacial till (Paterson Group, 2013). The overburden is extensive with at least 14 metres present (Paterson Group, 2013).

Paterson Group (2013) reported the groundwater levels at between 0.95 and 1.65 meters below ground surface. The overburden groundwater appears to be perched within the coarse sand layer present above the silty clay and silt strata (Paterson Group, 2013b). Analysis by Paterson Group (2013b) suggests the overburden groundwater flow is in a south to southwest direction beneath the site.

A snowmobile trail, with vegetation cleared for a five metre width (Photo 5), is along the south edge of the site east of the Sunset Lakes Mutual Agreement Drain and there is a small bridge over the channel.

The site is dominated by fresh-moist deciduous forests, with some dry-fresh deciduous forest, cultural meadows and a cultural woodlot (Map 1). The site was used for agriculture until the 1950s. There were no vegetation species of significance identified on the site. All of the vegetation species noted are considered common in Ontario.

<u>Fresh-Moist Poplar Deciduous Forest</u>

Trembling aspen was the dominant species in the upland poplar forest with green ash, eastern cottonwood, red maple, balsam poplar and white elm common in some areas and a minor representation of crack willow, white birch, sugar maple, black cherry, bur oak and Manitoba maple. Conifer representation was limited to a few intermediate-aged to mature white pine

(Photo 3) and white cedars less than 20cm diameter at breast height (dbh). The largest trees were aspen and eastern cottonwood up to 57cm dbh and a 70cm dbh white pine along the south verge of the site, but the vast majority of trees are less than 25cm dbh (Photo 1). Logging appears to have been common, especially for the non-poplar species and has had the effect of reducing the forest age to in the range of forty years. An exception is in the south portion of the site east of the Sunset Lakes Mutual Agreement Drain where mature Freeman maples up to 65cm dbh are present (Photo 4).

The understorey was dominated by the invasive glossy and common buckthorn (Photo 2). Red raspberry, chokecherry, prickly gooseberry, tartarian honeysuckle, red-osier dogwood, staghorn sumac, black currant, round-leaved dogwood and prickly ash were also in the understorey along with regenerating stems of poplar and basswood. The woodland forb vegetation reflected the disturbed nature of the land from past land use and included shinleaf, spiked lobelia, sensitive fern, ostrich fern, dwarf raspberry, common strawberry, white bedstraw, yellow violet and lady fern, common burdock, wild grape, Canada goldenrod, early goldenrod, Pennsylvania sedge, yellow avens, white avens, garlic mustard, St. John's wort, wild parsnip, panicled aster, calico aster, whorled aster and thicket creeper. Many of the latter non-native and/or invasive species have developed where the forest canopy is more open.

Fresh-Moist Poplar-Maple Deciduous Forest

The red maple component was greater in this community in the north-central portion of the site (Map 1, Photo 6). The red maples were up to 33cm dbh, with similar sized trembling aspen and black cherry. Smaller green ash and white elm were also present. Glossy buckthorn continued to be dominant in the understory, with highbush cranberry, red raspberry and black currant also present along with regenerating maple stems. Ground flora included sensitive fern, thicket creeper, wild grape, dwarf raspberry, enchanter's nightshade, shinleaf and royal fern. A high density of smaller buckthorn shoots was common.

Fresh-Moist Ash Deciduous Forest

Green ash was dominant in this community west of the Sunset Lakes Mutual Agreement Drain in the west portion of the site (Photo 7). Trembling aspen, balsam poplar, white elm, crack willow, red maple, Manitoba maple and Freeman maple were also present. The largest trees were mature crack willows and green ash up to 54cm dbh and Freeman maples up to 35cm dbh. A larger amount of natural deadfall added to the ecological functions of this community. Glossy buckthorn was again common in the understory, along with red raspberry, black currant and regenerating ash stems. The ground flora was a combination of native and non-native species including garlic mustard, yellow avens, Canada goldenrod, thicket creeper, enchanter's nightshade, white snakeroot, panicled aster, spotted jewelweed, evergreen wood fern, ostrich fern, sensitive fern and lady fern.

