Muncaster Environmental Planning Inc.

November 11, 2025

Mr. Kyle MacHutchon
Inverness Homes
200-38 Auriga Drive
Nepean, ON
K2E 8A5

Dear Mr. MacHutchon:

RE: 391 Hilversum Lane, Carp
Environmental Impact Study

This Environmental Impact Study (EIS) assesses a proposed residential apartment development in the centre of the Village of Carp. The current site is within a draft approved subdivision on the east side of the newly constructed Hilversum Lane, extending west from Langstaff Drive. The approximately 0.31 hectare current site was historically dominated by agricultural fields, with a treed ravine to the east of the current site. More recently the current site was used for surface parking and then the topsoil was removed early in 2025 before the bird nesting season. For the purposes of this report Hilversum Lane in the vicinity of the current site is considered to be in a north-south orientation.

Proposed Apartment Development

The 39 unit, three-storey apartment building will have underground and above ground parking spaces, including surface visitor parking and bicycle parking (Figure 1). Access to the apartment building will be off the cul-de-sac at the end of Hilversum Lane. The apartment will be on full municipal services. A single storey clubhouse is proposed to the south of the apartment building. Stormwater runoff from the proposed development will be collected and conveyed via an on-site storm sewer system (minor system) to the central ravine, which is an existing stormwater management facility. The existing ravine stormwater management facility was designed to provide quantity control and detention of stormwater runoff for the 35.9 hectare tributary drainage area. For larger storm events, the stormwater runoff from the proposed development will be conveyed to the existing ravine stormwater management facility via the major overland flow route (major system). Quality control of stormwater runoff will be provided by multiple stormwater treatment units installed in-line with the minor storm sewer system.

Methodology

As there are no remaining trees at least 10 centimeters in diameter on the current site and there are no adjacent trees with critical root zones extending onto the development portion of the current site, a Tree Conservation Report component is not included in this report. This report provides mitigation measures to protect the ravine trees which are to the east of the site, east of a

multi-use pathway to be constructed. There are no co-owned or City-owned trees in the vicinity of the current apartment site.

This EIS was prepared in accordance with the City of Ottawa EIS Guidelines, with guidance from the Natural Heritage Reference Manual (OMNR, 2010). The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over thirty-seven years of experience completing natural environment assessments. In addition, Shaun St. Pierre completed butternut heath assessments on and adjacent to the overall site.

The EIS will provide the methodology to mitigate as required negative impacts on significant features and functions. Potential Species at Risk in the general area were identified from Ministry of Natural Resources and Forestry databases, the Ontario Breeding Bird Atlas, the Ontario Reptile and Amphibian Atlas, Species at Risk reported for the overall City of Ottawa, and our work on several projects in this portion of Ottawa.

Initial field surveys of the overall site and adjacent lands was completed outside of the growing season on October 24th, 2008 and April 24th, 2019 from 11:00 to 13:45. Weather conditions included a moderate breeze, cloudy skies, and an air temperature of 6° C. Also in 2019, field surveys were completed on June 8th, 20th and 27th, 2019, between 06:05 and 09:45. Weather conditions included calm winds or a light breeze, sunny and overcast skies, and air temperatures between 16 and 20° C. In addition to a review of the vegetation and wildlife on and adjacent to the site, two point counts were completed for potential grassland Species at Risk (bobolink and eastern meadowlark) in the cultural meadow habitat, which included the current site. These surveys followed the MNRF sampling protocol including timing the surveys at least one week apart and completing the point counts before 09:00 under good weather conditions with minimal wind and no precipitation. A follow-up survey of the current site and adjacent lands, including the ravine to the east, was completed on September 9th, 2025 from 09:15 to 11:45 under good weather conditions with mostly sunny skies, a light breeze, and an air temperature of 19° C.

Environmental Features

The general area is dominated by residences and other developed features of the Village of Carp, including the Carp Fairgrounds to the north and the Huntley Centennial Public School to the east of Langstaff Drive. The closest lands zoned Environmental Protection are approximately 700 metres to the east of the overall site along the west edge of the Carp Hill Natural Area, with the closest Open Space zoned lands a mostly forested area about 400 metes to the northwest of the site, west of Carp Road. The Carp Hills are also the closest lands designated Natural Environment Area and contain the closest Provincially Significant Wetlands and Areas of Natural and Scientific Interest to site. As with the almost all of the lands within Carp Village, the site and adjacent lands are part of a Wellhead Protection Area on Schedule C15 of the Official Plan, with the higher vulnerability scores assigned. The ravine includes a tributary of the Carp River, which is also shown on Schedule C15. There are no portions of the City's Natural Heritage System, as shown on Schedule C11-A on or adjacent to the current site and no Greenspace is shown on Schedule B9. There are no unevaluated wetlands, as shown on geoOttawa, on or adjacent to the overall site.

