

**ENVIRONMENTAL IMPACT STATEMENT  
and  
TREE CONSERVATION REPORT**

**PROPOSED MIXED USE DEVELOPMENT**

**PALLADIUM DRIVE  
KANATA WEST  
CITY of OTTAWA**

**A report prepared for:**

**Taggart Realty Management**

**by *Muncaster Environmental Planning Inc.***

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### **APPENDIX A**

Ministry of Natural Resources Correspondence

## 1.0 INTRODUCTION

The site is in Kanata West, north of Highway 417 in the vicinity of the Palladium Drive intersection with Highway 417 (Map 1). The west boundary of the site is the current west edge of the City's Urban Area. An extension of Campeau Drive will form the north site boundary, with Huntmar Drive along the east boundary. Proposed uses for the 57.9 hectare site include 37,500 m<sup>2</sup> of mixed use (entertainment, leisure, retail and service use) on the east half of the site, while the west half of the site will consist of 33,000 m<sup>2</sup> and 60,000 m<sup>2</sup> of office and light industrial uses, respectively. The legal description is Part of Lots 3 and 4, Concession 1, West Carleton Geographic Township (former Huntley Township), now City of Ottawa. The municipal address for the west half of the site is 3001 Palladium Drive (PIN 045080027) and 333 Huntmar Drive for the east half (PIN 045080028). The owner of the site is West Ottawa Land Holdings Co-Tenancy (613-234-7000).

The site is predominantly cultivated fields, with some wooded areas along the Feedmill Creek corridor, which runs west-east on the portion of the site closest to Highway 417. There are no buildings located on the site, however farm remains, such as debris, barn/stall foundations, and remnants of demolished buildings occupy portions of the east part of the site. The wooded areas form the boundary of the Palladium Interchange Urban Natural Area, identified as Area 33 in the Urban Natural Area Environmental Evaluation Study. This 8.7 ha Urban Natural Area was not evaluated as part of the original Urban Natural Area Environmental Evaluation Study due to access concerns. The Palladium Interchange Urban Natural Area overlaps with the Queensway North Natural Area, identified as Natural Area 418 in the former Region of Ottawa-Carleton's Natural Environment System Strategy. This 70 hectare Natural Area was rated low overall, however no on-site surveys were undertaken as part of the NESS work. The Queensway North Natural Area continues among the wooded areas to the west, to the west of the current urban boundary, with most of the Natural Area to the west of the current site. None of the eight evaluation criteria were scored with a high significance with only the rare vegetation community/landform representation given a moderate significance. No large-scale linkages were identified for the Natural Area. No environmental constraints are identified for the site or adjacent lands on Schedule K of the Official Plan.

There are no Areas of Natural and Scientific Interest or Provincially significant wetlands in proximity to the site, with the South March Highlands the closest Provincially significant wetland and Area of Natural and Scientific Interest, approximately three kilometres to the north of the site (Brunton, 1995). No interior habitat, rare vegetation, Areas of Natural and Scientific Interest or Centres of Ecological Significance were identified on the site in the Carp River Watershed/Subwatershed Study (CRWSS) (Robinson, 2004), although the wooded area along the Feedmill Corridor and some of the woods to the west of the site are identified as woodlands greater than 50 years of age. Portions of the vegetation to the west of the site are also identified as rare vegetation in the CRWSS. The CRWSS identified the west quarter of the site as a moderate recharge area. Wetlands to the south of the site and south of the Highway 417 corridor are identified as significant evaluated wetlands in the CRWSS but are not identified as Provincially significant on the City of Ottawa's mapping. No Category 1 or 2 Terrestrial Habitats are identified for the site in the CRWSS. The CRWSS recommended an overall

corridor width of 70 metres along Feedmill Creek to accommodate the meander belt recommendations and provide aquatic habitat protection.

This Environmental Impact Statement (EIS) has been completed due to the presence of the Palladium Interchange Urban Natural Area on portions of the site and Feedmill Creek through the south portion of the site. In addition the Feedmill Creek corridor in the east portion of the site, to the west of Huntmar Drive, is identified as *Significant Valleylands* on Annex 14: Natural Heritage Systems of Official Plan Amendment 76. Annex 14 does not identify the on-site forests as *Significant Woodlands*, although portions of the lands to the west of the site are identified as *Significant Woodlands*. The closest *Urban or Rural Natural Features* designation is to the southwest of the site, south of the Highway 417 corridor and west of the Urban Area boundary.

### **1.1 Scoping the Environmental Impact Statement**

This EIS was prepared in accordance with Section 4.7.8 of the City of Ottawa Official Plan (2003) following the EIS Guidelines and the Guidelines for City of Ottawa Tree Conservation Report, found at [http://ottawa.ca/en/city\\_hall/planningprojectsreports/planning/dev\\_review\\_process/guide/environmental\\_impact/](http://ottawa.ca/en/city_hall/planningprojectsreports/planning/dev_review_process/guide/environmental_impact/) and [http://ottawa.ca/en/env\\_water/tlg/trees/preservation/guidelines/](http://ottawa.ca/en/env_water/tlg/trees/preservation/guidelines/), with guidance from the Natural Heritage Reference Manual (OMNR, 2010). Note that the current version of the EIS Guidelines, 2<sup>nd</sup> Edition April 2012, was utilized with the web link soon to be updated with this new version. The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over twenty-three years of experience in completing natural environment assessments. The purpose of the Tree Conservation Report component is to determine any tree stands that should be retained and protected. It is proposed to remove the woody vegetation not to be retained on the site later in 2012 or early 2013, outside of the breeding bird season.

The major objective of this EIS is to determine whether the proposed change in land use will negatively affect the significant features and functions of the Palladium Interchange Urban Natural Area, including Feedmill Creek, and if so can the impacts on the significant natural features and functions be mitigated. Mitigation measures are presented in Section 6 of this Statement to reduce the potential for impacts on the features and functions. This EIS includes the components of an EIS as identified in Section 4.7.8.2 a) through h) of the City of Ottawa Official Plan.

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

- what are the anticipated direct and indirect potential impacts on the Feedmill Creek Corridor, including the woody vegetation in the riparian corridor and the aquatic habitat within Feedmill Creek?;
- what are the features and functions of the woody vegetation in areas proposed for development?;
- is there any aquatic habitat present on the site outside of the Feedmill Creek corridor?;
- given that no field surveys were completed during delineation of the Palladium

Interchange Urban Natural Area, what are the recommended boundaries of the Urban Natural Area and should the boundaries of the development areas be modified based on the on-site and adjacent ecological features and functions, including the Palladium Interchange Urban Natural Area?; and,

- how are the features and functions of the Palladium Interchange Urban Natural Area such as linkages and unique habitats influenced or supported by the balance of the site?

## 2.0 METHODOLOGY

Several background documents have been references during production of this EIS, including the Kanata West Implementation Plan (Stantec, 2006), the Urban Natural Area Environmental Evaluation Study (Muncaster and Brunton, 2005), the Carp River, Poole Creek and Feedmill Creek Restoration Class Environmental Assessment (TSH, 2005), the Carp River Watershed/Subwatershed Study (CRWSS) (Robinson, 2004) and the Natural Environment System Strategy (White, 1997). Following the approach in Section 4.7.8 of the City of Ottawa Official Plan (2003), this EIS identifies the natural environment features within and adjacent to the site. The role the site plays in supporting the functions and features of the Palladium Interchange Urban Natural Area are described. Specifically Section 4.7.8.1 c) of the City of Ottawa Official Plan (2003) states that the focus of the EIS for lands within and adjacent to Urban Natural Features will be on managing the interface or transition zone between urban developments and natural features in an urban context. Applicable features for this site identified in Section 4.7.8.1 c) are the Feedmill Creek Corridor, protection of woodland edges and management of access.

Other natural heritage information was collected and summarized through correspondence with Kemptville District Ministry of Natural Resources and the City of Ottawa, and a review of the Natural Heritage Information Centre and Biodiversity Explorer databases.

Colour aerial photography (2002 - 2011) was used to assess the natural environment features in the general vicinity of the site. Field observations were conducted on May 21<sup>st</sup> and June 12<sup>th</sup>, 2009 and April 1<sup>st</sup>, June 30<sup>th</sup> and July 8<sup>th</sup>, 2010, both on and adjacent to the site. The June 12<sup>th</sup> field survey began at 07:00, with partly cloudy and calm conditions and an air temperature of 17° C.

Ecological units were defined based on species present, the wetness index of the species, dominant species, drainage observations, health, age, topography and soil conditions. Records of wildlife were made through direct sightings and observations of tracks and scat. Other aspects of the surveys included photographs of site representative features and observations on the level of disturbance from human activities and other disturbances such as non-native flora.

