



# Electronic Development Services Committee Meeting

## Revised Agenda

### Revised Items are Italicized.

Meeting Number 10  
May 3, 2021, 9:30 AM - 1:00 PM  
Live streamed

**Note: Due to COVID-19, our facilities are closed to the public. Access is not permitted to the Markham Civic Centre and Council Chamber.**

Members of the public can participate by:

#### **1. VIEWING THE ONLINE LIVESTREAM**

Development Services Committee meetings are video and audio streamed at: <https://pub-markham.escribemeetings.com/>

#### **2. EMAILING A WRITTEN SUBMISSION:**

Members of the public may submit written deputations by email to [clerkspublic@markham.ca](mailto:clerkspublic@markham.ca).

**Written submissions must be received by 5:00 p.m. the day before the meeting\***

\*If the deadline for written submission has passed, you may:

- a. Email your written submission directly to Members of Council; or
  - b. Make a virtual deputation at the meeting by completing and submitting an online Request to Speak Form
- \*If the deadline for written submission has passed and Council has finished debate on the item at the meeting, you may email your written submission directly to Members of Council.

#### **3. REQUEST TO SPEAK / VIRTUAL DEPUTATION :**

Members of the public who wish to make a live virtual deputation, please register prior to the start of the meeting by:

1. Completing an online Request to Speak Form , or,
  2. E-mail [clerkspublic@markham.ca](mailto:clerkspublic@markham.ca) providing full name, contact information and item they wish to speak, or,
  3. If you do not have access to email, contact the Clerk's office at 905-479-7760 on the day of the meeting.
- \*If Committee has finished debate at the meeting on the item, you may email your written submission directly to Members of Council. The list of Members of Council is available online at this link.

Alternate formats for this document are available upon request.

Closed captioning during the video stream may be turned on by clicking the [cc] icon located at the lower right corner of the video screen.

Please bring this Development Services Committee Agenda to the Council meeting on May 26, 2021.



1. CALL TO ORDER
2. DISCLOSURE OF PECUNIARY INTEREST
3. APPROVAL OF PREVIOUS MINUTES
  - 3.1. DEVELOPMENT SERVICES COMMITTEE MINUTES – APRIL 19, 2021 (10.0) 15
    1. That the minutes of the Development Services Committee meeting held April 19, 2021, be confirmed.
  - 3.2. *DEVELOPMENT SERVICES COMMITTEE MINUTES – APRIL 21, 2021 (10.0)* 32
    1. That the minutes of the Development Services Committee meeting held April 21, 2021, be confirmed.
4. DEPUTATIONS
5. COMMUNICATIONS
  - 5.1. *2637996 ONTARIO INC. C/O SMARTCENTRES FOR OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT A SIX STOREY RETIREMENT RESIDENCE INCORPORATING EXISTING HERITAGE BUILDINGS AT 134, 136, 140, 144, 152 MAIN STREET NORTH, 12 WILSON ST.* 37  
  
(WARD 4), FILE NO.: PLAN 20 136386 (10.3, 10.5)  
  
Note: Please refer to Item #8.4 for staff report.
    1. That the communication submitted by Simon Chan providing comments on the above noted application be received for information purposes.
  - 5.2. *GTA WEST CORRIDOR (413 HIGHWAY) (5.10)* 39  
  
Note: Please refer to Item #9.1 for Motion.  
  