No areas of rare vegetation, Areas of Natural and Scientific Interest, wetlands, woodlands greater than 50 years of age, or forest interior habitat were identified on or adjacent to the overall site in the Carp River Watershed/Subwatershed Study (CRWSS) (Robinson, 2004). The adjacent tributaries were considered 'disturbed/alerted' in the CRWSS and fish community types were not identified for these channels. The streamside environment was also considered degraded. No high or moderate recharge areas were identified in the vicinity of the site in the CRWSS.

Existing Conditions

The topography of the current site is generally level, with a gentle slope to the southwest. The central ravine to the east of the current site is between three to five metres deep (Paterson, 2019). The native soils were mapped by Schut and Wilson (1987) as imperfectly-drained silty loams and well drained sandy loams, with the ravine noted as an eroded gully. Paterson (2019) described the surficial geology as topsoil overlying a thin, compact silty sand layer and/or very stiff to stiff brown silty clay crust, which in turn is underlain by a stiff to firm grey silty clay deposit. These layers are followed by a very dense to very loose grey silty sand underlain by an inferred glacial till deposit. Practical refusal was encountered by Paterson (2019) at depths ranging from 18.9 to 24.9 metres below ground surface.

Groundwater was observed by Paterson (2019) in depths between 2.1 and 7.0 metres below the ground surface. The long-term groundwater level at the overall site was expected by Paterson (2019) to range from approximately 4.5 to 5.5 metres below ground surface. Paterson (2019) concluded that groundwater at the site will generally flow laterally through the silty sand and glacial till towards topographically low areas, such as the ravines adjacent to the site. As such, Paterson (2019) interpreted that the topographical and geological conditions are suitable for low to moderate discharge to be occurring at the overall site.

The vegetation and topsoil have been removed from the current site (Photo 1), which was dominated by frequently cut cultural meadow on former agricultural lands. Trees remain in the central ravine containing the Carp River tributary to the east of the current site. Ground flora has begun to regenerate on stockpiles of topsoil along the east edge of the current site (Photo 3). Common ground flora includes Canada thistle, orchard grass, timothy, barnyard grass, common mullein, common milkweed, wild parsnip, red clover, white-sweet clover, common burdock, wormseed mustard, tufted vetch, lamb's quarter, lady's thumb, sheep sorrel, common mugwort, common plantain, and Canada goldenrod.

The largest tree noted in the adjacent ravine is a mature bur oak (approx. 120cm diameter at breast height (dbh)) in the lower portion of the ravine slope, with mature basswood, white elm, sugar maple, red maple, and crack willow also in the ravine (Photos 6 and 7). Some of the older trees appeared to be entering senescence and natural deadfall was present but many of the larger ravine trees appeared to be in good condition. Smaller white cedar, white spruce, Manitoba maple, sugar maple, black cherry, trembling aspen, basswood, and apple were also in the ravine. The largest trees along the edge of the ravine forest were basswood and Manitoba maple up to 30cm dbh (Photo 2). These trees are a minimum of six metes east of the centerline of a multi-use pathway to be constructed between the apartment building and the adjacent ravine The mature bur oak described above will be approximately 21 meters from the centerline of the pathway.

Common buckthorn and glossy buckthorn shrubs are abundant among the trees in the ravine, with hawthorn, chokecherry, red raspberry, Tartarian honeysuckle, gray dogwood, and red-osier dogwood also observed. Regenerating stems in the understory included green ash, white elm, Manitoba maple, bur oak, and basswood. The ground flora in the upland deciduous forest along the ravine was generally reflective of disturbed conditions including Canada goldenrod, dame's rocket, corn gromwell, reed canary grass, June meadow grass, blue violet, common burdock, thicket creeper, common milkweed, ox-eye daisy, cow vetch, white bedstraw, common strawberry, field horsetail, wormseed mustard, common dandelion, bittersweet nightshade, wild parsnip, tall buttercup with Virginia waterleaf, joe-pye-weed, blue cohosh, spotted jewelweed, and bloodroot also present.

Flowing water was observed during the 2019 surveys in the channel at the base of the central ravine (Photo 4), with the channel dry in September, 2025 after a very dry August (Photo 5). The potential fish habitat in the channel is greatly limited by the lack of an open connection with the Carp River to the south, the use of the upper portion of the central ravine as a stormwater management feature, and two long 60cm csp culverts within the central ravine channel. The downstream ends of these culverts are perched, with a 40cm step noted on June 20th, 2019. Thus, fish movement through these culverts does not appear possible. The exposed substrate included hard pack clay with some rock protection in association with the culverts providing coarser material. Geo Morphix (2022) noted that the channel banks were composed of clay, silt and sand, and the average bankfull channel width for the channel in the central ravine was estimated at approximately 3.0 metres. Signs of erosion were noted by Paterson (2022) along the lower portion of the slope face that confines the channel in the central ravine. Some minor sloughing failures were also noted by Paterson (2022) in the lower portion of the slope, leaving some exposed tree roots. No evidence of active erosion was noted along the toe of slope.