NHIC (2012) and Muncaster and Brunton (2005) were used for the current status of the flora and fauna observed.

For the purposes of this report Highway 417 is assumed to run in an east-west orientation.

### **3.0 EXISTING CONDITIONS**

#### **3.1 Geologic and Hydrologic Conditions**

The site is generally flat with a gentle slope to the northeast. More topographical relief is associated with the Feedmill Creek corridor, especially in the east portion of the site where the valley walls are up to 4 metres high. Two small knolls are in the southeast corner of the site. The general surface drainage of the area is towards Feedmill Creek and an east-west channel immediately to the north of the site. Feedmill Creek enters the Carp River about one kilometre to the east of the site.

The west part of the site is mapped as poorly drained sandy loam soils, with poorly drained silty loams in the central and east portions (Schut and Wilson, 1987). Paterson (2012) summarized the surficial soils in the west part of the site as topsoil overlying a loose brown silty sand and/or sandy silt overlying glacial till, with topsoil underlain by silty clay deposits in the central and east portions. Paterson (2012) anticipated that the depth of overburden varies between 5 and 25 metres, with the bedrock consisting of interbedded limestone and shale of the Verulam formation. Groundwater levels at the time of the December 22<sup>nd</sup>, 2010 fieldwork by Paterson (2012) ranged between 0.7 to 4.7 metres below surface.

#### **3.2 Terrestrial Features**

##### **3.2.1 Vegetation Communities**

Outside of the Feedmill Creek corridor, the site is dominated by open agricultural lands, with deciduous hedgerows separating the fields and on the site peripheries. Cultural meadow, thicket and woodland habitats are in the west portion of the site, which is now out of agricultural production (Map 1).

##### Cultural Meadow/Agricultural Fields

The majority of the site outside of the Feedmill Creek corridor was cultivated in corn in 2009, 2010 and 2011. Cultural meadow vegetation adjacent to the cultivated fields includes reed canary grass, common dandelion, St. John's wort, Canada goldenrod, tall goldenrod, late goldenrod, common milkweed, narrow-leaved meadowsweet, wild parsnip, ox-eye daisy, June meadow grass and common buckthorn, slender willow and red-osier dogwood shrubs.



*Photo 1 –Cultural meadow habitat in the central-west portion of the site*

### Cultural Thicket

Cultural thickets in the far west portion of the site are dominated by common buckthorn, glossy buckthorn, red-osier dogwood, Bebb’s willow, slender willow, pussy willow and red raspberry. Glossy buckthorn is dominant in the central part of the thicket habitat. Scattered regenerating stems of balsam poplar, trembling aspen, red ash, white elm, white cedar and tamarack are up to 20cm dbh. Canada and tall goldenrod are abundant ground cover in the cultural thicket, along with common dandelion, wormseed mustard, tufted vetch, brown-eyed susan, timothy, Philadelphia fleabane, daisy fleabane, bird’s-foot trefoil, red clover, tall buttercup, ox-eye daisy, common yarrow, white-sweet clover, joe-pye-weed, blue vervain, yellow avens, purple loosestrife, orchard grass, awnless brome grass, wild grape, helleborine, Virginia creeper, common milkweed, blue violet and wild madder.

Where willow shrubs are dominant, the thicket habitat on Map 1 is referred to as a willow thicket (vegetation community 6 on Map 1).



*Photo 2 – Cultural thicket habitat in the southwest portion of the site*

### Cultural Woodland

A small cultural woodland unit in northeast portion of the site is dominated by Manitoba maple up to 28cm dbh, with white elm, red maple, white cedar and red pine also present. The largest tree, a 45cm dbh red maple, appeared to be in poor condition with broken limbs, decaying bark and a damaged trunk. The largest conifers are red pine and white cedar up to 24cm and 25cm dbh, respectively. Tartarian honeysuckle, common buckthorn and red raspberry are common in the understorey. Wild grape coverage is on many of the trees. Orchard grass is abundant in many areas of the ground flora, with reed canary grass, common burdock, Canada thistle and Virginia creeper common.

Another cultural woodland representation is along Feedmill Creek in the east portion of the site. Mature white cedar and white pine up to 55cm dbh are present, along with many intermediate-aged white cedars (Photo 3). Manitoba maple, red ash and white elm are common, as is common buckthorn in the understorey. Red raspberry, speckled alder and red-osier dogwood are also present. Ground flora included reed canary grass, orchard grass, Canada anemone, common milkweed, bluegrass, tall meadow-rue, soapwort and common burdock. Plantings of white ash and red ash along Feedmill Creek are up to 18cm dbh and appear to be in good condition.

Lands adjacent to the Feedmill Creek corridor in the southwest portion of the site that appear to have been out of agricultural production longer are also noted on Map 1 as cultural woodland (vegetation community 3). Mature crack willow are present, along with smaller trembling aspen, and white elm trees. Glossy buckthorn and reed canary grass are dominant in the understorey and ground flora, respectively.



*Photo 3 – Feedmill Creek corridor in the east portion of the site. Note corn to edge of valley top-of-slope as indicated by stake. View looking east*

### Deciduous Hedgerows

Trembling aspen, white birch, red ash, white ash, balsam poplar and white elm are the dominant tree species in the deciduous hedgerows, identified as vegetation community 4 on Map 1. Crack willow, Manitoba maple, white cedar and sugar maple are also present. The trees are generally intermediate-aged, with the largest poplars in the range of 25 - 30cm diameter at breast height (dbh). An 80cm dbh mature sugar maple in the central portion of the site west of Huntmar Drive appears to be in poor condition with major trunk and limb damage. A mature coppice crack willow in the central-west east-west hedgerow also appears to be in poor condition with major trunk damage. Larger white ash, up to 40cm dbh, are along the west edge of the site. Glossy buckthorn is abundant among the trees in the hedgerows with crabapple, hawthorn, slender willow, red raspberry, common buckthorn and gray dogwood also present. Most of the trees appear to be in generally good condition with fungus present on some of the ash and elm and wild grape coverage on many.

Two short north-south deciduous hedgerows south of Feedmill Creek in the southeast portion of the site are dominated by mature Manitoba maples up to 60cm dbh. Smaller bur oak and trembling aspens and staghorn sumac shrubs are adjacent to the Manitoba maples and old foundations, along with a very large, 115cm dbh, sugar maple at the south end of the west north-south hedgerow. The maple appeared to be in senescence with reduced leaf-out and broken limbs (Photo 4).



*Photo 4 – Mature sugar maple at end of hedgerow in southeast portion of site.*

#### Fresh-Moist White Cedar Mixed Forest

This is the dominant community along the Feedmill Creek corridor in the west half of the site. White cedar up to 32cm dbh is the dominant tree species, with sugar maple, black willow, white ash, white birch, white elm, red maple, white spruce and red ash also present. A coppice 55cm dbh black willow was the largest tree observed in the community, with many ash trees in the range of 35 – 40 cm dbh. Scattered white spruce are up to 50cm dbh. Glossy buckthorn is abundant in many areas of the understorey, with speckled alder, white elderberry, tartarian honeysuckle and chokecherry common in areas. Sensitive fern, lady fern, ostrich fern, bulblet bladder fern, reed canary grass, white baneberry, white trillium, wild ginger, foamflower, white baneberry, wild ginger, yellow violet, marsh fern, ostrich fern, field horsetail, Canada mayflower, tall meadow-rue, enchanter's nightshade, white snakeroot, hog peanut, Canada goldenrod, Canada thistle and wild grape are typical of the ground flora, which is much more fern rich than other portions of the site and shows less disturbance from non-native ground flora.

#### Fresh-Moist Poplar Deciduous Forest

This community, in the central-west portion of the site, occurs where the poplar coverage is greater than 60 percent adjacent to the cultural thickets dominated by buckthorn to the east and north and willow thickets to the south (Photo 5, vegetation community 5 on Map 1). Glossy buckthorn continues to be dominant in the understorey, with regenerating red ash stems in many areas. Balsam poplar, trembling aspen and white birch are the common tree species, with pockets of dense white cedar up to 22cm dbh. Most deciduous trees are less than 20cm dbh, with a few poplars up to 32cm dbh. Many of the young tree trunks and limbs are broken in this scrub-like vegetation unit, with wind throw and ice storm damage appearing extensive. Wild

grape coverage is extensive on many trees and shrubs. Canada goldenrod, tall goldenrod, poison ivy, wild grape, common dandelion, field horsetail, daisy fleabane, white snakeroot, Virginia creeper, enchanter's nightshade, tall meadow-rue, blue violet, tall buttercup, common burdock and sensitive fern are representative of the ground flora generally dominated by non-native and/or invasive species.



