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P07
1325 696

December 2, 2009

Planning and Economic Development Committee
Regional Municipality of York
17250 Yonge Street
Newmarket, ON.
L3Y 6Z1



Attention: Chair and Members of the Committee

Dear Chair and Members,

Re: Draft Regional Official Plan
The Mandarin Golf and Country Club Inc. [Mandarin] (pts of Lots 28 and 29, Conc. 6, Markham), AV Investments II Inc. [AV] (Pt of Lt. 28, Conc. 6, Markham)

This submission is addressed to you on behalf of my clients, The Mandarin Golf and Country Club Inc. ('Mandarin') and AV Investments II Inc. ('AV'), the owners of the lands described above and illustrated in the following aerial photo:

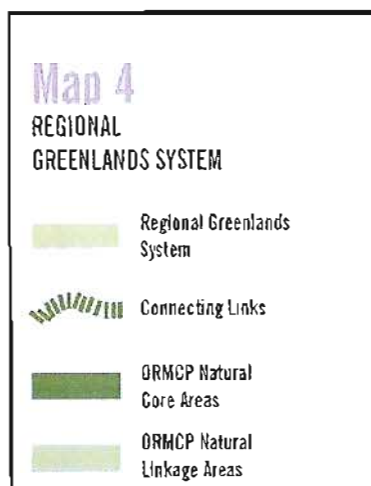


The purpose of this letter is to table facts and expert opinion of which you may or are not aware and to request that the land use policies applicable to the Mandarin and AV lands be maintained, in substance, in their current form, and not make the change contained in the official plan draft which is recommended for approval. The change, described below,

is without logic or merit but will have an unjustified impact on the landowners rights and interests.

The lands are designated in the Agricultural Area in the present, approved, Official Plan. Notably, as the excerpts below demonstrate, no part of the lands is identified as having significant natural features or Greenlands characteristics.

CURRENT ROP



The Mandarin lands are carved, vegetated, groomed, and maintained for their long-standing purpose as an internationally recognized championship golf course. The AV lands are 100 % devoted to agriculture (cultivation). The photo below demonstrates the featureless nature of the AV lands.

View looking west from McCowan Road



The Mandarin lands and the AV lands are both bisected by a drainage channel.

In the case of the AV lands, the channel was dug in the 1950's as part of a tile drainage system installed to improve the productivity of the lands for agricultural purposes. It continues today to serve the same function.

The channel on the Mandarin lands was originally created in the -'70's to early '80's as part of the then owners plan to change swampland to golf course use. It was modified in 1990 for the present course layout. This drainage channel is illustrated by the black line shown on the map below.

Line of man-made drainage ditch



As shown below in the excerpts from the draft ROP (below) a massive portion of the Mandarin lands and virtually all of the AV lands are proposed to be designated 'Greenlands'. The drainage ditches are identified as 'Significant Natural Features'

(permanent and intermittent streams). This is so even though no environmentally sensitive areas or areas of natural or scientific interest are identified on the lands.

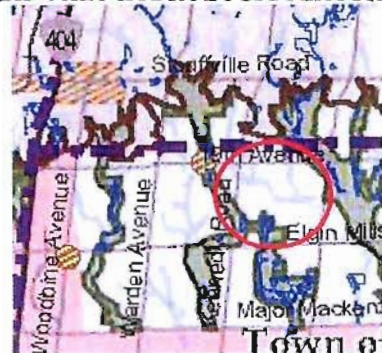
MAP EXCERPTS - PROPOSED ROP
MAP 2 REGIONAL GREENLANDS SYSTEM



MAP 3 ESA AND ANSI'S



MAP 4 KEY HYDROLOGIC FEATURES



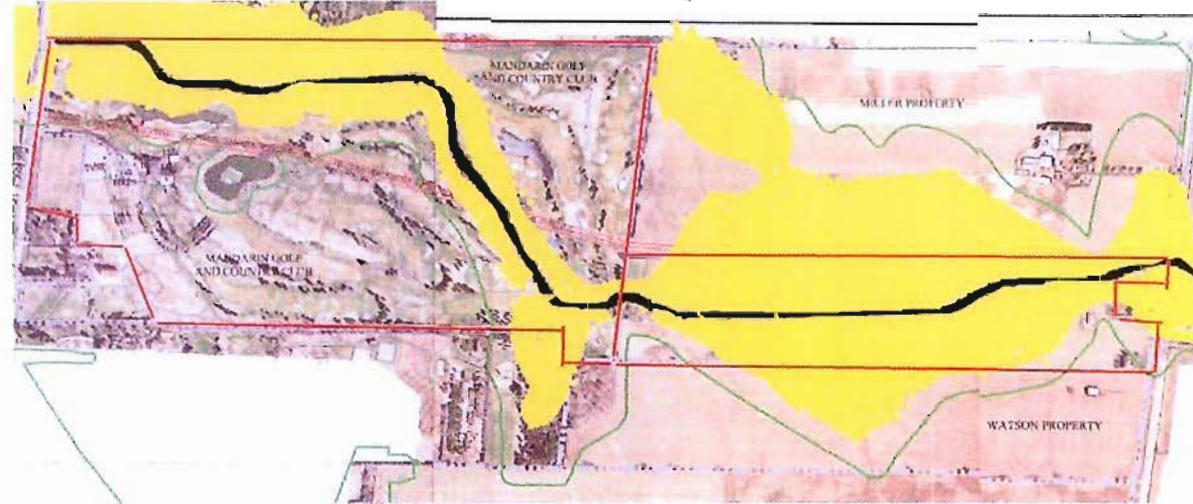
As your staff advised at your October 7, 2009 meeting following the undersigned's presentation, these proposed designations come at the request of the Town of Markham.

In this regard, as I advised your committee at your October 7 meeting my clients had commissioned engineering and environmental studies in response to the Town of Markham's on-going investigation into changing OP designations on the subject lands to create a (presently non-existent) bio-diversity corridor/park.

The report of the environmental consultant is attached to this letter as Appendix A. However beguiling the idea of a green corridor through these lands may be to the uninformed, the report evidences that it is ill-advised. It will have impacts on my client's rights and interests and should not be endorsed.