The general characteristics of the central ravines are discussed by Geo Morphix (2022) who considered the adjacent channels to be confined systems.

Wildlife observed on the overall site for all of the surveys included grey squirrel, red squirrel, eastern chipmunk, American crow, red-winged blackbird (agitated), common grackle, European starling, northern flicker, yellow-bellied sapsucker, black-capped chickadee, blue jay, great-crested flycatcher, tree swallow, American robin, red-eyed vireo, ovenbird, yellow warbler, common yellowthroat, song sparrow, chipping sparrow, American goldfinch, Baltimore oriole, white-breasted nuthatch, blue jay, mourning dove, Canada goose, and ring-billed gull. Two chimney swifts were observed on the mornings of June 8th and June 20th, 2019 flying to the south of the site. Woodpecker cavities were observed in a couple of large snags within the ravine and a few of the mature deciduous trees in the ravines contained larger cavities which may be used by other wildlife. No potential wildlife cavity trees were noted on the lands proposed for development in the overall site and no trees are present on the current site. No evidence of birds or other wildlife activity was observed in the bare portions of the topsoil piles along the east edge of the current site.

Photo 1 – Current condition of the site.
View looking east from Hilversum Lane, with ravine forest edge in the background

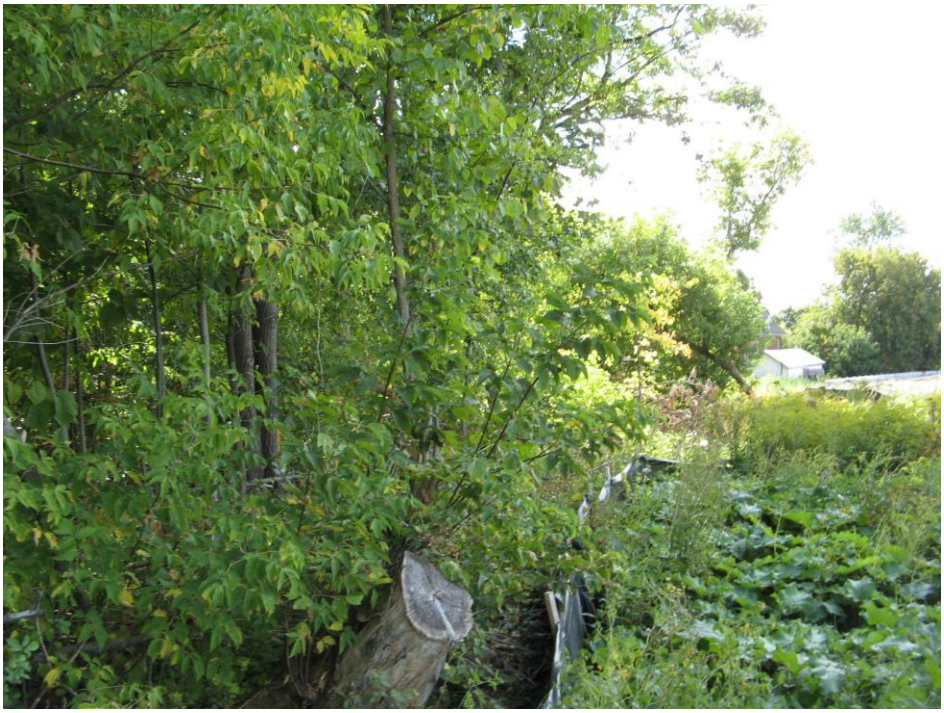


Photo 2 – Silt fencing along the forest edge to the east of the site clearing activity.
View looking south

Photo 3 – Regenerating ground vegetation on portions of the topsoil stockpiles along the east edge of the current site. View looking northeast to outer ravine trees

Photo 4 – Channel with flowing water on June 20th in the adjacent ravine. View looking northwest

Photo 5 – Channel was dry on September 9th, 2025 after a very dry August. View looking north

Photo 6 – Mature sugar maple in the central ravine. View looking west

Photo 7 – Central ravine is generally well covered with deciduous trees. View looking northwest