*Photo 5 – Young poplar deciduous forest with thick buckthorn in understorey*

### Meadow Marsh

Reed canary grass is dominant in the marsh habitat along the north side of Feedmill Creek in the southwest portion of the site (Photos 6 and 7). Canada bluejoint, purple loosestrife, soft-stem bulrush, boneset, blue vervain, joe-pye-weed and spotted jewelweed are also present.

The owner reports removal of beavers in the area of the meadow marsh and a breached beaver dam through Feedmill Creek itself is present in the southeast corner of the meadow marsh. Dead white cedar stems up to 30cm dbh are scattered in the marsh habitat, which has a maximum width of about 50 metres in the vicinity of the former dam. It is likely that the expanse of the meadow marsh has been strongly influenced by the beaver dam and associated holding back of water. It is anticipated that the extent of meadow marsh would be reduced if the beaver dam was not re-established.



*Photo 6 – Feedmill Creek through the meadow marsh in the southwest portion of the site.  
View looking west*

### **3.2.2 Wildlife**

Breeding birds observed on the site are dominated by generalist species that utilize a variety of habitats. Common yellowthroat was commonly observed in the marsh and thicket habitats. Immature rose-breasted grosbeaks were noted in the mixed forest along the Feedmill Creek corridor, along with warbling vireo, ovenbird, yellow warbler, grey catbird, song sparrow and common yellowthroat. Red-winged blackbird, American goldfinch, common grackle, yellow warbler, American crow, blue jay, Baltimore oriole, least flycatcher, song sparrow with young, American robin, downy woodpecker, northern flicker, black-capped chickadee and red-eyed vireo were observed in the thicket and poplar forest habitats. Killdeer, Canada goose, American crow, song sparrow, wild turkey, European starling, yellow warbler, common yellowthroat, eastern kingbird and northern flicker were noted in the meadow habitat, with a turkey vulture soaring overhead on June 12<sup>th</sup>, 2009. Woodpecker cavities were noted in the mixed forest along the Feedmill Creek corridor. Red squirrel, woodchuck, white-tailed deer, green frog and northern leopard frog were other wildlife species observed on the site, along with historical beaver cuttings.



*Photo 7 – Former beaver activity in meadow marsh at Feedmill Creek in the west part of the site.*

### **3.3 Aquatic Habitat**

Feedmill Creek is identified in the Carp River Watershed/Subwatershed Study (CRWSS) (Robinson, 2004) as a natural channel supporting a tolerant coldwater fish community, with good to fair water quality and some impairment of the benthic macroinvertebrate community from nutrient enrichment in the downstream, east, portion of the site. However, a water temperature survey conducted by Mississippi Valley Conservation staff in August, 2003 about 1.3 kilometres upstream of the site at the Maple Grove Road allowance concluded that Feedmill Creek is at the upper limit of the cool, not cold, water temperature range, with a maximum water temperature of 22° C. Maximum water temperatures of 24° C in Feedmill Creek near the confluence with the Carp River were reported by TSH (2005). Regardless Feedmill Creek supports a diverse assemblage of forage fish, although water temperatures preclude the cold water designation for the creek. The CRWSS notes that Feedmill Creek is a relatively stable stream and is one of the watercourses in the Carp River watershed to support the greatest diversity of fish species and best habitat conditions. OMNR fish sampling in 1993 identified the following species in Feedmill Creek, bluntnose minnow, fathead minnow, northern redbelly dace, white sucker, brook stickleback, central mudminnow, common shiner, logperch and mottled sculpin. The streamside habitat for Feedmill Creek in the west portion of the site was identified as natural in the CRWSS and degraded for the east portion. The CRWSS concludes that:

*the natural channel of Feedmill Creek exhibits pool:riffle morphology and a meandering pattern, interspersed with some shallow bedrock and wetland features. The existing*

*channel, riparian and floodplain components are not restricted by adjacent land uses such that the channel has room to naturally evolve within its floodplain and can accommodate the changes in hydrology and sediment loading from proposed land use changes with appropriate runoff controls.*

Feedmill Creek is contained within a 40 to 50 m wide valley corridor with a one to four metre high valley wall. The valley corridor is less defined within the west portion of the site, where the valley walls are close to one metre or less. Typical water depths and wetted widths are between 30 and 60cm and one to two metres, respectively.

In the southwest portion of the site Feedmill Creek meanders along the periphery of and through a mixed forest (Photo 8). A breached beaver dam was through the creek in the south-central portion of the west part of the site. This likely accounted for standing water observed to the north of Feedmill Creek in this area on 2005 and 2008 aerial photography. The lack of a dam should assist in maintaining a cool water thermal regime for Feedmill Creek. In addition to stream shading, the good canopy cover in most this reach will provide a source of woody debris, bank erosion protection, surface water filtering and a cool microclimate (Robinson, 2004).

Canopy cover in the east portion of the site is minimal along Feedmill Creek itself, with only scattered Manitoba maple and white cedar trees (Photo 3). However some fallen trees provide some stream cover and inputs to the aquatic system. Portions of Feedmill Creek in the vicinity of the site were diverted to accommodate the Palladium Drive and Highway 417 interchange. Enhancement measures were completed in the mid-1990s to compensate for the disturbances to the creek, including the relocated channel. Deciduous tree and shrub plantings were completed in sections along the creek. The plantings are now in the range of 18cm dbh and appear to be in good condition. Deflectors were installed along both sides of the channel to assist in scouring (Photos 9 and 10). The deflectors reduced the wetted width to one metre and coarse material, providing important fish and insect habitat, was common in the areas of the deflectors during 2010 observations.

#### Other Channels

A swale entering Feedmill Creek east of the westbound off-ramp from Highway 417 was examined on April 1<sup>st</sup>, 2010. No defined channel was observed more than two metres northeast, upstream, of the creek channel and the slope further upstream would prohibit any fish utilization, even during elevated flows (Photos 11 and 12).

A tributary of Feedmill Creek, appearing to be an old drainage swale is along the west edge of site and the south side of the west portion of the central east-west hedgerow. Spoil piles are adjacent to the channel. Some standing water observed in the channel but no surface connection of note was observed to Feedmill Creek. The connection would likely have been better when the beaver dams along Feedmill Creek were in place. As requested by Mississippi Valley Conservation this channel was sampled for fish on April 30<sup>th</sup>, 2012.

Three stations were sampled along the tributary with an electrofisher and dip nets. Electroshocking was completed for a station length of 35 metres at 50-100 volts, and 1.5-1.7 amps. The water temperature was 11.8° C, with an air temperature of 16.0° C at 14:30. The conductivity was 875 µs, with a pH of 7.47 and total dissolved solids of 450 ppm. The downstream sampling station included a pool. The average wetted widths and depths were 1.8 metres and 13 cm, respectively (Photos 13 and 14). The area fished was 37 m<sup>2</sup> and the shock time was 27 seconds. No fish were captured or observed using either the electrofisher or a total of ninety- three dips at the three sampling stations.

A west to east channel to the north of the site parallels the north site boundary and enters Feedmill Creek via a roadside swale on the west side of Huntmar Drive. The CRWSS did not consider any of the on-site channels leading to Feedmill Creek to be fish habitat and did not identify habitat protection for these channels.



*Photo 8 – Feedmill Creek emerging from the mixed forest just west of Palladium Drive. View looking southwest*



*Photo 9 – Deflectors installed and shrub plantings along Feedmill Creek in east portion of site as part of 1990s compensation work. Note coarse exposed substrate*



*Photo 10 – Deflectors installed and shrub plantings along Feedmill Creek in east portion of site as part of 1990s compensation work. Note boulders, coarse substrate and good shrub growth*



*Photo 11 – No definition of tributary to Feedmill Creek in east portion of the site, east of westbound off-ramp from Highway 417. View looking east*



*Photo 12 – Tributary to Feedmill Creek in east portion of the site, east of westbound off-ramp from Highway 417, with Feedmill Creek in the background. View looking southeast*



*Photo 13 - Station E3 and D1 looking upstream from downstream (April 30<sup>th</sup>, 2012)*



*Photo 14 - Station D3 (April 30<sup>th</sup>, 2012)*

### 3.4 Species of Interest and Other Significant Features

All of the flora and fauna species observed are considered *very common in Ontario*, *demonstrably secure* (NHIC, 2010). No Species at Risk, species of special concern or rare flora or fauna were identified in the Queensway North Natural Area summary (White, 1997). None of the communities on the site were representative of the rare vegetation communities identified by White (1997) in the Queensway North Natural Area summary. Other databases were reviewed to determine whether any species at risk are likely to occur in the general area. Schedule 1 (List of Wildlife Species at Risk) of the *Species at Risk Act* was reviewed, including the COSEWIC lists for endangered and threatened species and species of special concern, none of the listed species, including butternut, which is relatively common in portions of eastern Ontario, were observed or have been reported in the vicinity of the site. Ms. Rose Fleguel, a certified Butternut Health Assessor, reviewed the site on August 24<sup>th</sup>, 2010 and found no butternuts. Correspondence from the Ontario Ministry of Natural Resources Kemptville District Office dated April 27<sup>th</sup>, 2009 (Appendix A) identified the Stittsville Wetland complex to the south of the site, south of Highway 417. The endangered butternut was a Species at Risk identified in the MNR correspondence as potentially occurring in the area.