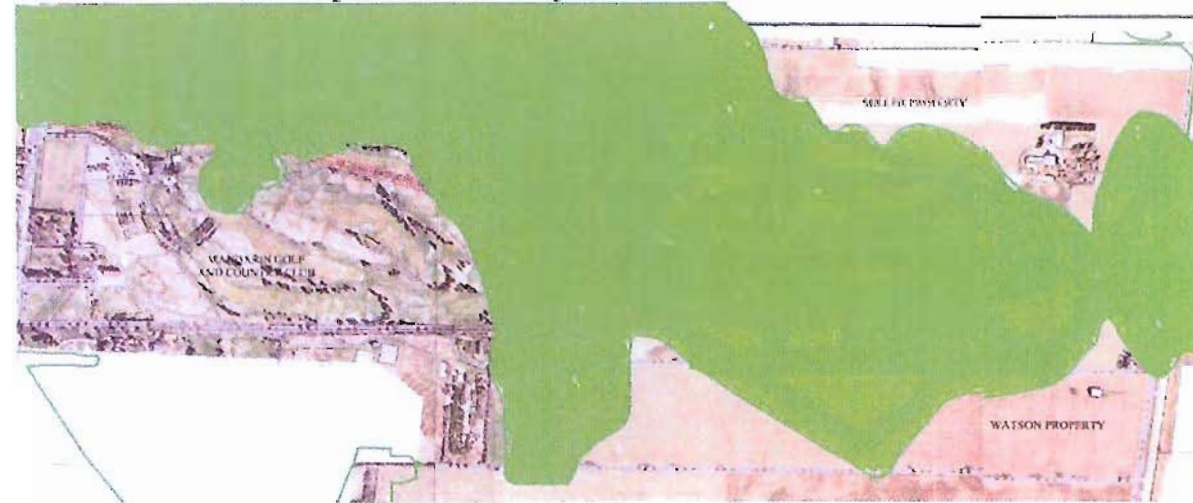
The report of the engineers calculated the limits of the flood for a design storm. Illustrated in yellow below are the limits of these lines (without consideration of engineering solutions to alter them).

Floodlines as calculated by SCS Consulting Group Fall, 2009



The consultants have also identified the limits of the area the Town proposals identify for 'green resignation'. These are shown below. Patently, these lines have no respect for the facts on the ground. For example, 15-20% of the Mandarin golf course is unaffected by conservation authority regulation, yet they are contained with the green redesignation.

Town of Markham Proposed 'Greenway'



Please consider these submissions in consultation with your staff and address changes to prevent the irrational, unjustified redesignations which will have seriously

harmful affects on the landowners interests.

Yours Very Truly,

A handwritten signature in black ink, appearing to read 'Richard R. Arblaster', with a long horizontal stroke extending to the right.

Richard R. Arblaster

Copy to:

The Mandarin Golf and Country Club Inc.
AV Investments II Inc.
Town of Markham

November 23, 2009

BEL 209104

Mr. Don Miller
11270 McCowan Road
Markham, ON L3P 3J3

Messrs. Harry & Murray Lewis
10982 McCowan Road
Markham, ON L3R 3J3

Mr. Trevor Watson
64 Stuart Street
Stouffville, ON L4A 4S4

AV Investments II Inc.
c/o Richard Arblaster
Barrister and Solicitor
7100 Woodbine Avenue, #200
Markham, ON L3R 5J2

The Mandarin Golf & Country Club
11207 Kennedy Road
Markham, ON L3P 3J3
L6C 1P2

Messrs. Harry & Murray Lewis
10982 McCowan Road
Markham, ON L3R 3J3

**Re: Town of Markham Environmental Policy Review (EPR) Letter
for McCowan Road Landowners**

Mr. Trevor Watson
64 Stuart Street
Stouffville, ON L4A 4S4

Dear Sirs:

AV Investments II Inc.

As per the work plan submitted to SCS Consulting Group on June 11, 2009, Beacon Environmental has completed a review of the Town's Draft Environmental Policies and field verified environmental features associated with the subject properties. The properties affected include: Miller, AV Investments II Inc., Watson and Lewis. The Mandarin Golf Club property was included at a later date and will be discussed but field investigations were not conducted on this property. Figure 1 presents the location of each property.

11207 Kennedy Road

This letter report summarizes the findings of our review and provides our professional opinion on the relevance of the proposed Ecological Corridor across the subject lands. Our assessment is outlined in the following sections.

**Re: Town of Markham Environmental Policy Review (EPR) Letter
for McCowan Road Landowners**

144 Main St. North, Suite 206, Markham, Ontario, Canada L3P 5T3
Tel: (905) 201 7622 • Fax: (905) 201 0639

Background Review

The following documents and sources were reviewed for information relevant to the subject lands:

- Official Plan of the Markham Planning Area Amendment No. 140 (OPA 140) Oct. 2005
- Environmental Policy Review & Consolidation Study: Policy Directions and Framework, 17 April 2009, DRAFT for discussion, Town of Markham
- Environmental Policy Review & Consolidation: Background and Policy Framework, 28 Oct 2008, DRAFT (Schollen et al., Oct. 2008)
- Toronto and Region Conservation Authority (TRCA) Terrestrial Natural Heritage System Strategy 2007 and related Appendices E (Evaluating and Designing Terrestrial Natural Heritage Systems) and J (Glossary)
- TRCA Valley and Stream Corridor Management Program 1994
- York Region Significant Woodlands Study (NSE 2005)
- Region of York Official Plan Consolidation, June 1, 2008
- The Region of York's interactive on-line mapping for environmental designations and significant forest (accessed at <http://maps.york.ca/yorkexplorer/default.jsp?GoTo=3> on August 12, 2009)
- Rouge River State of the Watershed Report, TRCA, 2008

The subject lands are situated in the northern part of the Town of Markham. All the lands are outside the Town's current built boundary in the Rouge North Management Area but overlap with both the Middle Reaches and the Little Rouge Creek Policy Areas (as per Schedule J of the Rouge North Management Plan Area in OPA 140, March 2005).

Natural Features

A site visit was conducted on the subject lands on August 11th, 2009 by Ken Ursic (terrestrial ecologist) and Jo-Anne Lane (aquatic biologist) of Beacon Environmental. The purpose of the visit was to verify natural features and general site conditions.