That the following communications providing comments regarding the Motion on GTA West Corridor (413 Highway) be received for information purposes:
    1. Chris Madsen
    2. Jim Winstone
    3. Michael Robertson



4. Surjit Sachdev
5. Laura Tipton
6. Thomas Poulis
7. Louisa Santoro
8. Angela Grella
9. Sherry Draisey
10. Peter Miasek

**5.3. 10-20 FINCHAM AVENUE OFFICIAL PLAN AND ZONING BY-LAW  
AMENDMENT APPLICATIONS APPEALED TO LPAT FILE NO: OP/ZA 18  
108216 (10.0, 8.0)**

50

**Note: Please refer to items #8.6 and #13.1.2.**

That the following communications providing comments regarding 10-20 Fincham Avenue be received for information purposes:

1. Sheila Coleman
2. Lesley James
3. Liza Lyon

**6. PETITIONS**

**7. CONSENT REPORTS - DEVELOPMENT AND POLICY ISSUES**

**7.1. DEVELOPMENT SERVICES PUBLIC MEETING MINUTES – APRIL 6,  
2021 AND APRIL 13, 2021 (10.0)**

53

1. That the minutes of the Development Services Public Meeting held April 6, 2021 and April 13, 2021, be confirmed.

**7.2. CYCLING AND PEDESTRIAN ADVISORY COMMITTEE (CPAC)  
MINUTES – MARCH 18, 2021 (16.34)**

66

1. That the minutes of the Cycling and Pedestrian Advisory Committee (CPAC) meeting held March 18, 2021, be received for information purposes.

**7.3. VARLEY-MCKAY ART FOUNDATION OF MARKHAM MINUTES –  
MARCH 15, 2021 (16.0)**

73

1. That the minutes of the Varley-McKay Art Foundation of Markham meeting held March 15, 2021, be received for information purposes.



## 8. REGULAR REPORTS - DEVELOPMENT AND POLICY ISSUES

### 8.1. PHASE 1 REPORT: NATURAL HERITAGE INVENTORY AND ASSESSMENT STUDY (10.0)

80

L. Duoba, ext. 7925 & P. Wong, ext. 6922

**Note: Sarah Mainguy, Senior Ecologist, North-South Environmental will be in attendance to provide a presentation on this matter.**

**Attachment A: Phase 1: Natural Heritage Inventory and Assessment Study attached.**

1. That the staff report and presentation entitled: “Phase 1 Report: Natural Heritage Inventory and Assessment Study” dated May 3, 2021, be received; and,
2. And that the Phase 1: Natural Heritage Inventory and Assessment Study provide input into the upcoming Official Plan review process and that the study recommendations be considered for the Terms of Reference for Phase 2 of the Natural Heritage Management Plan Study; and,
3. That staff be authorized and directed to do all things necessary to give effect to this resolution.

### 8.2. RECOMMENDATION REPORT SOUTHSORE INVESTMENTS INC. (FORD/LINCOLN) 4592 AND 4600 HIGHWAY 7 EAST SITE PLAN APPROVAL APPLICATION TO FACILITATE A NEW AUTOMOBILE DEALERSHIP (WARD 3) FILE NO. SPC 20 107969 (10.6)

257

D. Pagratis, ext. 2960

1. That the report titled “RECOMMENDATION REPORT, Southshore Investments Inc. (Ford/Lincoln), 4592 and 4600 Highway 7 East, Site Plan Approval Application to facilitate a new automobile dealership (Ward 3), File No. SPC 20 107969”, be received; and,
2. That the Site Plan application (File No. SPC 20 107969) submitted by Southshore Investments Inc. (Ford/Lincoln) be endorsed in principle, subject to the conditions attached as Appendix “A” and that Site Plan Approval be delegated to the Director of Planning and Urban Design, or his designate; and,
3. That Site Plan Endorsement shall lapse after a period of three (3) years from the date of endorsement in the event that the Site Plan Agreement is not executed within that period; and further,
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

### 8.3. PRELIMINARY REPORT APPLICATIONS BY TIMBERCREEK FOUR

269



**QUADRANT GP2 INC. FOR OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT FIVE (5) MIXED USE BUILDINGS AT 288, 298, AND 300 JOHN STREET, FILE NO. PLAN 20 130784 (WARD 1) (10.3, 10.5)**

R. Cefaratti, ext. 3675

1. That the report entitled “Preliminary Report, Applications by Timbercreek Four Quadrant GP2 Inc., for Official Plan and Zoning By-law Amendments to permit five (5) mixed use buildings at 288, 298, and 300 John Street, File No. PLAN 20 130784 (Ward 1)”, be received.