The Ontario Ministry of Natural Resources' biodiversity explorer website was also reviewed (<http://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/main.jsp>) to identify potential threatened and endangered species covered by the 2008 *Endangered Species Act* in the general area, as well as other species of special interest. A search was conducted on the 1 km squares including the site and adjacent lands (18VR21\_55, \_56, \_65 and \_66). No Species at Risk were identified for the four 1km squares, with one provincially rare species, ram's-head lady's-slipper, reported. The breeding birds listed in the Ontario Breeding Bird Atlas for the 10 km square 18VR21 identified whip-poor-will and bobolink as Species at Risk in the overall 10 km square.

The potential Species at Risk in the City of Ottawa were reviewed, with an emphasis on the endangered and threatened species historically reported in the overall City, including butternut, American ginseng, eastern prairie fringed-orchid, flooded jellyskin, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, bobolink, whip-poor-will, bald eagle, golden eagle, least bittern, peregrine falcon, eastern cougar, common gray fox, lake sturgeon, and American eel. The habitat requirements of these species along with those listed as special concern were reviewed. None of these Species at Risk were observed during the field surveys and given the general disturbed nature of the site with corn fields, thickets and young wooded areas, no specific habitat characteristics related to the Species at Risk are considered present. Bobolink utilize grass hay fields, but not the cultivated corn fields present on the site. No bobolink were observed during the spring or summer surveys. Milksnake is relatively common in portions of Ottawa but is not often seen. It is found in open woodlands, clearings and around farmhouses where it hunts its major prey item, mice. No snakes were observed during the field surveys. The Ministry of Natural Resources recommends searches of the site during appropriate weather conditions prior to site alterations for potential turtles and snakes.

The ram's-head lady's-slipper orchid is found in mature coniferous forests or coniferous fens and swamps, habitat not present on or in the vicinity of the site. This orchid was not observed during

the spring surveys. The meadow marsh is considered too small and lacks standing water with the beaver dams removed for Blanding's turtle, eastern ribbonsnake, long-styled rush, least bittern or yellow rail. Whip-poor-will requires large wooded areas with open patches, and/or open woodlands or alvar, habitat not present on the site.

Map 1 identifies the recommended Urban Natural Area boundary. The original site Urban Natural Area boundary included more land to the northwest of the Feedmill Creek corridor (shown as a green-dashed line on Map 1). This original boundary was determined without the benefit of on-site examinations. The 2009 and 2010 fieldwork have identified in this area highly disturbed thickets dominated by buckthorn, young poplar forests with the understorey and ground flora dominated by disturbed species and deciduous hedgerows dominated by poplar. No significant features and functions were identified for this area that would add to the Urban Natural Area along the Feedmill Creek corridor. The Feedmill Creek corridor is separated by the original UNA lands to the northwest by thicket habitat.

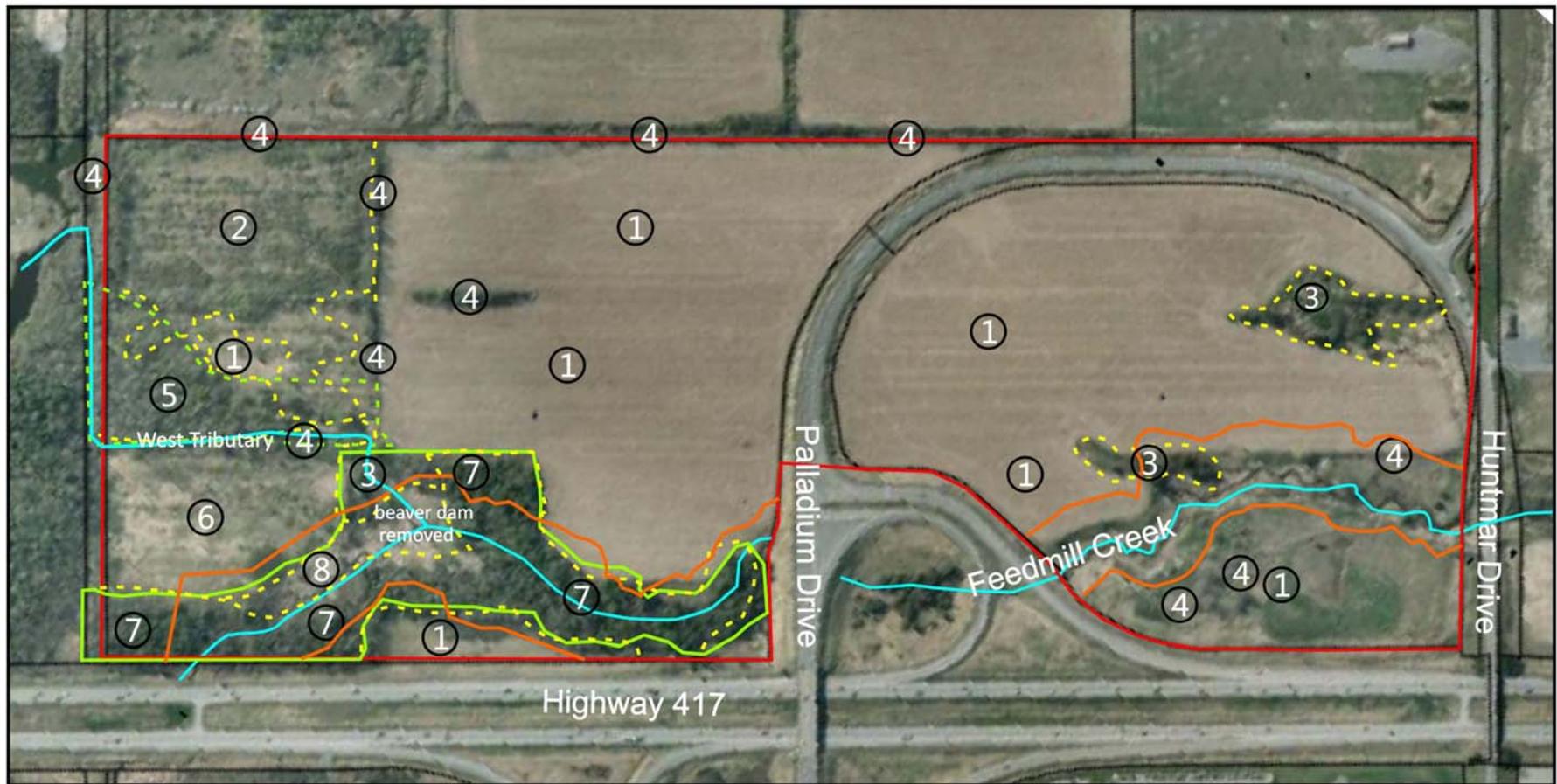
No inter-regional terrestrial linkages were associated with the Queensway North Natural Area (White, 1997) and the abundance of active cropland to the north of the site, aggregate operations to the west and associated cleared lands, the Highway 417 corridor and expanding urban development greatly reduces the potential linkage function of the general area. The site is located in the very southeast portion of the overall low rated natural area.

There is no forest interior habitat on or adjacent to the site due to the agricultural fields, Highway 417, Palladium Drive and the associated interchange with the Highway and aggregate operations to the west. The maximum width of un-fragmented on-site forest is in the range of 100 metres. The only breeding bird observed that is reported as generally require minimum forested areas for successful breeding was ovenbird, while eastern kingbird generally requires a minimum area of forest edge, thickets, grasslands and/or wetlands for successful breeding.