Terrestrial Features

A total of five wetland units and one forest unit were identified on the subject properties. Two watercourses also flow through the properties: Tributary A traverses the AV Investments II Inc. property and Mandarin Golf and Country Club from west to east. Tributary B flows from north to south through the Miller and AV Investments II properties and converges with Tributary A. A map illustrating the various natural features observed on the subject lands is provided in Figure 1. Key observations are summarized according to individual properties in **Tables 1 and 2**.

Table 1. Summary of Natural Features in the McCowan Road Study Area

Property	Map Unit(s)	Feature
Lewis	1	Unit 1 represents a complex of wetland types consisting of Poplar Mineral Deciduous Swamp (SWD 7-1), Dogwood Organic Thicket Swamp (SWT 3-2), and Cattail Organic Shallow Marsh (MAS 3-1). The unit is mid-aged and supports a high diversity of native vegetation species.
Lewis	2,3	These two units represent remnant wetland features situated within an agricultural matrix. Units 2 and 3 are best characterized as Dogwood Organic Thicket Swamp (SWT 3-2) and Cattail Organic Shallow Marsh (MAS 3-1) respectively.
Watson	4	Unit 4 is a Fresh to Moist Ash Lowland Deciduous Forest (FOD7-2) that contains mature to old growth elements and wetland pockets. There is one Endangered plant species (Butternut – <i>Juglans cinerea</i>) and one regionally rare (L3) plant species (Michigan Lily - <i>Lilium michiganense</i>) present.
A.V. Investments II Inc.	5	Unit 5 corresponds with a narrow band of riparian wetland along Tributary A and a short section of Tributary B. Vegetation is best characterized as Reed-canary Grass Mineral Meadow Marsh (MAM 2-2) and Cattail Mineral Shallow Marsh (MAS 2-1).
Miller	6	Unit 6 is part of a larger forested unit that extends north to 19 th Ave. The feature is characterized as a Green Ash Mineral Deciduous Swamp Wetland (SWD2-2). The swamp is mid-aged to mature and supports a number of higher quality native species. Tributary B also flows through this unit and there is evidence of localized groundwater discharge.

In addition to the features listed in Table 1, several hedgerow features are associated with the property boundaries of the properties. A detailed summary of the biophysical attributes of the vegetation units is provided in Appendix 1. A checklist of vascular plant species observed and their TRCA status is provided in Appendix 2. Of the 132 plant species observed, one species (*Juglans cinerea* (Butternut)) is ranked as nationally and provincially Endangered. A single Butternut specimen was observed in Unit 4.

With the exception of the natural features described in Tables 1 and 2, the majority of the properties are comprised of agricultural fields presently cropped in corn, soya, wheat, oats and alfalfa, and also farm buildings.

Aquatic Features

Tributary A and B were observed to be flowing at the time of the survey. Tributary A traverses the Mandarin Golf Club and AV Investments II Inc. properties and Tributary B traverses the Miller and AV Investments II Inc. properties. These two watercourses are tributaries of Little Rouge Creek and are considered part of the headwaters of that system according to the Rouge River State of the Watershed Report (TRCA 2008). Table 2 below summarizes the watercourse features.

Table 2. Descriptions of Watercourses in the McCowan Road Study Area

Property	Tributary	Comments
A.V. Investments II Inc.	A	Channelized watercourse that traverses the property from west to east. Bankfull width approximately 3 metres, average depth 0.5 metres. Bankfull flow observed. Historical record of Endangered Redside Dace upstream.
A.V. Investments II Inc.	B Reach 1	Channelized watercourse that enters property at north end and converges with Tributary A. Channel width approximately 0.8 metres, depth ranged from dry (no flow) to 5 cm.
Miller	B Reach 2	Channelized drainage feature that enters property at north end. Poorly defined channel with width of approximately 1.0 metres, no flow or isolated pools. May provide seasonal fish habitat during high flow and contributes to downstream fish habitat.
	B Reach 3	Flows through Unit 6, meandering, braided channel approximately 0.5-1 metre wide, depth 5-10 cm. Contributes to downstream fish habitat.

The watercourses described in Table 2 represent a significant environmental constraint because of their associated fish habitat functions although both have clearly been realigned in the past. Also, Tributary A functions as an agricultural drain and requires cleaning out every few years. Typically such features are protected by prescribing setbacks to the greater of the floodline, meander belt or valley landform. These watercourses are considered part of the headwaters of the Little Rouge Creek according to the Rouge River State of the Watershed Report (TRCA 2008). A warm water designation has been applied to these watercourses supported by sampling records (Rouge River SOW Report 2008). In addition, one record of the provincially Endangered fish species Redside Dace, has been identified for a location upstream of the Mandarin Golf Course. This capture occurred in 1972 however typically MNR will not release the precise location of the record. The presence of numerous barriers through the Mandarin Golf Club and the channelization of the main tributary removes any potential for this species to inhabit the subject properties.

The presence of a Trans Canada gas pipeline was also identified during the site visit. The pipeline is aligned with the north side of Tributary A running east-west across the AV Investments II Inc. property.

Relevant Policy and Regulations

Certain regulations and policies apply to the natural features identified on the subject properties. Although the implications of each of these policies and regulations would need to be determined in consultation with the relevant authority, these features all represent likely constraints to development.

The following regulations and policies are relevant to the features on these properties:

- Ontario's Greenbelt Plan (2005) requires a 30 m buffer to all Key Natural Heritage Features. Significant Woodlands are considered Key Natural Heritage Features. The

wetland (swamp / marsh) feature (Unit 1) on the Lewis property is contained within the Greenbelt and has also been identified as Regionally Significant Forest, therefore under the Greenbelt Plan no development is permitted within 30 m of this feature.