Species at Risk and Other Species of Special Interest

On September 8th, 2025, the Ministry of the Natural Resources and Forestry's Make a Map: Natural Heritage Areas website was again reviewed. 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 current site and adjacent lands (18VR12-81 and -91). Seven Species at Risk were identified for these 1 km squares: bobolink, eastern meadowlark, chimney swift, least bittern, red-headed woodpecker, butternut, and Blanding's turtle. Several species of special concern were also noted: snapping turtle, wood thrush, eastern wood pewee, and eastern whip-poor-will. Blanding's turtle, snapping turtle, Midland painted turtle, and northern map turtle, another species of special concern, were recorded for the overall 10 km square 18VR12 in the Ontario Reptile and Amphibian Atlas. These turtle species are known from the Carp River corridor to the southeast of the site and the Carp Hills to the east. Although there is a tributary of the Carp River to the east of the current site, the flow within the tributary enters the Village infrastructure approximately 25 metres north of Donald B. Munro Drive, south of the site. No open channel or contiguous natural corridor were observed for the last 180 metres northeast of the Carp River. Thus, there appears to be no reasonable potential for turtles to move from the Carp River corridor northeast to the site. However, a Blanding's turtle hatchling was reported just south of the overall site, with a report also in the school yard east of Langstaff Drive. Thus, the ravine corridor may be used as a travel corridor. No suitable wetland habitat for turtles, black ash, or least bittern was observed on the current site.

Chimney swifts use open brick chimneys and historically tree cavities for nesting. No potential structures are present on the site for chimney swift or barn swallow nesting. However, chimney swifts are known to nest in the older buildings on the south side of Donald B. Munro Drive to the south of the overall site and were observed during two of the June, 2019 surveys flying overhead to the south of the site. Bobolink, grasshopper sparrow, and eastern meadowlark utilize larger grasslands such as hayfields for nesting. The on-site meadow habitat originally appeared sufficiently large and open for nesting by these grassland species and thus three early morning field surveys were completed in June, 2019. No bobolink, grasshopper sparrow, or eastern meadowlark were observed during these targeted surveys or during the other surveys. Wood thrush and eastern wood pewee are usually found in forests with interior habitat. Forest interior habitat is not present on the overall site and these birds were not observed during the field surveys.

Species at Risk reported in the Breeding Bird Atlas for the 10 km square 18VR12 are bobolink, eastern meadowlark, bank swallow, and chimney swift. In addition to the species discussed above barn swallow nests on structures with open rafters such as barns, larger agricultural sheds and bridges, while bank swallow is a colonial nester; burrowing in eroding silt or sand banks and sand pit walls. No suitable nesting structures for barn swallow were observed on or adjacent to the current site and there was no evidence of birds or other wildlife activity observed in the bare portions of the topsoil piles along the east edge of the current site.

No aquatic Species at Risk are reported for this portion of the Carp River watershed in the database maintained by the Department of Fisheries and Oceans (http://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html).

Many endangered and threatened species have historically been reported in the overall City, including butternut, black ash, American ginseng, eastern prairie fringed-orchid, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, nine-spotted lady beetle, Suckley's cuckoo bumble bee, Hudsonian godwit, lesser yellowlegs, red-headed woodpecker, short-eared owl, eastern red bat, hoary bat, silver-haired bat, little brown myotis, northern long-eared bat, olive hickorynut, bald eagle, golden eagle, cerulean warbler, least bittern, eastern cougar, lake sturgeon, and American eel. Except for butternut, no specific habitat characteristics related to these potential Species at Risk were observed on the current site. The habitat requirements of these species along with those listed as special concern were reviewed. Some of the decomposing tree snags present near the base of the central ravine contained cavities but these cavities appeared too open to be used as potential summer maternal bat colonies.

In addition to bobolink and eastern meadowlark, butternut has the potential to be on and adjacent to the overall site and seventeen butternuts were assessed on the overall site on June 20th, 2019 by Shaun St. Pierre (Figure 2). Fourteen of the 17 butternuts were assessed as healthy but the majority were very young with 10 of the 14 butternuts assessed as Category 2 trees 4cm dbh or less. Two other healthy butternuts (20cm and 31cm dbh) along the west edge of the overall site were originally assessed as Category 3 trees. These trees were reassessed in June, 2021 and the original Category 3 tree to the north (butternut # 5) was assessed as a Category 1 tree, with butternut # 7 remaining a Category 3 tree (see red dot on Figure 2). The other Category 2

butternuts were 6cm and 10cm dbh. As the 30 day Ministry review period of the butternut health assessment has passed, the unhealthy butternuts (Category 1) were removed where required outside of the nesting bird period. In addition, a Confirmation of Registration was received from the Ministry on January 6th, 2022 for the removal of the Category 3 butternut and removal of five Category 2 butternuts (#10 (1cm dbh), # 11 (4cm dbh), # 12 (1cm dbh), # 13 (2cm dbh), and # 17 (2cm dbh), with two other healthy butternuts to be harmed. The removal and harm of these healthy butternuts will be compensated for with archiving of one Category 3 butternut and plantings of pure butternut seedlings. These activities have been provided off-site by third-party suppliers, including the Rideau Vally Conservation Foundation. A draft permit for the removal and potential impacts on healthy butternuts was obtained from MECP in December, 2021. Due to concurrent changes in the quantities of butternut eligible for the on-line registry, this process was used and a Confirmation of Registration was received from MECP, also in December, 2021.