The oldest of the on-site trees would be in the range of 60 – 70 years old, although the vast majority are much younger. Although the site is in the urban area, the adjacent lands to the west are in the rural area. Of the three criteria that must be met for identifying significant woodlands in the rural portion of the City of Ottawa, the east edge of the adjacent forest does not contain forest interior habitat or mature stands of trees 80 years of age or older. Lands further to the west that could not be observed from the west edge of the site were not surveyed due to access concerns and may meet the rural criteria for significant woodlands. However, as described below the adjacent woodlands will be protected and no impacts are anticipated on any significant woodlands that may be present off-site in the woodlands. An access trail is along the west edge of the site, providing a break in the young forest cover (Photo 15).



*Photo 15 – Old access lane along central and north portion of west edge of site.  
View looking north, with west edge of site on right*



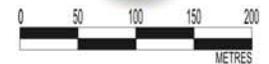
2011 airphoto base from City website

**Legend**

- Site
- Recommended Palladium Interchange UNA Boundary
- - - Portion of Original UNA Boundary
- Feedmill Creek Corridor and Setback
- - - Vegetation communities

**Vegetation Communities**

- ① Cultural meadow/agricultural field
- ② Cultural thicket
- ③ Cultural woodland
- ④ Deciduous hedgerow
- ⑤ Fresh-moist poplar deciduous forest
- ⑥ Willow thicket
- ⑦ Fresh-moist cedar coniferous forest
- ⑧ Meadow marsh



Approx. Scale 1:6,400

September 2, 2012 FILE: 08-35

**Map 1**

Prepared for: **West Ottawa Land Holdings Co-Tenancy**

Prepared by:



Muncaster  
Environmental  
Planning Inc.

**CURRENT VEGETATION**

**KANATA WEST MIXED USE DEVELOPMENT  
CITY of OTTAWA**

#### 4.0 DEVELOPMENT PROPOSAL

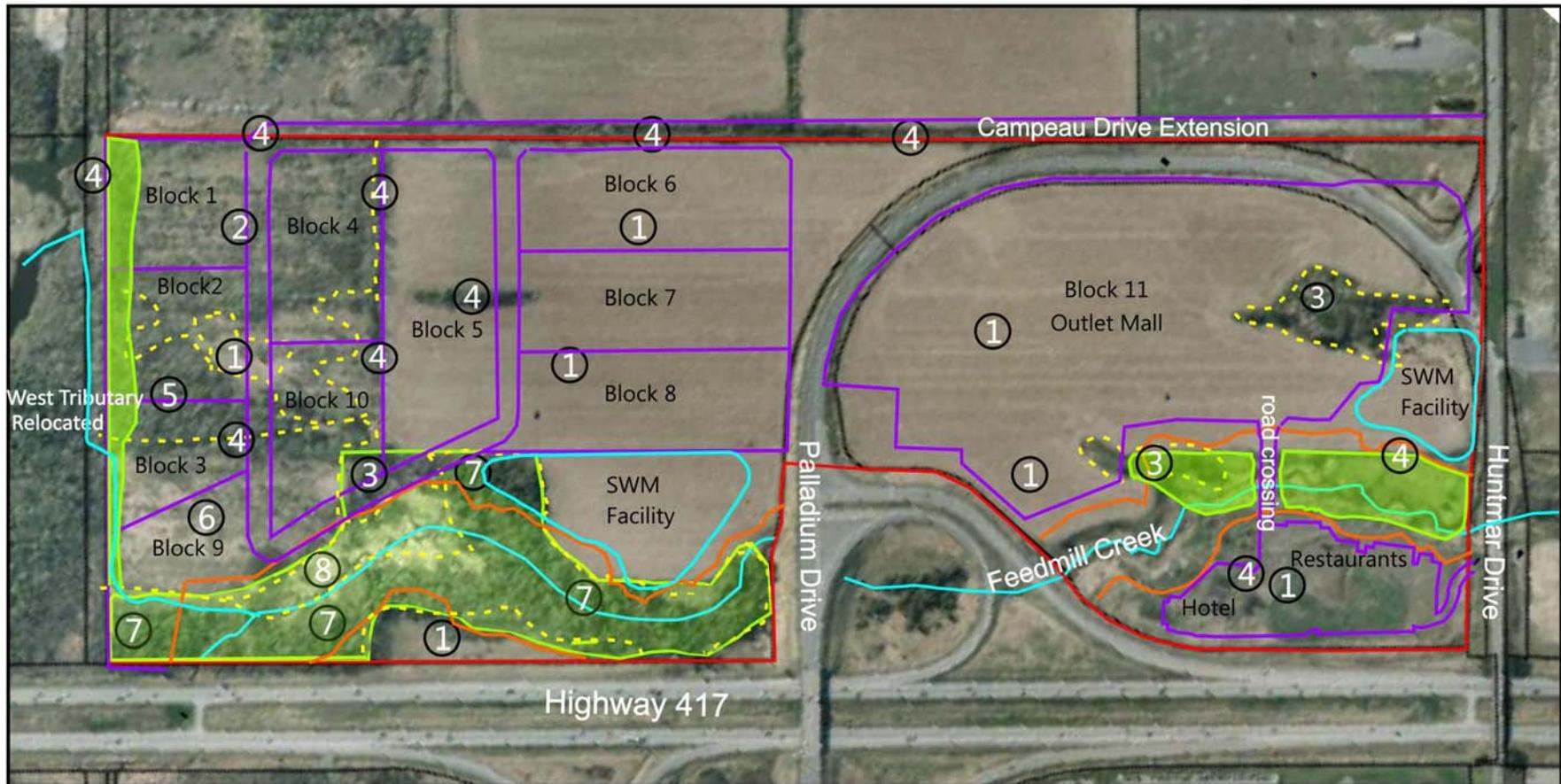
The west and east halves of the site are designated *Enterprise Area* and *Mixed-Use Centre*, respectively on Schedule B of the Official Plan. The site is currently zoned *Development Reserve Zone (DR)* in the City of Ottawa Comprehensive Zoning By-law (2008-250) (FoTenn, 2011). The purpose of this zone is to recognize lands intended for future urban development. The proposed Zoning By-law Amendment would rezone the eastern half of the lands from *Development Reserve Zone (DR)* to *Mixed-Use Centre Zone (MC)* and the western half of the site from DR to *Business Park Industrial Zone (IP)* (FoTenn, 2011). The development will consist of compact, medium to high profile buildings which either individually or collectively provide a mixture of uses and offer a pedestrian-oriented environment at grade (FoTenn, 2011).

A mixed-use development incorporating retail, restaurant, hotel, and employment uses is proposed for the site. More specifically, the east half of the subject lands is planned for a 31,587 m<sup>2</sup> retail outlet mall (Tanger Outlet Centers) located north of Feedmill Creek as well as 2,230 m<sup>2</sup> of restaurants and a 200-room hotel located south of Feedmill Creek.

The 1-2 storey retail mall buildings are oriented internally to the site, creating a pedestrian concourse/outdoor shopping mall linked with some building features and projections for weather protection. Parking is located and distributed along the perimeter of the property, reinforcing the central portion of the property as the focus of pedestrian activity. Approximately 1,963 parking spaces are provided for the retail outlet mall (FoTenn, 2011). The number of parking spaces reflects the vehicular-orientation of the outlet use (regional scale retail) and location abutting Highway 417, a highly visible transportation corridor. Two full-movement access drives, with future signalization, are provided to Campeau Drive (north) and Street No. 3 (Palladium Drive) to service the retail outlet mall (Blocks 12, 13, and 21 on the Plan of Subdivision). Block 13, located south of Feedmill Creek, will be accessible via a vehicular and pedestrian bridge over the creek from the retail outlet mall lands. Additional right-in/right-out access is proposed to Huntmar Drive. The 3.78 hectare Block will accommodate a three storey hotel and two free-standing restaurants. A total of 558 parking spaces are provided to service the hotel and restaurants.

The western half of the subject lands will accommodate an office/industrial park with up to approximately 92,903 m<sup>2</sup> of space developed over a 10-year horizon starting in 2015. Each of the development blocks within the office/industrial park will be developed by way of independent Site Plan Control applications which address building placement, lot access, parking, and landscaping.

Full municipal services will be utilized. It is anticipated that full build-out of the development will occur by late 2019 (FoTenn, 2011).



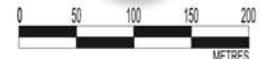
2011 airphoto base from City website

**Legend**

- Site
- Recommended Palladium Interchange UNA Boundary
- General areas of woody vegetation retention
- Feedmill Creek Corridor and Setback
- Vegetation communities

**Vegetation Communities**

- ① Cultural meadow/agricultural field
- ② Cultural thicket
- ③ Cultural woodland
- ④ Deciduous hedgerow
- ⑤ Fresh-moist poplar deciduous forest
- ⑥ Willow thicket
- ⑦ Fresh-moist cedar coniferous forest
- ⑧ Meadow marsh



Approx. Scale 1:6,400

September 2, 2012 FILE: 08-35

**Map 2**

Prepared for: **West Ottawa Land Holdings Co-Tenancy**

Prepared by:



Muncaster  
Environmental  
Planning Inc.