Dry-Fresh Ash-Poplar Deciduous Forest

In addition to the dominant green ash, trembling aspen, white elm, crack willow, red maple and bur oak were present (Photo 8). The largest trees were crack willow and white elm up to 53cm

and 34cm dbh, respectively. The understorey species included glossy buckthorn, highbush cranberry, prickly gooseberry, red raspberry and regenerating ash and bur oak. Again buckthorn was dominant in many areas, with the invasive garlic mustard dominating many areas of the ground flora. Other elements of the ground flora included yellow avens, Pennsylvania sedge, small white aster, tall goldenrod, thicket creeper, wild grape, common dandelion, herb robert, white bedstraw, white avens, common strawberry, calico aster and marginal wood fern.

The deciduous forests are impacted by wind throw, historical logging, invasive species and adjacent developments, which restrict the forest width to less than 200 metres. Many of the trees have vine growth or broken limbs.

Cultural Woodland

A cultural woodland is along the southeast edge of the site, adjacent to Old Prescott Road (Photo 9). Manitoba maple is dominant, with trembling aspen, green ash and white elm also present. The largest trees in the cultural woodland were Manitoba maple and green ash at 44cm and 32cm dbh, respectively. Staghorn sumac, common lilac, glossy buckthorn, common buckthorn, black currant, tartarian honeysuckle, grey dogwood and red raspberry were common shrub species. The ground flora in the cultural woodland included tall goldenrod, Canada goldenrod, wild grape, black swallowwort, common burdock, thicket creeper, white avens, yellow avens, garlic mustard, enchanter's nightshade, thimbleweed, daisy fleabane and motherwort.

Cultural Meadow

Former vegetable plots in the east portion of the site, west of old Prescott Road, are identified as a cultural meadow on Map 1 (Photo 10). Canada blue grass, brome grass, timothy, common dandelion, field mustard, common mullein, common cinquefoil, rough-fruited cinquefoil, goat's-beard, heal-all, butter-and-eggs, daisy fleabane, flowering dogbane, wormseed mustard,, hoary alyssum, field sow-thistle, red clover, common plantain, common tansy, Canada goldenrod, narrow-leafed goldenrod, common dandelion, black medic, bladder campion, yellow hawkweed, common yarrow, wild carrot, black-eyed susan, St. John's wort, motherwort, common mugwort and common burdock were common forb species in the meadow west of Old Prescott Road along with red raspberry and Bebb's willow shrubs and a 28cm dbh coppice Manitoba maple.

Cultural meadows were also present along the hydroelectric power transmission line and Sunset Lakes Mutual Agreement Drain corridor. Common vegetation included brome grass, butter-and-eggs, wild carrot, tufted vetch, reed canary grass, Canada goldenrod, common mugwort, wild parsnip and white bedstraw, along with slender willow, narrow-leaved meadowsweet, red raspberry and red-osier dogwood shrubs and regenerating poplar stems. Boneset, path rush, scouring rush, *Bidens* sp., hard-stemmed bulrush, fowl manna grass, reed canary grass and slender willow are representative vegetation in the channel of the Sunset Lakes Mutual Agreement Drain.

Wildlife observed during the field surveys included American crow, song sparrow, northern flicker, common yellowthroat, common grackle, gray catbird, American goldfinch, red-eyed vireo, great-crested flycatcher, American robin, northern cardinal, Swainson's thrush, black-capped chickadee, garter snake, raccoon, northern leopard frog, woodchuck, white-tailed deer and grey squirrel.

Aquatic Habitat

The Sunset Lakes Mutual Agreement Drain (Photo 11) conveys flow from the north, through the site and then to the south, joining the Osgoode Garden Municipal Drain downstream (south) of Parkway Road and flowing into Shields Creek south of Parkway Road. Shields Creek ultimately flows to the Nation River drainage system via Shields Creek and the North Castor River. The only other defined channel observed on the site was approximately 225 metres west of Old Prescott Road. This channel, in a north-south orientation, was dry during both site visits with woody vegetation established in the channel. The channel likely conveyed some flow until the Village residential developments were constructed to the north of the site. For example base mapping in TSH (2004) showed the channel flowing from a ponded area to the north that is now Village residential development.