Suitable Blanding's turtle habitat is considered along the Carp River Tributary in the central ravine. There is no wetland habitat adjacent to the channel and thus the setback for protection of the suitable turtle habitat extends 30 metres from the channel bank, which is also considered the normal high water mark. The limit of site disturbance has been slightly modified to ensure the only activity within the 30 metre setback will be pathway construction and operation, operation of the stormwater management facility and slight regrading to match the existing grade on the development side of the pathway. Mitigation measures are presented below to protect any turtle utilization of the site. The MECP review of the Information Gathering Form concluded that an Overall Benefit Authorization under the Endangered Species Act would not be required for Blanding's turtle.

Significant Woodlands and Valleylands

As the site is in the rural portion of the City of Ottawa, the significance of woodlands is evaluated using the criteria in the Natural Heritage Reference Manual (OMNR, 2010). The forest to the east of the current site and small contiguous forested areas extending to the south are too small at just over one hectare, to be considered significant. No interior forest habitat is present and no other attributes of the forest were observed for which the forest would be considered significant woodlands.

However, the ravine would likely be considered significant valleylands based on the well-treed slopes, significant slopes of the valley, valley widths greater than 25 metres and lengths greater than 50 metres, and presence of flow in the Carp River tributary.

Significant Wildlife Habitat

The potential for significant wildlife habitat is 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.

As there is no forest interior habitat on the overall site, eastern wood pewee and wood thrush, both Species of Special Concern, are not anticipated to be on the overall site and were not heard

during the June surveys. The on-site habitat is too disturbed with minimal early successional habitat to be used by Species of Conservation Concern indicators (MNRF, 2015) such as brown thrasher, clay-coloured sparrow, field sparrow, eastern towhee, upland sandpiper, or grasshopper sparrow.
No evidence of animal movement corridors, such as those for deer or amphibians, were noted.

Other field observations would not trigger a significant wildlife habitat designation with respect to the ELC communities present. For example, the cultural habitats do not support waterfowl stopover or staging areas, colonial nesting bird breeding habitat or other examples of seasonal concentration areas. No rare vegetation communities or rare or specialized habitats as described in MNRF (2015) were observed. No wetlands with the potential to support amphibians were observed on or adjacent the overall site. No seeps or springs, potential bat hibernacula or maternity colonies, or suitable turtle nesting or wintering areas were noted. Stone piles and areas of broken and fissured rock for potential use by snakes, including potential reptile hibernaculum, were not observed nor was evidence of winter raptor utilization. Some of the decomposing tree snags present near the base of the central ravine contained cavities but these cavities appeared too open to be useful as wildlife cavities, including for potential summer maternal bat colonies. Regardless these trees will be retained and no trees with potential wildlife cavity will be removed.

The lack of nearby natural areas and associated many industrial and commercial operations along the Carp Road and Donald B Munro Drive corridors, and the residences and institutional activities along Langstaff Drive prohibit any significant wildlife linkage functions for the overall site and adjacent general area.

Impact Assessment and Mitigation Measures

The significant valleylands and potential local residence forage fish habitat of the adjacent central ravine, and the presence of healthy butternuts, an endangered Species at Risk and potential Blanding's turtle habitat, a threatened Species at Risk, are the natural heritage features, as defined in the Provincial Planning Statement and City of Ottawa Official Plan, identified for lands adjacent to the current site. Outside of the adjacent central ravine, the tablelands portion of the current site was historically used for agriculture and is currently disturbed with the topsoil stripped and stockpiled along the east edge of the site. Manitoba maples and other small deciduous trees including basswood and white elm extending onto the tablelands in the vicinity of the current site have been removed outside of the bird nesting period.

The potential aquatic habitat associated with the Carp River tributary in the central ravine is highly impacted by a lack of a connection with the Carp River to the southwest, perched culverts in the channel to the east of the current site, and existing stormwater management functions associated with the ravine. Paterson (2022) identifies a construction setback which is the limit of hazard lands, as shown by a dashed blue line on Figure 1. The limit of hazard lands for the central ravine includes toe erosion (two to six metres) and access allowances (six metres) and is in total eight to twelve metres from the top of slope (Paterson, 2022). The setbacks from the central ravine will exceed the limit of hazard lands and, save for the pathways, will be at least 15

metres from the top of valley slope. The 15 metre setback from the top-of-slope, shown as a dashed green line on Figure 1 is considered suitable as:

- The potential aquatic habitat associated with the Carp River tributary in the central ravine is of low sensitivity as it is highly impacted by a lack of a connection with the Carp River to the southwest, perched culverts to the east of the current site, and existing stormwater management functions associated with the ravine;
- The 15 metre setback is greater than the 8 – 12 metre identified limit of hazard lands;
- The tablelands associated with the 15 metre setback were mowed cultural meadows with no notable ecological features or functions. Increasing the setback greater than 15 metres will not add significantly to the features and functions of the retained lands;
- Given the location of the mature trees further down the slope and smaller trees along the top of the ravine slope, the critical root zones of the outer ravine trees will not extend more than four metres onto the tablelands and the pathway will be between the outer trees and the apartment building. The 15 metre setback will be relatively flat and adjacent to the pathways the vegetation will be allowed to naturalize and trees will be planted to provide additional protection for the ravine features including the tributary habitat; and
- There is no regulatory floodplain associated with the ravine tributary.