**PROPOSED CONSERVED VEGETATION**  
**KANATA WEST MIXED USE DEVELOPMENT**  
**CITY of OTTAWA**

## 5.0 POTENTIAL IMPACTS

The potential impacts of the proposed development considered critical to the local natural system were scoped from features identified in the review of existing information, including the features identified in the Queensway North Natural Area and field visits to the site and adjacent lands.

### 5.1 Terrestrial and Wetland Habitats

The Feedmill Creek corridor in the west half of the site represents the least disturbed terrestrial habitat on the site, with older trees and some wetland habitat adjacent to the Creek. The Feedmill Creek corridor will be retained and protected as part of the mixed-use development. The protected corridor, including the setbacks described below is shown in orange on Maps 1 and 2. The corridor width will at least meet and usually be greater than the seventy metres recommended by City of Ottawa (2009), with a width in the range of 70 – 110 metres. The corridor width was established as thirty metres on either side of the normal high water mark or 15 metres from the top of slope, whichever is greater. The normal high water mark and the top of slope were staked in the field by Stantec Consulting and Mississippi Valley Conservation. Based on the plans by Paterson (2012) the limit of hazard lands is between 6 and 13.9 metres from the top of slope. Thus the proposed corridor width of a minimum 15 metres from top of slope will exceed the geotechnical limits. Although the corridor width was based on hydrologic features the recommended corridor will also provide protection for the Urban Natural Area and terrestrial features along the corridor.

A portion of the Urban Natural Area boundary falls outside of the corridor including the setback in the west portion of the site along the single loaded road and a stormwater management facility west of Palladium Drive. This portion of the Urban Natural Area is dominated by younger trees and shrubs, with scattered larger trees. Site alterations within this outer portion of the Urban Natural Area are not anticipated to have a detectable impact on the features and functions of the balance of the Urban Natural Area.

The on-site forests and thickets outside of the Feedmill Creek corridor are young and are regenerating on former agricultural land. This woody vegetation will generally be removed, although a setback can be retained along the west site edge. A minimum five metre setback will provide a buffer to adjacent lands. As an access trail is along the central and north portions of the west edge (Photo 15) increasing the belt of retained trees to the range of 15 metres, as shown on Map 2, at the site planning stage will provide additional tree and local wildlife habitat. The potential for indirect impacts on woody vegetation to the west of the site is greatly reduced as no vegetation will be removed in immediate proximity to the forests to the west of the site. As the maximum size of the trees on and to the west of the west site periphery is in the range of 40cm dbh, the five metre setback is anticipated to provide the required protection for the critical root zones of these trees (the setback is greater than ten times the diameter of the trees). Forest interior habitat is absent from the site, however potential forest interior habitat is to the west of the south half of the west site edge. Increasing the belt of retained trees to 15 metres along the west edge will assist in the protection of the adjacent forest. Where trees are not present in this

setback the thicket habitat should be allowed to further naturalize.

Trees along the north site boundary will be removed to accommodate the extension of Campeau Drive, with half of the new roadway on this site and half on the site to the north.

Although the Feedmill Creek corridor is not forested in the east portion of the site, scattered mature white cedars and other trees will be retained within the protected corridor. Portions of the Feedmill Creek corridor in this area are identified as *Significant Valleylands*. The corridor setback identified above will extend 15 metres from the top-of-slope and thus will provide protection for the valleylands as well. Additional plantings of native trees and shrubs, as discussed in Section 6, will add to the features and functions of these open valleylands.

Protection of the Feedmill Creek corridor will achieve a major objective of the Carp River Watershed/Subwatershed Study, including establishment of an environmental corridor along Feedmill Creek. In addition, most of the central and east portions of the site are currently identified as a Priority One and Two Areas in the CRWSS for point source nutrient management. Removal of agricultural activity from these areas and the implementation of proper stormwater management and best management practices are anticipated to improve the water quality entering Feedmill Creek.

A small cultural woodland dominated by Manitoba maples will be removed to the north of the corridor, in the northeast portion of the site.

The closest off-site wetland habitat is to the south of the site, south of the Highway 417 corridor. As this wetland habitat is upstream of the site on the Feedmill Creek corridor and separated from the site by the Highway 417 corridor, no impact on this wetland habitat to the south is anticipated. Given proper stormwater management and other best management practices no impacts are anticipated on this or other off-site habitats.

## **5.2 Aquatic Habitat**

As indicated above Feedmill Creek will be protected within a corridor between 80 and 100 metres in width. Feedmill Creek runs through the entire length of the southern half of the subject lands. This stream corridor is a significant ecological feature which provides aquatic habitat as well as aesthetic and social benefits. More uniquely, Feedmill Creek has sensitive cool water habitats and contributes significantly to the Carp River baseflow. The corridor designation includes the Creek, the stream valley banks on either side of the Creek and an additional setback in the range of 15 metres from top-of-slope. This corridor will protect and allow for restoration of the existing vegetation, aquatic habitat and water quality of the Feedmill Creek corridor.

A slope stability analysis was completed for the valley corridor walls of Feedmill Creek by Paterson (2012). The majority of the slope face is grass covered with minor surficial erosional activities noted by Paterson (2012). Of six slope cross-sections studied as the worst case scenarios by Paterson (2012), the factor of safety was found to be greater than 1.5 for five of the sections analyzed under static conditions, with a stable slope allowance of 2.9 metres required

for a cross-section on the west side of Palladium Drive. In this location the 30 metre setback from the normal high water mark will be greater than the erosion allowance. Paterson (2012) concluded that the majority of the Feedmill Creek slope, including portions in proximity to the proposed stormwater management ponds, is stable.

As discussed in Section 6 there will be a road crossing of Feedmill Creek in the southeast portion of the site. An additional limited access to the southeast portion of the site will be directly off Huntmar Drive. This access will be south of the Feedmill Creek corridor. Access to the lands to the east of the site, east of Huntmar Drive, is required off Huntmar Drive south of Feedmill Creek. Due to sight line requirements along Huntmar Drive associated with the Highway 417 overpass this access, although south of the top-of-slope, will be within 30 metres of the normal high water mark.

Stormwater management measures outlined in the Conceptual Stormwater Management Report will be designed to ensure that the development can proceed without adversely affecting downstream receiving watercourses in terms of water quality, base flows or peak flow rates. Best management practices identified in Section 6.3 will ensure that the aquatic habitat of Feedmill Creek will not be impacted. Stormwater management ponds will be north of the Feedmill Creek corridor west of Palladium Drive and Huntmar Drive, as shown on Map 2.

Existing dug channels in the central-west, which do not support aquatic habitat, will either be utilized as part of the surface drainage plan or re-routed and allowed to naturalize. A tributary of Feedmill Creek in the east portion of the site was examined in early spring, 2010. The slope of the channel precluded any retained water within the channel more than two metres from the confluence with Feedmill Creek and this channel does not appear to support fish habitat more than two metres from Feedmill Creek. The poorly defined upper, north, portion of this channel will be removed. The West Tributary is proposed to be realigned as shown on Map 2. Fish sampling in the spring of 2012 did not net any fish in this tributary.

The channel immediately to the north of the site will also be removed as part of the extension of Campeau Drive. Permitting for removal of some of these channels in the west portion of the site may be required from Mississippi Valley Conservation.

## **6.0 MITIGATION MEASURES AND RECOMMENDATIONS**

This section outlines recommendations to minimize potential impacts to the natural environment features within and adjacent to the site.

This section also provides a Tree Conservation Report and further addresses the Design with Nature concepts. The Design with Nature concept encourages ways to maintain and use the natural features of the site.

### **6.1 Tree Conservation Report**

The field surveys and this report were completed by Bernie Muncaster, who has a Master's of

Science in Biology and over twenty-three years of experience in completing natural environment assessments. The purpose of this Plan is to establish which vegetation should be retained and protected on the site. The site is owned by West Ottawa Land Holdings Co-Tenancy. As described in Section 4, proposed uses for the site include mixed use (entertainment, leisure, retail and service use) on the east half of the site and office and light industrial uses on the west half. The woody vegetation not identified in this report for retention will be removed as each block is developed.