TSH (2004) identified a twenty metre corridor width for the Sunset Lakes Mutual Agreement Drain on and adjacent to the site. The Drain and Shields Creek downstream of the site were identified as warmwater habitat on Figure 4.11.1 of TSH (2004) with a fair rating for the Index of Biotic Integrity for the downstream Shield's Creek.

There are few natural features associated with the Sunset Lakes Mutual Agreement Drain, which was created in the late 1990s. Stream cover is generally limited to grassed vegetation on both sides of the channel and the channel is straight with a ninety degree turn at the south end of the site before another ninety degree turn to flow through the Greely Industrial Park. No exposed coarse substrate was observed but aquatic plant growth was good in most areas. Algae and silt deposits were common.

The Sunset Lakes Mutual Agreement Drain would be considered fish habitat due to flow present for at least a portion of the year and defined streambanks. The fish habitat potential is severely limited due to

- the extensive channelization of the drain with no meandering;
- the lack of canopy cover and instream structure;
- large amounts of silt and algae;
- lack of a low flow channel; and,
- scarcity of exposed coarse substrate.

In addition a rock weir at the north end of the Greely Industrial Park was installed during construction of the Drain by the municipality to provide an on-line settling pond. The weir represents a barrier to fish movement. It appears that the primary role the on-site reach of this Drain performs with respect to fish habitat is contributions to downstream habitat.

Photo 1 – Fresh-moist poplar forest in the east portion of the site

Photo 2 – Typical buckthorn density in the fresh-moist poplar forest

Photo 3 – A few white pines are along the south-central edge of the site

Photo 4 - Larger maples in the southwest portion of the site just east of the Sunset Lakes Mutual Agreement Drain

Photo 5 – Snowmobile trail along the south edge of the site

Photo 6 – Fresh-moist poplar-maple forest in the north-central portion of the site

Photo 7 – Fresh-moist ash deciduous forest in the southwest portion of the site

Photo 8 – Dry-fresh ash-poplar forest in the northwest portion of the site

Photo 9 – Cultural woodland in the southeast corner of the site, just west of Old Prescott Road

Photo 10 – Former vegetable plots in the east portion of the site, west of Old Prescott Road. View looking west

Photo 11 – Sunset Lakes Mutual Agreement Drain in the west portion of the site. View looking northwest (upstream)

Species at Risk

No butternut or other Species at Risk were observed on or adjacent to the site. The three rare species identified in the site summary for the Greely West Natural Area by Brownell and Blaney (1997) that are still considered regionally significant are not anticipated to be on the site. Small green woodland orchid would be found in less disturbed forests, while tall cinquefoil is found in prairies and common woodrush is in wetter habitats.

The Ontario Ministry of Natural Resources' biodiversity explorer website was reviewed (http://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/main.jsp). 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 10 km square including the site and general area (18VR51). Fifteen species of interest were identified for the overall 10 km square, including one Species at Risk, Henslow's sparrow. This Endangered Species utilizes unmaintained tall weedy fields (Ehrlich et al., 1988). The on-site meadow habitats are vegetable plots and are too disturbed for this species. Meadow habitat along the utility corridor contains too much woody vegetation. The other potential species of interest are provincially rare and are predominantly found in aquatic and/or wetland habitats, including four dragonflies and damselflies (horned clubtail, forcipate emerald, azure bluet and green-striped darner), northern long sedge, American waterwort, mountain valerian, Greene's rush, lurking leskea, twin-stemmed bladderwort, southern twayblade and large purple fringed-orchid. The large purple fringed-orchid is found in wetter portions of deciduous forests where sugar maple and American

beech dominate, conditions not present on or adjacent to the site. Limestone oak fern is found on bluffs, talus slopes and cedar swamps. No pitch pine was observed on or adjacent to the site.

Four Species at Risk, whip-poor-will, barn swallow, eastern meadowlark and bobolink, are identified for the overall 10 km square including the study area in the Ontario Breeding Bird Atlas. Suitable habitat for these Threatened species was not observed in proximity to the site. Whip-poor-will requires large wooded areas with open patches, and/or open woodlands or alvar habitats. The understorey of the on-site forests is far too dense for whip-poor-will use and suitable open areas are not present. Eastern meadowlark and bobolink utilize larger grassland areas, with the cultural meadow west of Old Prescott Road used for vegetable plots and not suitable for nesting grassland birds. A shed is to the west of the vegetable plots. The shed is secure and there was no evidence of barn swallow activity or open rafters for potential nesting (Photo 12).