- Official Plan Amendment (OPA) 140 for the Town of Markham uses the Rouge North Management Plan for guidance in identifying areas for protection in this part of the Town. The lands are considered part of the Middle Reaches Policy Area. The lands subject to the Middle Reaches Study Area includes all lands within 130 metres of the stable top of bank or 130 metres from the centreline of the watercourse where there is no defined top of bank. However, it is our understanding that the lands must be secured in public ownership before these policies can be implemented.
- Habitat for species that are listed as Threatened or Endangered in the Province of Ontario by the Committee on the Status of Species at Risk in Ontario is protected under the Province's *Species at Risk in Ontario Act*. The forest feature (Unit 4) on the Watson property contains Butternut, an Endangered tree species. The precise limits of the required habitat would need to be confirmed with OMNR.
- Habitat for Redside Dace would also be subject to the Province's *Species at Risk in Ontario Act*, however habitat on site is not present therefore the *ESA* would not likely apply. This would need to be confirmed with MNR.
- The swamp feature (Unit 6) on the Miller property is identified as Regionally Significant Forest and must be protected under the Region of York's Official Plan policies.
- Ontario Regulation 166/06 – Regulation of Development, Interference to Wetlands and Alterations to Shorelines and Watercourses. The Toronto and Region Conservation Authority (TRCA) regulates hazard lands, including creeks, valleylands, shorelines, and wetlands (TRCA 2006).

Generally, development within the flood limit of a watercourse is not allowed. However, subject to conformity with the OP and completion of appropriate studies and Conservation Authority permits, some development *may* be permitted within the fill constraint area. The TRCA generally requires that all watercourses stay in their natural state with respect to development proposals. The definition of a watercourse generally captures any feature that is an identifiable depression in the ground in which a flow of water regularly or continuously occurs, regardless of the drainage area. (TRCA 2006).

The TRCA generally requires that all watercourses be protected from adjacent development by a vegetative buffer. The buffer will be up to 15 metres measured from the distance outside the edge of the maximum extent of the floodplain under the applicable flood event standard or the distance from the predicted meander belt of a watercourse under the applicable flood event standard or stable top of bank.

The remainder of the lands are situated within what is referred to as "Whitebelt lands". Whitebelt lands are currently outside the Greenbelt and also outside the Town of Markham urban boundary.

The Whitebelt lands are considered to have development potential although any development would require an extension of the urban boundary.

Environmental Policy Review and Consolidation Study

The Town has released two reports (both still in draft form) related to their environmental policy development: (1) *Environmental Policy Review & Consolidation: Background and Policy Framework* by Schollen *et al.* Oct. 2008 and (2) *Environmental Policy Review & Consolidation Study: Policy Directions and Framework* by the Town of Markham April 2009. The first report provides the ecological context and rationale for the policy direction, while the second provides the specific draft policies that are being recommended for the Town based on the background report, as well as some refinements based on input received on the original report.

The mapping referred to in this report will be what is presented in Maps 2 and 3 of the more recent Draft Environmental Policy Review and Consolidation Study (April 2009). This report presents a Natural Heritage Network (NHN) for the Town with the following components:

- A Greenway system (based on the various data sources shown in the Natural Heritage and Hydrological Features and Policy Areas Map 3)
- Enhancement Areas
- An Ecological Corridor

How the overlays for these different components affect the subject properties is shown in Figure 1.

On the subject properties, the Town's Draft Greenway mapping extends well beyond the actual physical limits of the natural heritage features described above and illustrated in Figure 1. This is because the Greenway has been mapped by incorporating mapping/data layers obtained from a variety of sources (i.e., the TRCA, the Town, York Region and the Province of Ontario) with variable levels of accuracy. All of these data layers should be field verified at the site specific level.

For example, in addition to the natural features on these properties mapped in Figure 1, the Draft Greenway captures agricultural lands on nearly all of the AV Investments II Inc. property and substantial portions of the Watson and Miller properties. This appears to be because these areas include "Estimated Floodplain" (mapped by the TRCA) (shown in Figure 1) and "Future Rouge Park" (mapped by the Town) associated with the watercourses on site. The criteria and measures used for this mapping are not clear.

The Draft Greenway (NHN) mapping also includes a broad east-west Enhancement Area and a conceptual Ecological Corridor that extends over the Watson, AV Investments II Inc. and Miller properties. These two components encompass the actual natural heritage features described in Tables 1 and 2, but also include the "Estimated Floodplain" and "Future Rouge Park" mapping, as well as additional lands (particularly on the Watson Property) that are under active agricultural cultivation.

The rationale cited for the Enhancement Area and Ecological Corridor is to create a 200 m wide terrestrial corridor between Berczy Creek and the headwaters Little Rouge Creek. However, the

ecological rationale for such a corridor in this location appears to be weak, as discussed in the following section, and should be reviewed with the Town.

Discussion and Opinion

Based on the field investigations and background review, the subject properties support a number of environmental features that meet ecological criteria warranting their inclusion in the Town's Natural Heritage Network / Greenway mapping. However, the Greenway mapping and related Enhancement Areas / Ecological Corridor also include a number of areas beyond these features, in our opinion, without ecological justification.

All the features listed in Tables 1 and 2 and identified in Figure 1 will require some level of protection, or mitigation, to be consistent with existing local, regional and provincial environmental planning policies, as described in the section on relevant policies and legislation above. While the features on the Lewis property falling under the Greenbelt Plan will require a minimum buffer of 30 m, buffers to the other features (if they are to be protected) will need to be determined through an Environmental Impact Study and in consultation with the TRCA, Region and the Town.

Areas identified in addition to the areas listed above on the Town of Markham's Draft Greenway mapping (from the Town's April 2009 report) extend far beyond mapping for the approved and designated Provincial Greenbelt and Regionally Significant Forest, and are not reflective of the actual ecological constraints on these properties. The key issues related to these additional lands that have been included in the Draft Natural Heritage Network are: (1) the Estimated Floodplain mapping, (2) the Future Rouge Park mapping; and (3) the east-west Enhancement Area / Ecological Corridor mapping across the subject lands. These are each discussed in further detail below.

Estimated Floodplain (TRCA)

The "Estimated Floodplain" mapping deviates considerably from the "Existing Floodplain" and is the primary basis for ascribing "Greenway" to extensive areas of active agricultural fields on the subject lands. It is our understanding that SCS Consulting is undertaking an update of the floodline mapping, and so we will defer to their analysis on this matter.

Future Rouge Park Mapping (Town)

Future Rouge Park areas were originally mapped conceptually based on primarily desktop analysis (Rouge North Park Management Plan 2001). However, as stated in the report, the actual boundaries of these lands are meant to be established through the application and interpretation of the boundary delineation criteria¹ screened against field verified existing conditions. Field assessments conducted in August on the subject lands do not support the inclusion of the large section of agricultural field south of the forested wetland and between two tributaries in the western end of the Miller property and the east end of the Mandarin Golf Club on the basis of ecological function.