Retention of healthy trees and regenerating tree stems will be done along the Feedmill Creek corridor and at the rear of the Blocks. Tree retention will assist in providing a future source of seeds and regenerating stems. Tree retention is to be maximized as much as possible at the rear of Blocks 1, 2 and 3 and the south portion of the building envelopes on Blocks 7 and 8. This will protect the natural features to the west of the site and maximize the extent of the Urban Natural Area, respectively. As Paterson (2012) indicate that grade raises between 0.5 and one metre are anticipated for the site, retention of woody vegetation in proximity to the new road network and buildings, such as the cultural woodlot in the northeast corner of the site, is not possible.

The green lens colouring on Map 2 shows the areas of woody vegetation retention. These areas include the least disturbed forests on the site, along the Feedmill Creek corridor. Scattered mature white spruce, white cedar, white birch and willow trees are in the corridor, along with a range of red maple, sugar maple, red ash, white ash and white elm tree sizes.

The tree retention can be enhanced through employing the following additional mitigation measures:

- minimizing the extent of vegetation removal as much as possible;
- pruning of branches on trees to be retained to improve their condition and anticipated longevity; and,
- close cutting of existing vegetation during clearing, as oppose to grubbing, to encourage re-vegetation where woody vegetation removal is required for access or work areas only and no re-grading is required.

The trees and belts of trees to be retained and their associated critical root zone are to be protected by placing sturdy fencing along the dripline of the protected vegetation. The fencing is to be installed a minimum distance of ten times the tree diameter from the tree trunk or the outside dripline edge, whichever is greater. No grading or activities that may cause soil compaction such as heavy machinery traffic and stockpiling of material are permitted within the fencing. No machinery maintenance or refuelling, storage of construction materials or stockpiling of earth is to occur within five metres of the outer edge of the dripline of the trees to be retained and protected. The existing grade is not to be raised or lowered within the fencing and no digging is permitted within the fencing. The root system, trunk or branches of the trees to be retained must not be damaged. Exhaust fumes from all equipment during future construction

will not be directed towards the canopy of the retained trees. If any roots of trees to be retained are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth or woodchips and kept moist until the roots can be buried permanently. Signs, notices or posters cannot be attached to any trees to be retained.

As part of the landscape plan for each Block the developers are encouraged to plant a mix of native species such as sugar maple, red maple, tamarack, white spruce, white cedar, red oak, bur oak, bitternut hickory and basswood. Due to the clay soils tree and shrub species that have a high water demand are generally not recommended. These species include willows, poplars and elm.

As indicated above, the vegetation not identified for retention and protection may be removed as individual Blocks are developed. To protect breeding birds, no tree or shrub removal should occur between April 15<sup>th</sup> and July 31<sup>st</sup>, unless a nesting survey conducted within five days of the woody vegetation removal identifies no breeding activity.

## **6.2 Feedmill Creek and Stormwater Mitigation**

Feedmill Creek will be directly protected with a corridor width between 70 and 110 metres. This is consistent with and generally greater than the 70 metre corridor width recommended by City of Ottawa (2009). Based on the plans by Paterson (2012) the limit of hazard lands is between 6 and 13.9 metres from the top of slope. Thus the proposed corridor width of a minimum 15 metres from top of slope will exceed the geotechnical limits. Other than the road crossing of Feedmill Creek in the east portion of the site there will be no on-site intrusions into the corridor including the 30 metre high water or 15 metre top of slope setback. The plan has been modified to have both stormwater management ponds outside of the corridor.

IBI Group (2010) has prepared a joint Conceptual Site Servicing Plan, Stormwater Management Plan, and Erosion and Sediment Control Plan in support of the proposed development. The report includes an assessment of the collection and treatment of stormwater runoff, including stormwater mitigation in the form of Best Management Practices.

The two stormwater management ponds will provide enhanced water quality control, including 80 percent total suspended sediment removal and some water quantity control during operation of the developments. The stormwater management ponds will be designed to maximize wetland features and a variety of habitats and thus is seen as an enhancement for the Feedmill Creek corridor relative to the current agricultural lands.

A series of minor storm sewers will be installed to convey site flow to the stormwater management facilities. The sewers will range in size from 600 mm diameter to 2250 mm diameter (IBI, 2010). As recommended in the Kanata West Master Servicing Study (Stantec/IBI, 2006) major runoff from the site will be routed to Feedmill Creek and IBI (2010) identifies three locations for this overland flow. The stormwater management facilities have been designed to release flows back into Feedmill Creek to pre-development levels.

Roof leaders should be directed to grassed and natural areas to promote infiltration and reduce surface runoff.

TSH (2005) describes local bank treatment as restoration treatments for the reach in the east portion of the site. Two areas of bank treatment are identified, downstream of the Highway 417 westbound off-ramp culvert and upstream of the Huntmar Drive culvert. The bank treatments include bioengineering bank stabilization, riparian plantings and grading of banks to a stable slope.

Pathways will be provided in the east portion of the site to link public street sidewalks, internal green space and the internal pedestrian circulation system. No pathways will be constructed west of Palladium Drive. Will stable conditions permit a pathway will run within the Feedmill Creek corridor. Otherwise the pathway will be confined to the private lands north of the corridor.

Section 6.3 describes the erosion and sediment control practices to be employed to protect the creek during construction.

Approvals will be required from Mississippi Valley Conservation for the road crossing of Feedmill Creek in the southeast portion of the site. Photo 14 below shows a preferred crossing location that would minimize the removal of woody vegetation in the approaches to the crossing. The crossing would also need to avoid, relocate or replace the plantings and other stream enhancement measures completed along this reach of Feedmill Creek. The road and associated culvert should be as narrow as possible to minimize potential impacts on the creek habitats.



*Photo 14 – Approach for proposed road crossing of Feedmill Creek in east portion of site.*

*Crossing location selected to avoid trees to west and east.  
View looking north from south side of creek*

In addition to the above mitigation measures, any creek crossing is to employ the following mitigation measures:

1. timing - all in-water work should be completed between July 1<sup>st</sup> and September 15<sup>th</sup> and must be completed outside of the more sensitive period for spawning and rearing of March 15<sup>th</sup> to June 30<sup>th</sup>. The summer period is recommended due to generally reduced flow, decreased potential for sediment input and the greater growing season afforded for re-vegetation of disturbed areas. If the proposed timing of the work is to take place between October 15<sup>th</sup> and March 15<sup>th</sup>, it will be necessary to have all exposed areas along the banks to be covered with erosion control blankets to keep the soil in place and prevent erosion from occurring during the spring freshet time period;
2. culvert installation and any other in-water work will not be initiated when flows are elevated from local rains, storm events or seasonal floods, or when significant rains are forecasted;
3. where feasible the culvert installation should be completed in the dry by de-watering the work areas as required and pumping flows around temporary cofferdams of clean shot rock, sandbags or steel plates placed at the limits of the work area. Any fish trapped within the isolated work areas must be safely relocated downstream outside of the enclosed areas. Dewatering from the work areas will be treated in a sediment trap or similarly effective sediment control prior to downstream release. Fish screens are required on all pumps to ensure forage fish are not impinged. Silt or debris that has accumulated around the temporary measures must be removed prior to their withdrawal;
4. the installed culvert is to be embedded a minimum of ten percent;
5. the bed of the watercourses and banks will be stabilized with clean rock protection erosion control one metre upstream and downstream of the culvert after installation. Smaller and rounded material will be placed over the larger rock protection to provide more habitat utilization potential. It is very important that the rock protection be placed at an elevation that will not create a potential barrier to fish movement during low flow periods;
6. all material to be placed in the watercourse is to be clean and free of fines. Pieces of large and small woody debris from the culvert area should be salvaged and redeployed in other sections of Feedmill Creek;
7. erosion and sediment control measures are critical component of the culvert installation. Effective sediment and erosion control measures are to be maintained until complete re-vegetation of disturbed areas is achieved. Prior to any in-water work a rock flow check

dam, with a sediment trap immediately upstream of the flow check, must be installed downstream of the work area.

8. additional mitigation measures to minimize the potential for inputs of sediments and other contaminants into the watercourse and the environment in general include proper maintenance on construction equipment with respect to refuelling, washing and fluid changes, and proper disposal of fluids, filters and other waste materials; and,
9. monitoring is to be completed at all times and any water quality issues such as elevated turbidity levels be address immediately with cessation of work until proper sediment and erosion controls are in place.