The potential Species at Risk reported for the overall City of Ottawa historically and their habitat requirements were also reviewed, including butternut, American ginseng, eastern prairie fringed-orchid, flooded jellyskin, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, eastern meadowlark, barn swallow, bobolink, whip-poor-will, bald eagle, golden eagle, least bittern, little brown myotis, northern long-eared bat, olive hickorynut, eastern cougar, common gray fox, lake sturgeon, cerulean warbler and American eel. The habitat requirements of these species along with those listed as special concern were reviewed. Except for butternut no specific habitat characteristics related to these potential Species at Risk were observed on or adjacent to the site. No cavity trees or older buildings that could provide bat habitat were noted. No butternut, an endangered Species at Risk but relatively common in portions of eastern Ontario, was observed on or adjacent to the site.

Photo 12 – Shed at west end of meadow habitat,
just east of the fresh-moist poplar forest in the east portion of the site

Greely West Natural Area

The on-site forests are part of the 347 hectare Greely West Natural Area, identified as Natural Area 17 in the former Region of Ottawa-Carleton's Natural Environment System Strategy (Brownell and Blaney, 1997). This Natural Area was rated high overall, with three of the nine evaluation criteria, rare vegetation community, endangered, threatened and rare species, and vegetation community/landform and species diversity, scored as high. Moderate significance was applied to two criteria, landscape attributes and hydrological features, while no score was available for common vegetation community/landform, seasonal wildlife concentrations and condition of natural area. However many portions of the Natural Area in the vicinity of the site has been extensively impacted since the Natural Environment System Strategy was completed, with extensive village residential developments and associated large ponds, roads and other servicing off Suncrest Drive, Pebble Trail Way, Tintern Drive, Rousseau Crescent, South Village Drive, South Beach Boulevard, West Beach Way and Woodstream Drive.

The rare vegetation community/landform representations identified by Brownell and Blaney (1997) were not observed on or adjacent to the site. No forest interior habitat is present adjacent to the site as the forests are less than 200 metres in width. No stick nests were observed on or adjacent to the site. Brownell and Blaney (1997) noted that the Greely West Natural Area has a relatively low interior size relative to its total size since it is irregular in shape. The summary by Brownell and Blaney (1997) stated that the Natural Area contains primarily young to intermediate aged forest.

Brownell and Blaney (1997) noted that there are no large-scale linkages or corridors associated with the Greely West Natural Area. Extensive village residential developments, light industrial activity and busy roads such as Parkway, Stage Coach and Old Prescott impact potential linkages in the vicinity of the site.

Impact Analysis and Recommendations

No natural heritage features, as identified in the Provincial Policy Statement and OMNR (2010), were observed on or adjacent to the site outside of the fish habitat in the Sunset Lakes Mutual Agreement Drain. The habitats not observed are significant wetlands, the significant portions of the habitat of endangered and threatened species, significant woodlands, significant Areas of Natural and Scientific Interest, significant valleylands and significant wildlife habitat. The forests are too young and narrow to be considered significant. There will be no impacts on the special features, such as rare flora and fauna, attributable to the Greely West Natural Area as none of these features are on or adjacent to the site.

Terrestrial Habitat

The on-site forests are highly disturbed by non-native vegetation and logging and are dominated by generally non-desirable poplar and ash species. Regardless, as shown on Map 2, areas of potential tree and shrub retention are available towards the rear of the Village lots, especially at the rear of the larger lots in the west portion of the site. This tree retention will provide wildlife and aesthetic value as well as a future source of seeds and regenerating stems. These areas of tree retention will include the better maple representation in Lot 22 and the north portions of Lots 32 – 35. White pines at the rear of Lots 11 and 13 are included in the proposed tree retention areas as are black cherries in the north portion of Lot 34 and the south portion of Lots 8 and 9. To maximize tree and shrub retention on Lot 1 the building footprint should be in the north portion of the lot.