¹ The Rouge North Management Plan (RNMP) Implementation Criteria are: 1. Watercourses / Existing Regulatory Floodline (i.e., 100 yr), 2. Meander Belt; 3. Valley & Stream Corridor Features; 4. Natural and Riparian Vegetation Communities and Interior Forest, Conditions, 5. Wetlands, Evaluated Wetlands, ESAs, ANSIs & LSAs; 6. Habitats for VTE species (now T - Threatened, E - Endangered and SC - Special Concern); 7. Terrestrial Corridor Habitat Function; 8. Seepage Areas & Groundwater Discharge; 9. Vegetation Community Maintenance Area; 10. Woodland Restoration Requirements; 11. Archaeological & Cultural Heritage Resources

While OPA 140 for the Town of Markham supports using the Rouge North Management Plan for guidance in identifying lands for potential inclusion in the Rouge North Park, it does not automatically consider inclusion of all small streams within the Rouge North Park Area. However, the draft Greenways mapping appears to incorporate all small streams and build them into the Greenways system without determining their ecological value at the site level. Although it is understood that site-specific data cannot usually be obtained for a Town-wide study and that watercourses are typically constrained features that require preservation, these features should at least be assessed on a site-specific basis.

Enhancement Area / Ecological Corridor (Town)

In addition to the areas described above, a 200 m wide Enhancement Area and conceptual east-west Ecological Corridor has been proposed across significant portions of the subject lands. In the Town's recent draft policy direction (April 2009), these areas have been identified to support a 200 m east-west ecological corridor from Little Rouge Creek to Berczy Creek. From an ecological perspective, the location and orientation of this proposed corridor is not justified.

In general, ecological corridors are intended to facilitate the movement of plants and wildlife in the landscape. Typically such corridors are comprised of remnant natural and semi-natural features in the landscape such as hedgerows and successional habitats that can readily be restored to a natural condition to create a continuous linkage. Ecological corridors were described in the original draft policy report (Schollen *et al.* 2008) as additional lands "*required and supported by scientific principles*" to create a sustainable Natural Heritage Network (NHN), and as "*ecological nodes and enhancement areas*" and intended to "*support and enhance*" and "*connect*" the Natural Heritage Network.

However, an evaluation of the historical and present distribution of natural features on the subject properties and adjacent lands confirms that natural features are concentrated centrally on this concession block and form a north-south ecological linkage or corridor extending from Elgin Mills Rd. E at the south to 19th Ave at the north. This established linkage provides the greatest and most logical opportunity for an enhanced ecological corridor across this concession block.

The proposed Enhancement Area / Ecological Corridor is oriented in a southwest to northeast direction and builds on disturbed remnant features (i.e., channelized Tributaries A and B). Furthermore these features are surrounded entirely by active agricultural fields to make a rather long linkage over a main road and through agricultural fields, while overlooking the immediate and more ecologically sound terrestrial linkage potential between wooded units 1, 4 and 6 at the back of the subject properties. The current proposed linkage builds on the degraded Tributary A in an attempt to link Unit 4 to the Little Rouge Creek to the east even though the 1.4 km of intervening lands is almost entirely under active agricultural use. This linkage is disconnected, devoid of natural cover and would provide only limited ecological value.

Furthermore, according to the 2008 report, enhancement areas are intended to be located at "*the point of least separation between the tributary corridors and where existing important features ...can serve as ecological nodes at key points along the connecting corridors*". Based on an analysis of natural features utilization of Tributary A to link the natural features on this site to other natural features to the east would actually represent the greatest point of separation between the tributary corridors which is inconsistent with this scientific objective.

Finally, the Enhancement Areas, which form part of the newly identified Ecological Corridor were originally "*identified only symbolically, their location, size and configuration are not precise, but will be refined through further planning studies*" (p. 45). However, on the draft Greenway mapping these areas are well defined (in dark blue).

The rationale for establishing the east-west Enhancement Area / Ecological Corridor in this location does not adequately consider existing conditions, or respect the Town's own guidelines for identifying linkages. We recognize the value of linkages within the NHN; however they should be situated in areas that provide the greatest ecological value. There are other areas close to the subject lands where natural features already exist and provide better opportunities for establishing connectivity to Little Rouge Creek. These alternate locations should be evaluated.

In summary, key issues that should be reviewed with the Town and TRCA are the appropriateness of:

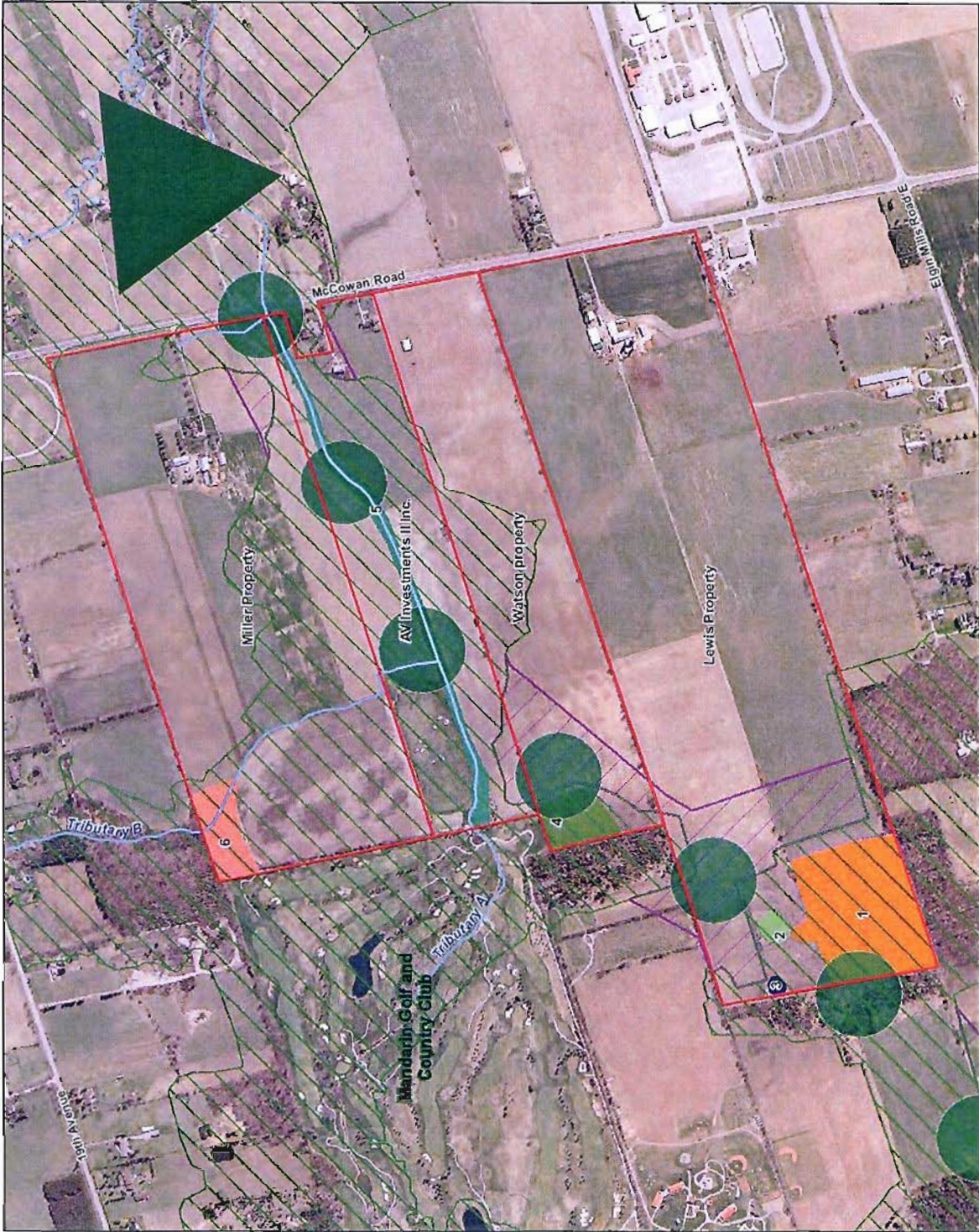
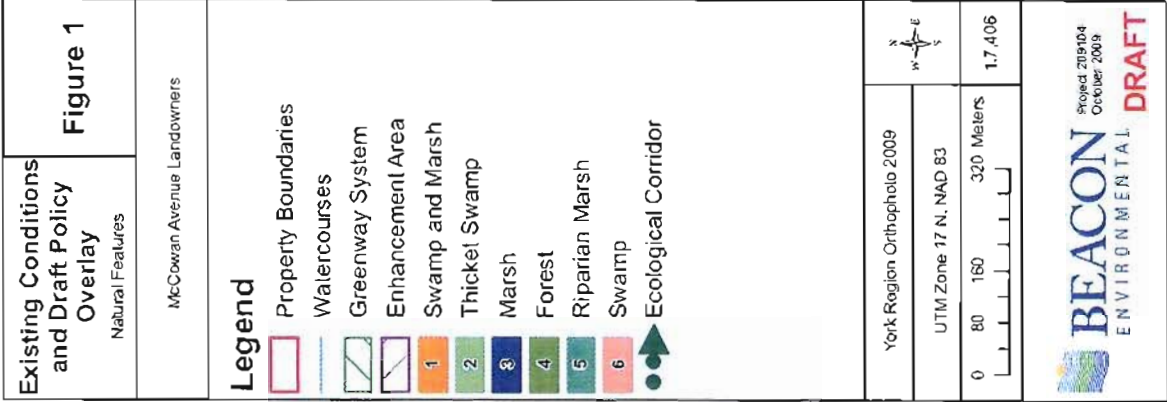
1. the Estimated Floodplain mapping;
2. the Future Rouge Park mapping; and
3. the 200 m wide east-west Enhancement Area / Ecological Corridor across the subject lands.

Please contact the undersigned at ext. 228 if you have questions or require additional information.

Yours truly,
Beacon Environmental



Jo-Anne Lane, M.Sc.
Principal



Appendix 1

**Summary of Vegetation Communities
observed on the Subject Properties on
August 11, 2009.**

Appendix 1. Summary of Vegetation Communities observed on the Subject Properties on Aug 11, 2009

Unit Number	1	2	3	4	5	6
Vegetation Type	Poplar Mineral Deciduous Swamp (SWD 7-1) Dogwood Organic Thicket Swamp (SWT 3-2) Cattail Organic Shallow Marsh (MAS 3-1)	Dogwood Organic Swamp (SWT 3-2)	Cattail Organic Shallow Marsh (MAS 3-1)	Fresh to Moist Ash Lowland Deciduous Forest (FOD7-2)	Riparian Marsh (MAM 2-2)/MAS 2-1	Green Ash Mineral Deciduous Swamp (SWD2-2)
Overstorey Composition	Trembling Aspen (D) Green Ash White Elm Cedar			Bur Oak (A) 30-50 Sugar Maple Basswood Green Ash Aspen Black Ash Norway Spruce American Beach Butternut	Crack Willow Manitoba Maple	Green Ash (A) Basswood White Elm Black Ash Black Walnut Yellow Birch Bur Oak
Understorey Composition	Common Buckthorn Red-Osier Dogwood Pussy Willow Bebb's Willow Red Raspberry Thicket Creeper	Red-Osier Dogwood Common Buckthorn	Red Raspberry Red-Osier Dogwood	Common Buckthorn Chokeberry Ironwood Muscle Beech Thicket Creeper Running Strawberry Bush	Missouri Willow Red Raspberry Red-Osier Dogwood	Common Buckthorn Ironwood Black Ash White Elm Thicket Creeper White Cedar Red-Osier Dogwood Witch Hazel
Groundcover Composition	Cattails Reed Canary Grass Green Bulrush Softstem Bulrush Joe Pyeweed Tussock Sedge Bebb's Sedge Slipale Sedge Fox Sedge Nettles Dudley's Rush	Cattails Reed Canary Grass Green Bulrush Softstem Bulrush Jewelweed Nettles Dudley's Rush Aster punctatus Canada Anemone	Cattails Reed Canary Grass Epilobium hirsutum Redtop Bebb's Sedge	Mayapple Trillium Meadow Rug Starry Solomon's Seal False Solomon's Seal Michigan Lily Wild Ginger Red Barberry Ositch Fern Sensitiva Fern	Cattails Reed Canary Grass Fringed Lutescent Redtop Bebb's Sedge Field Horsetail Pondweeds P. crispus E. canadensis	False Nettle Jewelweed Meadow Rue Starry Solomon's Seal False Solomon's Seal Bulbel Fern Wood Fern Ositch Fern Sensitiva Fern Hog Peanut
Diameter Range	10-20	n/a	n/a			20-30-50
Structural Complexity	2	1-2	1	n/a	20-30-50	3
Canopy Closure	1-2	1	1	1	2	3
Relative Age	1	1	1	0	3	3
Soil Texture	Om ~ 30-40 cm	Om ~ 20-40 cm	Om ~ 20	1	3	Clay
Drainage Class	3	3	3	Clay	Clay/Om	2
Slope Class	1	1	1	3	3	1
Topographic Complexity	1	2	1	1-2	1	2
Condition	2	2	2	2(3)	1	2(3)