Overall, the setback will provide more than adequate protection for the features and functions of the valleylands, including the mature trees along the slopes. Pathways and grassed amenity areas will be the only site disturbances within 15 metres of the top of slope following construction, with some regrading needed to match existing grades at the pathway. Minimal excavation will be required to construct the pathways. As the centerline of the pathway will be a minimum of six metres west of the outer ravine trees in the vicinity of the apartment building, the construction of the pathway will not impact the critical root zones of the retained trees along the ravine. The pathways will be outside of the limit of hazard lands.

With respect to potential impacts of stormwater, the stormwater from hard surface areas such as asphalt roadways, driveways and sidewalks will drain to the new storm sewer system which will be treated by appropriately designed oil and grit separators. The outlet design for the storm sewers will include erosion protection measures such as rip rap to control erosion. The areas which drain directly to the central ravine will be limited to grass landscaped areas. The detailed design will include LID techniques for the developed areas adjacent to the ravine slopes to encourage infiltration and minimize surface flows into the ravine from the tablelands.

Although the ravine area and top-of-slope valley setbacks will be retained and protected, some tree removal on the tablelands occurred in the vicinity of the current site. These trees did provide some ecological functions including local wildlife habitat, and an area of tree cover with associated climate, air quality, wildlife, and nature appreciation benefits. Potential impacts during construction of the residential development and associated removal of trees and other vegetation includes impacts on wildlife, increased erosion and release of sediments and other potential contaminants from truck traffic and construction activity, harm to wildlife remaining in the work area during construction, and impacts associated with an increase in noise, dust and light. The following mitigation measures are designed to address these potential impacts.

1. All top of slope setbacks and other trees to be retained are to be protected with temporary fencing at least 1.2 metres in height installed from the tree trunk, where possible, a distance of ten times the retained tree's diameter (the critical root zone);
2. No grading, heavy machinery traffic, stockpiling of material, machinery maintenance and refueling, or other activities that may cause soil compaction is to occur within three metres of the critical root zone of the trees to be retained and protected;
3. The root system, trunk or branches of the trees to be retained are to be protected and not damaged unless necessary. Exposed roots of retained trees are to be either kept moist and protected until they can be backfilled, or as advised by a certified arborist, the roots cut cleanly and as far from the tree as possible at a proper angle to facilitate healing;
4. Overhanging branches that may be damaged by the construction are to be trimmed by a certified arborist prior to construction;
5. Exhaust fumes from all equipment during construction will not be directed towards the canopy of the retained trees;
6. 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, and,
7. 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.

In terms of planting sensitivities, tree and shrub species that have a high water demand are not recommended for the site due to the clay soils. These species include willows, poplars, and elm. Paterson (2022) noted that the silty clay deposits on the site were hard to firm and are considered to be low to medium sensitivity clay and should not be considered a sensitive marine clay. Therefore, Paterson (2022) concluded that where footings are founded over a silty clay bearing surface, large trees (mature height over 14 metres) can be planted provided a tree to foundation setback equal to the full mature height of the tree is utilized (e.g. in a park or other green space). Tree planting setback limits may be reduced to 4.5 metres for small (mature height up to 7.5 metres) and medium size trees (mature tree height 7.5 to 14 metres). Paterson (2022) noted that shrubs and other small plantings are permitted within the 4.5 metre setback area. To ensure adaptability and longevity, it is important that native trees from a local seed stock be used for planting whenever possible. Plantings of native trees and shrubs are recommended to add to the natural attributes of the site. A mix of coniferous and deciduous species such as sugar maple, red maple, tamarack, white spruce, white pine, red oak, basswood, native dogwoods, and nannyberry is recommended.

With respect to Species at Risk, site alterations within the 30 metre setback for potential Blanding's turtle habitat will be limited to those required for stormwater works and installation of pathways, with some regrading required to match the existing grades at the pathways. No new structures will be within 30 metres of the potential turtle habitat. The removal and harm of butternuts on the overall site will be compensated for with off-site plantings of pure butternut stems and archiving of one Category 3 butternut that shows the potential for some resistance from the butternut canker. A Confirmation of Registration has been received from MECP for the removal and harm of the healthy butternuts.