Although a grading plan has not been finalized it is anticipated that significant grade changes will be required in the east portion of the site to provide positive drainage to the stormwater management facility to the west. Thus the extent of tree retention, as shown on Map 2, is much less in the east portion. As outlined in Stantec (2013) infiltration trenches sized to store and infiltrate up to the 100 year storm from rear yard areas will be installed along the rear yards, thus impacting tree retention at the very rear of the lots. However an existing snowmobile trail will be used for the infiltration trenches at the rear of Lots 4 – 22. Swales required along the sides of the lots will also reduce tree retention, as shown on Map 2. The streets and front yards will be drained by road side ditches, which will lead either to the Sunset Lakes Mutual Agreement Drain or a dry pond stormwater management facility in the west portion of the park block (Stantec, 2013).

Wherever possible tree and shrub retention should be maximized and as each lot is developed considerations should be given to increasing the extent of preserved vegetation at the rear and sides of the lots.

The only remaining treed area adjacent to the site is the area south of Lot 25. Except for installation of the infiltration trench no other site disturbances including tree and shrub removal will occur in the south portion of Lot 25 as shown on Map 2. To assist in preventing potential indirect impacts associated with light regime and wind on the edge of the deciduous forest to the south, the width of disturbance needed for the infiltration trench is to be as narrow as possible.

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 canopy of the retained trees to the south.

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.

To protect breeding birds, the tree or shrub removal should occur between April 15th and July 31st, unless a breeding bird survey conducted 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 on the site was observed.

There are no specific sensitivities for plantings on the site. Tree and shrub plantings are to be native and of local origin and seed stock. A mix of coniferous and deciduous species such as sugar maple, red maple, tamarack, white spruce, white pine, red oak, bur oak, basswood, striped maple, native dogwoods and nannyberry is recommended where plantings are required such as in the east meadows.

Aquatic Habitat

The aquatic habitat in the Sunset Lakes Mutual Agreement Drain will be protected within the hydroelectric transmission line corridor on the west side and a distance in the range of fifteen metres from the top of slope to the closest structure on the east side in Lot 22. Block 47, a park, is on the east side of the Sunset Lakes Mutual Agreement Drain in the north half of the site. The flat topography and sandy soils provide good treatment conditions for the local surface runoff and following TSH (2004), the low sensitivity of the Drain, the ecological conditions of the

buffer and the development to the north, a setback of ten metres from the top of slope is considered sufficient to provide the necessary environmental protection.

Paterson Group (2013) concluded that Best Management Practices (BMPs) for promoting infiltration are applicable for the site. These BMPs are described by Stantec (2013) and will include infiltration trenches, shallow grade swales complete with perforated sub-drains and shallow grade road side ditches complete with perforated sub-drains. The water budget calculated by Stantec (2013) concluded that the BMPs will be effective in accomplishing a post-development to pre-development water balance. As required by TSH (2004), "normal" water quality control, which corresponds to 70 percent total suspended sediment removal, will be provided on the site through grassed swales and ditches combined with infiltration trenches that will be sized for the 25 mm storm along the road side ditches and for the 100 year storm along the rear yards (Stantec, 2013).

Given the implementation of proper stormwater management, including a balanced water budget, and erosion and sediment control, other than one culvert described below, no impacts on the aquatic habitat of the Sunset Lakes Mutual Agreement Drain or downstream habitat, including Shield's Creek, is anticipated. One road crossing of the Drain is required. The culvert will be sized during the detailed design but is to be embedded at least ten percent to ensure no blockages to potential fish movement. The culvert is to be installed in the dry if possible, and outside of the more sensitive March 15th to July 30th period. Any fish stranded in the culvert work area are to be safely relocated downstream. The upstream and downstream sections of the Drain closest to the culvert will be protected with rock protection however it is very important that this rock protection be carefully placed so a low flow channel remains in the centre of the channel for fish passage.

The potential for thermal and other impacts on the aquatic habitat of Shields Creek is notably reduced by the disturbed landscape that the Drain flows through before entering Shields Creek. After leaving the site, the channel flows through the Greely Industrial Park. Through the Industrial Park, the Drain is completely channelized, as it is on the site, and canopy cover is lacking in most reaches of the Drain. Downstream at Parkway Road the Drain is conveyed as a roadside ditch and then flows through an agricultural field with no stream cover before flowing into Shields Creek.