Diameter Range (1=<15 cm d.b.h., 2=15-30 cm d.b.h., 3=>30 cm d.b.h.) | Structural Complexity (1=low, 2=moderate, 3=high) | Canopy Closure (1=<25%, 2=25-50%, 3=>50%) | Relative Age (1=early, 2=mid, 3=late, 4=old growth) | Soil Texture (sand/silt/clay/frag.) | Drainage (1=rapid, 2=well, 3=imperfect, 4=poor) | Slope (1=0-9%, 2=9-30%, 3=>30%) | Topographic Complexity (1=even, 2=uneven, 3=complex) | Condition (1=disturbed, 2=undisturbed, 3=moderate, 4=poor) | Aberrations: (1=Japresent localized condition, D=Dominant (60-100%), A=Around (10-25%), O=Occasional (<10%), F=Frequent (10-25%), E=Rare (<5%), S=Scattered (<10%), P=Present (<10%), R=Rare (<5%), C=Common (>10%), I=Infrequent (<10%), L=Localized (<10%), M=Modest (<10%), N=Normal (<10%), S=Scattered (<10%), P=Present (<10%), R=Rare (<5%), C=Common (>10%), I=Infrequent (<10%), L=Localized (<10%), M=Modest (<10%), N=Normal (<10%)

Appendix 2

**Summary of Plant Species observed
on the Subject Properties on
August 11, 2009**

Appendix 2: Summary of Plant Species observed on the Subject Properties on Aug 11, 2009

Scientific Name	Common Name	TRCA RANK*
<i>Acer negundo</i>	Manitoba Maple	L+?
<i>Acer platanoides</i>	Norway Maple	L+
<i>Acer saccharinum</i>	Silver Maple	L4
<i>Actaea rubra</i>	Red Baneberry	L5
<i>Agrostis gigantea</i>	Redtop	L+
<i>Amaranthus</i> sp	Amaranth Species	
<i>Ambrosia artemisiifolia</i>	Annual Ragweed	L5
<i>Amphicarpaea bracteata</i>	Hog-peanut	L5
<i>Anemone canadensis</i>	Canada Anemone	L5
<i>Anemone virginiana</i> var. <i>virginiana</i>	Virginia Anemone	L5
<i>Apocynum androsaemifolium</i> ssp. <i>androsaemifolium</i>	Spreading Dogbane	L4
<i>Arctium minus</i>	Lesser Burdock	L+
<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	Jack-in-the-pulpit	L5
<i>Asarum canadense</i>	Wild Ginger	L4
<i>Asclepias incarnata</i> ssp. <i>incarnata</i>	Swamp Milkweed	L4
<i>Asclepias syriaca</i>	Common Milkweed	L5
<i>Aster lanceolatus</i> ssp. <i>lanceolatus</i>	Panicked Aster	L5
<i>Aster lateriflorus</i> var. <i>lateriflorus</i>	Calico Aster	L5
<i>Aster puniceus</i> var. <i>puniceus</i>	Purple-stemmed Aster	L5
<i>Avena sativa</i>	Cultivated Oat	L+
<i>Betula alleghaniensis</i>	Yellow Birch	L4
<i>Bidens cernua</i>	Nodding Beggar's Ticks	L5
<i>Bidens vulgata</i>	Tall Beggar's Ticks	L4
<i>Boehmeria cylindrica</i>	False Nettle	L4
<i>Bromus inermis</i> ssp. <i>inermis</i>	Smooth Brome	L+
<i>Calamagrostis canadensis</i>	Blue-joint Reedgrass	L4
<i>Carex bebbii</i>	Bebb's Sedge	L5
<i>Carex blanda</i>	Woodland Sedge	L5
<i>Carex cristatella</i>	Crested Sedge	L5
<i>Carex gracillima</i>	Graceful Sedge	L4
<i>Carex granularis</i>	Meadow Sedge	L5
<i>Carex intumescens</i>	Bladder Sedge	L4
<i>Carex lupulina</i>	Hop Sedge	L3
<i>Carex radiata</i>	Stellate Sedge	L5
<i>Carex spicata</i>	Spiked Sedge	L+
<i>Carex stipata</i>	Stalk-grain Sedge	L5
<i>Carex stricta</i>	Tussock Sedge	L4
<i>Carex tenera</i>	Slender Sedge	L4
<i>Carex vulpinoidea</i>	Fox Sedge	L5
<i>Carpinus caroliniana</i> ssp. <i>virginiana</i>	American Hornbeam	L4
<i>Centaurea nigra</i>	Black Knapweed	L+
<i>Chenopodium</i> sp	Goosefoot Species	
<i>Cicuta maculata</i>	Spotted Water-hemlock	L5