### **6.3 Erosion and Sediment Controls and Monitoring**

An erosion and sediment control plan will be prepared as part of the detailed design package. During construction, existing stream and conveyance systems can be exposed to significant sediment loadings. The following mitigative construction techniques will be deployed to reduce as much as possible sediment loadings during construction:

- Although little groundwater is expected during construction of municipal services, groundwater will be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to release to the environment. The treated discharge will be directed away from the Feedmill Creek corridor;
- Bulkhead barriers will be installed over the lower half of the outletting sewers to reduce sediment loadings during construction. The barriers will captured sediment laden flows;
- Seepage barriers such as silt fencing, straw bale check dams and other sediment and erosion control measures will be installed 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; and,
- Filter clothes will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use and the surrounding landscape is stabilized.

A qualified inspector will conduct frequent visits during construction to ensure that the contractor is constructing the project in accordance with the design drawings and mitigation measures are being implemented and maintained as specified. Bulkhead barriers, filter clothes on open surface structures and silt fencing may require removal of sediment and repairs. The inspector must ensure that construction vehicles and chemicals, fuels and other potentially hazardous materials remain in designated areas.

After build-out of each Block, applicable sewers will be inspected and cleaned. All sediment and construction fencing should be removed following construction, providing there is no exposed soil or other potential sources of sedimentation.

### Feedmill Creek Corridor

It is very important that the integrity of the Feedmill Creek corridor habitat be maintained during adjacent construction. In addition to the construction fencing to protect the vegetation, silt fencing will be placed along the rear of work areas adjacent to the corridor. No activity will be permitted on the corridor side of the fencing except for the road crossing of the creek.

Silt fencing will also be placed around the work areas, and adjacent to any temporary swales and around stockpiles. Straw bale check dams and other sediment and erosion control measures will be installed as required downstream of disturbed areas and within temporary swales. These control measures must be properly maintained to maximize their function during construction. Stockpiles of cleared materials as well as equipment fuelling and maintenance areas will be located away from the Feedmill Creek corridor, swales and other conveyance routes.

All sodding, seeding and tree and shrub planting are to be conducted correctly and as soon as weather and construction activity permits. The success of all vegetative plantings will be assessed for two years through visual inspections in the spring and autumn following planting. Any plantings that are dead or dying will be replaced.

## **7.0 SUMMARY**

The site, located in the west portion of the urban area of the City of Ottawa north of Highway 417 and west of Huntmar Drive, is proposed for a mixed use development including an outlet mall, hotel and restaurants on the east half of the site and office and light industrial uses on the west half. The majority of the site is an active corn fields, with the Feedmill Creek corridor the dominant natural heritage feature in the vicinity of the site. The natural features and functions of the thicket and young forest habitats outside of the corridor are limited by fragmentation, young age, historical agriculture and abundance of non-native flora, including a dominance of the invasive buckthorn in many areas.

All the community/landform types and flora and fauna species observed on the site are considered common on a local and regional basis. No Species at Risk, species of special concern or other rare species, significant woodlands, rare communities, significant wetlands, steep slopes were observed on or adjacent to the site. Based on the habitat requirements and field observations no Species at Risk are anticipated on the site.

An environmental corridor will be established along Feedmill Creek, implementing an important recommendation of the existing studies. The corridor width to be retained meets and in many areas exceeds the recommendations of the subwatershed and restoration studies. The environmental corridor will also protect the significant valleylands identified in the east portion of the site. In addition to the Feedmill Creek corridor, woody vegetation will be retained along the west edge of the site. This will provide protection for the natural areas to the west of the site

in addition to local wildlife habitat and the many environmental and aesthetic benefits that trees provide. Minimizing the work areas and careful siting of the building envelopes will allow for other tree and shrub retention on the site, although grade raises in many areas will prevent tree retention and Campeau Drive will be extended along the north edge of the site.

This EIS identifies many important mitigation measures for the woody vegetation and associated wildlife habitat to be retained and protected. The EIS concludes that the construction and operation of the proposed mixed-use development will not have a significant impact on the natural heritage features and functions of the site, including the Feedmill Creek corridor and Palladium Interchange Urban Natural Area. The following is a numbered summary of the main mitigation measures:

1. Retain the Feedmill Creek corridor and other on-site vegetation as shown in green shading on Map 2;
2. Careful siting of the building envelopes on the Blocks to further increase tree and shrub retention at the individual Block lot development stage;
3. Protect woody vegetation to be retained with sturdy fencing at least 1.2 metres in height prior to any site alterations. See Section 6.1 for further measures to protected the adjacent retained vegetation during construction;
4. Woody vegetation that must be removed is to be cut outside of the breeding bird period of April 15<sup>th</sup> to July 31<sup>st</sup> unless a breeding bird survey identifies no nesting activity within five days of the proposed vegetation removal;
5. The culvert for the crossing of Feedmill Creek in the southeast portion of the site is to be wide enough to accommodate the banks of the creek, with the length as short as possible. The culvert is to be installed outside of the more sensitive aquatic habitat periods, with the mitigation measures described in Section 6.2 properly implemented;
6. Proper sediment and erosion control, as outlined in Section 6.3 is very important for the protection of the Feedmill Creek corridor and other environmental features. These measures must be monitored and properly implemented; and,
7. Stormwater management ponds will protect the water quality and quantity entering Feedmill Creek during operation of the mixed-use development.

## **8.0 REFERENCES**

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**APPENDIX A**

**MINISTRY of NATURAL RESOURCES  
CORRESPONDENCE**



**Ministry of Natural Resources**

Kemptville District  
P.O. Box 2002  
10 Campus Drive  
Kemptville, ON K0G 1J0

Tel.: (613) 258-8470  
Fax.: (613) 258-3920

**Ministère des Richesses naturelles**

District de Kemptville  
CP 2002  
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Tél.: (613) 258-8470  
Télééc.: (613) 258-3920

April 27, 2009

Muncaster Environmental Planning Inc.  
491 Buchanan Crescent  
Ottawa, ON K1J 7V2

Attention: Bernie Muncaster

**Subject: Information Request for Hwy 417 and Huntmar  
Our File No. 2009\_HUN-370**

The Ministry of Natural Resources (MNR) Kemptville District has carried out a preliminary review of the area in order to identify any potential natural resource and natural heritage values in the area.

Following a review of natural heritage values and data, it has been determined that the Provincially Significant Stittsville Wetland Complex is located in the immediate area. No Areas of Natural and Scientific Interest are located in the area. A licence aggregate operation is located adjacent to the site. Furthermore, the MNR's data shows no known nesting sites in the area, however the wooded areas located on site natural habitat and there is also the potential for butternut (an endangered tree species) to be present.

The City of Ottawa is responsible for identifying and protected Significant Woodlands, Significant Wildlife Habitat and Significant Valleylands in their Official Plan; the Ministry of Natural Resources recommends contact the City of Ottawa in this regard.

With regard to Feedmill Creek data, the Ministry of Natural Resources files contain a *Proposed Fish Habitat Compensation Approach* (1994) and Stream Survey Overview from 1993. You are welcome to come and copy any information from our creek file; a time would have to be set up to ensure that a biologist was in the office. In addition, electroshocking survey data from 1993 indicate the following species found: Bluntnose, Dace spp., White Sucker, Stickleback spp., Mudminnow, Shiner spp., Fathead, Logperch, and Molted Sculpin.

In order to protect surface water features on site (i.e., creek), best management practices related to sedimentation and turbidity (e.g., erosion controls, sediment traps, staging work etc.), as well as contamination through runoff, spills, leaks etc. (e.g., check dams, spill controls and containment, stockpile setbacks etc.) should be implemented. These controls and other measures should be monitored daily and maintained as necessary to ensure they are functioning properly.

With the new Endangered Species Act (ESA, 2007) in effect, it is important to understand which species and habitats exist in the area and the implications of the legislation. A review of the Natural Heritage Information Centre and internal records indicate that there no known element occurrences for species at risk occur in the area.

Although this data represents the MNR's best current available information, it is important to note that a lack of occurrence at a site does not mean that there are no Species at Risk (SAR) at the location. The MNR recommends carrying out an ecological site assessment to determine the potential for other SAR occurrences. When a SAR does occur on a proposed site, it is recommended that the proponent contact the MNR for technical advice and to discuss what activities can occur without contravention of the Act. If an activity is proposed that will contravene the Act (such as Section 9 or 10), the proponent must contact the MNR to discuss the potential for application of certain permits (Section 17) or agreement (Regulation 242/08). For specific questions regarding the Endangered Species Act (2007) or species at risk, please contact Species at Risk Biologist, Paula Norlock at [paula.norlock@ontario.ca](mailto:paula.norlock@ontario.ca).

Sincerely,

A handwritten signature in black ink that reads "Laura Melvin". The signature is written in a cursive style with a horizontal line at the end.

Laura Melvin  
Resource Management Planner  
[laura.melvin@ontario.ca](mailto:laura.melvin@ontario.ca)