Other Mitigation Measures

The extent of exposed soils shall be kept to a minimum at all times. Re-vegetation of exposed, non-developed areas shall 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 site is not degraded with respect to water quantity or quality. Erosion and sediment control will focus on best management practices such as grassed swales with a reduced slope and direction of roof and rear yard runoff to the vegetated rear of the lots.

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

- Where groundwater must be removed from work areas, the groundwater will be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to release to the environment;
- 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;
- Silt fencing is also required along work areas where any surface water runoff has the potential to flow towards the Sunset Lakes Mutual Agreement Drain. The fencing must be properly keyed in to filter runoff and maintained as required including repair of broken panels and removal of accumulated sediment;
- 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,
- Waste will be managed in accordance with provincial regulations. The contractor will have a spill kit on-hand at all times in case of spills or other accidents.

Schedule of Proposed Works

It is proposed to remove the on-site woody vegetation not to be retained in 2014, before 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 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.

There are no significant natural heritage features on or adjacent to the site outside of the fish habitat within the Sunset Lakes Mutual Agreement Drain, which will be retained in its existing corridor and alignment. The site is last portion of the Village of Greely to be developed in the general area and is surrounding by existing Village residential developments and the existing Greely Industrial Park to the south. With proper implementation of the mitigation measures described in this report it is anticipated that the construction and operation of the Village residential subdivision will not increase the potential for cumulative effects in the general landscape.

Conclusion

Forty-five Village residential lots are proposed for the subdivision with a typical lot size of 0.28 hectares. The majority of the site is intermediate-aged deciduous forests which are impacted by wind throw, historical logging, invasive species and adjacent developments, which restrict the

forest width to less than 200 metres. The Village lots will permit tree retention in the rear portion of the residential lots. The low sensitivity Sunset Lakes Mutual Agreement Drain will be retained in its current alignment and will be protected with a no-touch minimum setback of ten-metres from the east top-of-slope. The hydroelectric corridor is along the west top-of-slope and no additional development is proposed for this corridor.

No significant woodlands, rare communities, flora or fauna, Species at Risk, significant wetlands, steep slopes or valleys were observed on or adjacent to the site. The site is part of the Greely West Natural Area however the Natural Area has been severely impacted by village residential subdivisions and other developments surrounding the site. Undeveloped areas adjacent to the site are limited to the southwest corner and this adjacent forest will be protected with the tree retention in the south portion of Lot 25.

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

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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

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2011 air photo from City of Ottawa website

Legend

- Site
- Vegetation communities
- Greely West Natural Area

Vegetation Communities

1. Cultural meadow
2. Cultural woodlot
3. Fresh-moist poplar deciduous forest
4. Fresh-moist poplar-maple deciduous forest
5. Fresh-moist ash deciduous forest
6. Dry-fresh ash-poplar deciduous forest

Approx. Scale 1:4,600

0 50 100 150 200
METRES

Map 1	FILE: 13-02	July 11, 2013

Prepared for: 2099116 Ontario Inc.

Prepared by: Muncaster Environmental Planning Inc.

CURRENT VEGETATION

1240 OLD PRESCOTT ROAD, GREELY
City of Ottawa

2011 air photo from City of Ottawa website

Legend

- Site
- Vegetation communities
- Greely West Natural Area
- Belts of Woody Vegetation to be Retained

Vegetation Communities

1. Cultural meadow
2. Cultural woodlot
3. Fresh-moist poplar deciduous forest
4. Fresh-moist poplar-maple deciduous forest
5. Fresh-moist ash deciduous forest
6. Dry-fresh ash-poplar deciduous forest

Approx. Scale 1:4,600

0 50 100 150 200
METRES

Map 2	FILE: 13-02	July 11, 2013

Prepared for: 2099116 Ontario Inc.

Prepared by: Muncaster Environmental Planning Inc.

PROPOSED CONSERVED VEGETATION

1240 OLD PRESCOTT ROAD, GREELY
City of Ottawa