Scientific Name	Common Name	TRCA RANK*
<i>Cirsium arvense</i>	Creeping Thistle	L+
<i>Clinopodium vulgare</i>	Field Basil	L5
<i>Conyza canadensis</i>	Fleabane	L5
<i>Cornus sericea ssp. sericea</i>	Red-osier Dogwood	L5
<i>Crataegus sp</i>	Hawthorn Species	
<i>Cystopteris bulbifera</i>	Bulblet Fern	L4
<i>Dactylis glomerata</i>	Orchard Grass	L+
<i>Daucus carota</i>	Queen Anne's Lace	L+
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	L5
<i>Elodea canadensis</i>	Broad Waterweed	L4
<i>Epilobium ciliatum ssp. ciliatum</i>	Hairy Willow-herb	L5
<i>Equisetum arvense</i>	Field Horsetail	L5
<i>Euonymus obovata</i>	Running Strawberry-bush	L3
<i>Eupatorium maculatum var. maculatum</i>	Spotted Joe-pye Weed	L5
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	L5
<i>Fagus grandifolia</i>	American Beech	L4
<i>Fragaria vesca ssp. americana</i>	Woodland Strawberry	L5
<i>Fraxinus americana</i>	White Ash	L5
<i>Fraxinus nigra</i>	Black Ash	L4
<i>Fraxinus pennsylvanica</i>	Green Ash	L5
<i>Galium mollugo</i>	White Bedstraw	L+
<i>Galium triflorum</i>	Sweet-scent Bedstraw	L5
<i>Geranium robertianum</i>	Herb-robert	L+?
<i>Glyceria striata</i>	Fowl Manna Grass	L5
<i>Hamamelis virginiana</i>	American Witch-hazel	L3
<i>Impatiens capensis</i>	Spotted Jewel-weed	L5
<i>Inula helenium</i>	Elecampane	L+
<i>Juglans cinerea**</i>	Butternut**	L3
<i>Juglans nigra</i>	Black Walnut	L5
<i>Juncus articulatus</i>	Jointed Rush	L5
<i>Juncus dudleyi</i>	Dudley's Rush	L5
<i>Juncus effusus ssp. solutus</i>	Soft Rush	L4
<i>Juncus tenuis</i>	Slender Rush	L5
<i>Lactuca serriola</i>	Prickly Lettuce	L+
<i>Leonurus cardiaca ssp. cardiaca</i>	Common Motherwort	L+
<i>Lepidium sp</i>	Pepper-grass Species	
<i>Lilium michiganense***</i>	Michigan Lily***	L3
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	L+
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	L+
<i>Lycopus uniflorus</i>	Northern Bugleweed	L4
<i>Lysimachia ciliata</i>	Fringed Loosestrife	L5
<i>Maianthemum racemosum ssp. racemosum</i>	False Solomon's Seal	L5
<i>Maianthemum stellatum</i>	Starflower False Solomon's Seal	L5
<i>Malus pumila</i>	Common Apple	L+
<i>Matteuccia struthiopteris var. pensylvanica</i>	Ostrich Fern	L5

Scientific Name	Common Name	TRCA RANK*
<i>Medicago lupulina</i>	Black Medic	L+
<i>Medicago sativa</i> ssp. <i>sativa</i>	Alfalfa	L+
<i>Melilotus alba</i>	White Sweet Clover	L+
<i>Melilotus officinalis</i>	Yellow Sweet Clover	L+
<i>Monarda fistulosa</i>	Wild Bergamot	L4
<i>Muhlenbergia mexicana</i>	Mexican Satin Grass	L5
<i>Nepeta cataria</i>	Catnip	L+
<i>Oenothera biennis</i>	Common Evening-primrose	L5
<i>Onoclea sensibilis</i>	Sensitive Fern	L5
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	L5
<i>Parthenocissus vitacea</i>	Thicket Creeper	L5
<i>Phalaris arundinacea</i>	Reed Canary Grass	L+?
<i>Picea abies</i>	Norway Spruce	L+
<i>Plantago lanceolata</i>	English Plantain	L+
<i>Plantago major</i>	Nipple-seed Plantain	L+
<i>Poa compressa</i>	Canada Bluegrass	L+
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	L+
<i>Podophyllum peltatum</i>	May Apple	L5
<i>Polygonum persicaria</i>	Lady's Thumb	L+
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	Balsam Poplar	L5
<i>Populus tremuloides</i>	Quaking Aspen	L5
<i>Potamogeton crispus</i>	Curly Pondweed	L+
<i>Potentilla recta</i>	Sulphur Cinquefoil	L+
<i>Prunella vulgaris</i> ssp. <i>vulgaris</i>	Common Heal-all	L+
<i>Prunus serotina</i>	Wild Black Cherry	L5
<i>Prunus virginiana</i> var. <i>virginiana</i>	Choke Cherry	L5
<i>Quercus macrocarpa</i>	Bur Oak	L4
<i>Rhamnus cathartica</i>	Buckthorn	L+
<i>Rubus idaeus</i> ssp. <i>idaeus</i>	Red Raspberry	
<i>Salix bebbiana</i>	Bebb's Willow	L4
<i>Salix discolor</i>	Pussy Willow	L4
<i>Salix eriocephala</i>	Heart-leaved Willow	L5
<i>Salix fragilis</i>	Crack Willow	L+
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush	L4
<i>Scirpus atrovirens</i>	Woolgrass Bulrush	L5
<i>Solidago canadensis</i>	Canada Goldenrod	L5
<i>Solidago canadensis</i> var. <i>scabra</i>	Tall Goldenrod	L5
<i>Thalictrum dioicum</i>	Early Meadowrue	L5
<i>Thuja occidentalis</i>	Northern White Cedar	L4
<i>Tilia americana</i>	American Basswood	L5
<i>Trillium grandiflorum</i>	White Trillium	L4
<i>Typha latifolia</i>	Broad-leaf Cattail	L4
<i>Ulmus americana</i>	American Elm	L5
<i>Urtica dioica</i> ssp. <i>dioica</i>	Stinging Nettle	L+

***Legend**

RANK	CONSERVATION CONCERN LEVEL IN TRCA JURISDICTION
L1	Unable to withstand disturbance; many criteria are limiting factors; generally occur in high-quality natural areas in natural matrix; almost certainly rare in the TRCA jurisdiction; of concern regionally.
L2	Unable to withstand disturbance; some criteria are very limiting factors; generally occur in high-quality natural areas, in natural matrix; probably rare in the TRCA jurisdiction; of concern regionally.
L3	Able to withstand minor disturbance; generally secure in natural matrix; considered to be of regional concern.
L4	Able to withstand some disturbance; generally secure in rural matrix; of concern in urban matrix.
L5	Able to withstand high levels of disturbance; generally secure throughout the jurisdiction, including the urban matrix. May be of very localized concern in highly degraded areas.

** Federally and provincially Endangered Species-at-Risk.

*** Rare plant in the Region of York.