Many helpful wildlife-oriented mitigation measures are detailed in the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2022). Contractors are to review in detail and understand the City's Protocol for Wildlife Protection during Construction prior to commencement of construction. Listed below are specific mitigation measures associated with the Protocol for Wildlife Protection during Construction (City of Ottawa, 2022).

Summary of Mitigation Measures

1. 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;

2. During construction, sediment and erosion control measures will be implemented as required, including filtering of pumped groundwater, properly installed and maintained silt fencing, and seepage barriers deployed in any temporary drainage ditches, until the construction is completed. These control measures must be properly maintained to maximize their function during construction. For example, the silt fencing must be properly keyed in to filter runoff and be maintained as required, including repair of broken panels and removal of accumulated sediment;

3. The contractor is to be aware of potential Species at Risk in the vicinity of the site such as butternut and Blanding's turtle. Appendix 1 of City of Ottawa (2022) describes these species. The contact biologist for this project, as described in Appendix 1, is myself, Bernie Muncaster (613-748-3753). Any new Species at Risk sightings are to be immediately reported to the project manager and the Ministry of the Environment, Conservation and Parks and activities are to be stopped until further direction is received from the Ministry;

4. As recommended in City of Ottawa (2022), prior to beginning work each day thorough visual inspections of the work space and immediate surroundings are to be completed for wildlife. See Section 2.5 of the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2022) for additional recommendations on construction site management. Any turtles and snakes in the work area are to be relocated to the ravine lands. Animals should be moved only far enough to ensure their immediate safety. Only those trained in handling Species at Risk should relocate these species. See Appendix 1 and the links in Section 4 of City of Ottawa (2022) for suggestions on how to effectively relocate turtles and snakes;

5. Although not anticipated, to protect breeding birds, no additional tree or shrub removal should occur between March 1st 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 was observed on or adjacent to the overall site, and no removal will occur for trees anticipated to have the potential for raptor nesting;

6. Temporary exclusion fencing (as per the Species at Risk Branch Best Practices Technical Note Reptile and Amphibian Exclusion Fencing Version 1.1, July 2013) will be used during construction in the area of the ravine to ensure that any turtles and other sensitive wildlife cannot access the construction area. The location of the temporary exclusion fencing will be along the limit of hazard lands (dashed blue line on Figure 1). The temporary fencing will be silt fencing properly dug in and well maintained. It is anticipated that the pathways will be constructed last so once all the other construction is complete, the temporary fencing will be relocated to the inside of the pathway alignment. Education and awareness training will be provided to on-site workers by a qualified professional to ensure that they know how to identify a Blanding's turtle and know what to do if one is found on site. Sweeps of the work area will be completed prior to each work day and any Species at Risk occurrences will be submitted to the Natural Heritage Information Centre, MECP, and project biologist as soon as possible. Work that may impact the species will be halted until direction is obtained from the Ministry;

7. 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,

8. 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

Significant natural heritage features, as defined in the Provincial Panning Statement, were identified for the overall site and adjacent to the current site, including significant valleylands in the central ravine, associated potential local fish habitat in the ravine channel, potential Blanding's turtle habitat, and butternuts. The central ravine will be retained and protected with a 15 metre top-of slope valley setback. The removal and harm of butternuts will be compensated for with off-site plantings of pure butternut stems and the archiving of one butternut that shows the potential for some resistance from the butternut canker.

The tablelands have historically been used for agriculture and are now dominated by diturb3ed areas with topsoil removed and some regenerating vegetation. Mitigation measures are presented to protected the adjacent natural heritage features to be retained.

This EIS concludes that it is the professional opinion of the author that the construction and operation of the proposed apartment will not have a negative impact, as defined in the Provincial Planning Statement, on the significant natural heritage features and functions of the general area, including the significant valleylands in the ravine and associated potential aquatic habitat, provided the above recommended mitigation measures are properly implemented.

References

City of Ottawa. 2022. Protocol for Wildlife Protection during Construction. Revise December, 2022. 14 pp & Append.

Geo Morphix Ltd. 2022. Fluvial Geomorphological and Erosion Hazard Assessment. 147 Langstaff Drive, Carp, Ontario. January 21st, 2022. Report No. PN19072.

Ontario Ministry of Natural Resources. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. 2nd 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.

Paterson Group. 2019. Groundwater Impact Assessment, Proposed Residential Development, 147 Langstaff Drive. October 25th, 2019. Letter No.: PH3878-LET.01. 10 pp & Append.

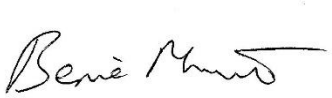
Paterson Group. 2022. Geotechncial Investigation, Proposed Residential Development, 147 Langstaff Drive. January 21st, 2022. Report No.: PG4918-1, Revision 6. 25 pp & Append.

Robinson Consultants Inc. 2004. Carp River Watershed/Subwatershed Study. December, 2004 Prepared for the City of Ottawa. Project No. 00056. 224 pp & append.

Schut, L.W. and E.A. Wilson. 1987. The soils of the Regional Municipality of Ottawa-Carleton (excluding the Ottawa Urban Fringe). Report No. 58 of the Ontario Institute of Pedology.

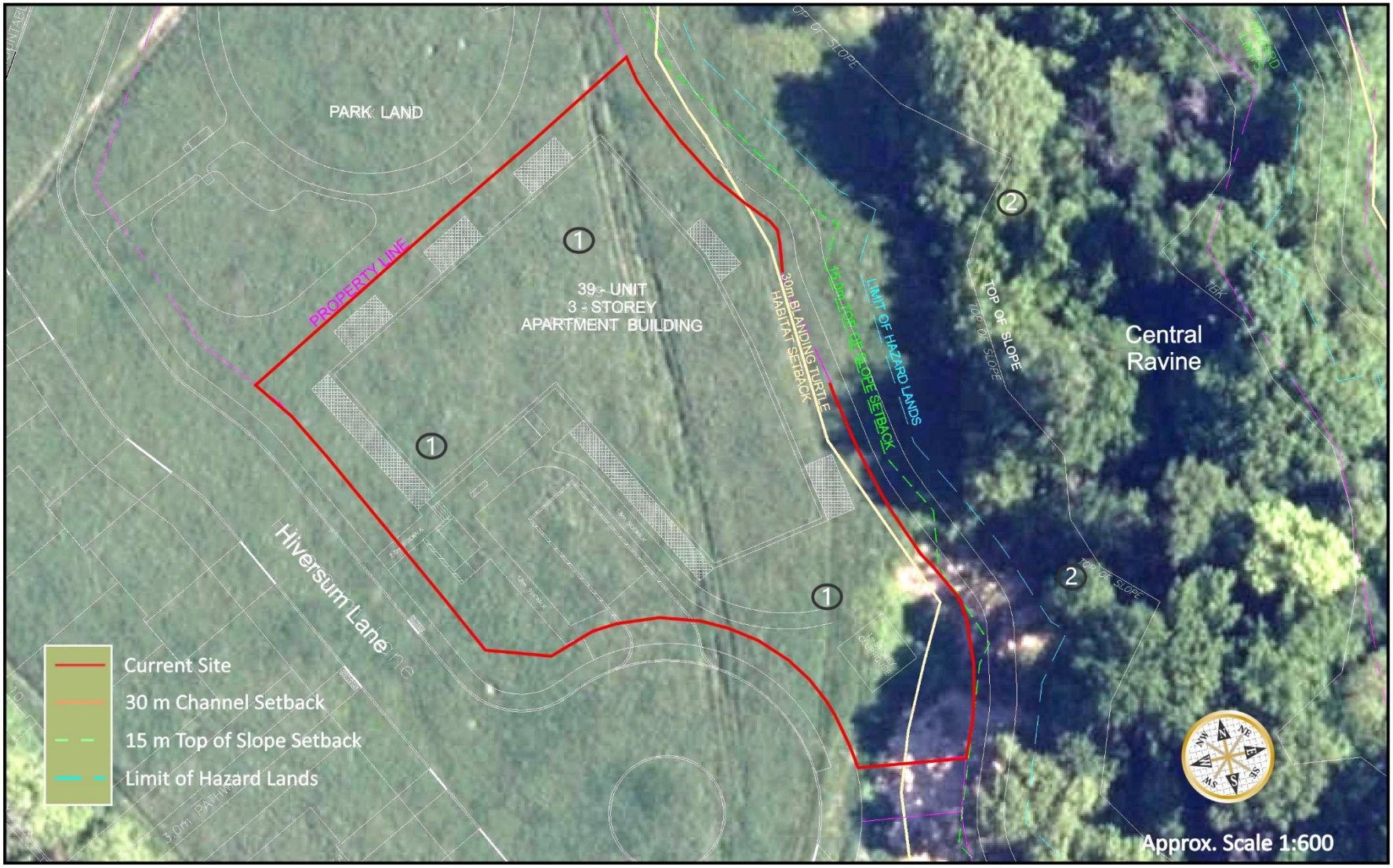
Please call if you have any questions regarding this EIS.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, M.Sc.
Principal

\Langstaff Carp EIS - 391 Hilversum Lane



Vegetation Communities

1 Cultural meadow/ disturbed area

2 Upland maple deciduous forest

2022 air photo from geoOttawa

0 10 20 30 METRES

Figure 1	FILE: 08 - 44	Sept 17, 2025

Prepared for: **Inverness Homes**

Prepared by: Muncaster Environmental Planning Inc.

Environmental Impact Study

391 Hilversum Lane
Carp, City of Ottawa

FIGURE 2 – BUTTERNUT LOCATIONS for OVERALL SITE, ASSESSMENT CATEGORIES and HABITAT IMPACTS