**8.4. PRELIMINARY REPORT APPLICATIONS BY 2637996 ONTARIO INC. C/O SMARTCENTRES FOR OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT A SIX STOREY RETIREMENT RESIDENCE INCORPORATING EXISTING HERITAGE BUILDINGS**

283

**AT 134, 136, 140, 144, 152 MAIN STREET NORTH, 12 WILSON ST. (WARD 4) FILE NO.: PLAN 20 136386 (10.3, 10.5)**

P. Wokral, ext. 7955

1. That the report dated May 3, 2021 titled “PRELIMINARY REPORT, Applications by 2637996 Ontario Inc. c/o SmartCentres for Official Plan and Zoning By-law Amendments to permit a six storey retirement residence incorporating existing heritage buildings at 134, 136, 140, 144, 152 Main Street North, 12 Wilson St. (Ward 4), File No.: PLAN 20 136386”, be received.

**8.5. PRELIMINARY REPORT FLATO DEVELOPMENTS INC. APPLICATION FOR DRAFT PLAN OF SUBDIVISION TO CREATE BLOCKS FOR A PUBLIC PARK, PUBLIC ROAD AND RESIDENTIAL DEVELOPMENT COMPRISED OF TWO (2) 8-STOREY BUILDINGS AND TOWNHOUSES IN THE SOUTH-WEST QUADRANT**

296

**OF HIGHWAY 48 AND THE CITY OF MARKHAM/TOWN OF WHITCHURCH-STOUFFVILLE MUNICIPAL BOUNDARY (NORTH OF 19TH AVENUE) PART OF LOT 31, CONCESSION 7 (WARD 6) (FILE NO. PLN 20 134853) (10.7)**

S. Muradali, ext. 2008

1. That the report titled “PRELIMINARY REPORT, Flato Developments Inc., Application for Draft Plan of Subdivision to create blocks for a public park, public road and residential development comprised of two (2) 8-storey buildings and townhouses in the south-west quadrant of Highway 48 and the City of Markham/ Town of Whitchurch-Stouffville municipal boundary (north of 19<sup>th</sup> Avenue), Part of Lot 31, Concession 7 (Ward 6), (File No. PLN 20 134853)”, be received.



**8.6. MARKHAM SUB-COMMITTEE MINUTES (10-20 FINCHAM AVENUE) – APRIL 20, 2021 (10.0)** 306

**Note: Committee has the option to endorse, amend, refer to staff or receive for information the following recommendation from the April 20, 2021 Markham Sub-Committee (10-20 Fincham Avenue) meeting:**

“That the Markham Sub-Committee recommends that the Development Services Committee not endorse the application; and,

That the applicant come back with a more suitable application.”

1. That the minutes of the Markham Sub-Committee (10-20 Fincham Avenue) meeting held April 20, 2021, be received for information purposes.

**8.7. CITY OF MARKHAM COMMENTS ON PLANNING ACT CHANGES REGARDING SUBDIVISION CONTROL AND CONSENTS IN BILL 276 (10.0)** 310

1. That this report be forwarded to the Minister of Municipal Affairs and Housing as the City of Markham’s Comments with respect to ERO Number 019-3495; and,
2. That this report be forwarded to the Provincial Standing Committee on General Government as the City of Markham’s Comments with respect to Bill 276, *Supporting Recovery and Competitiveness Act, 2021*; and,
3. That Council for the City of Markham does not support the following changes to the *Planning Act* related to:
  - a. the Proposed Minister’s Consent Order; and
  - b. allowing purchasers of land to apply for a consent;
4. That Council for the City of Markham supports the proposed one-year extension for an applicant to fulfill conditions of a consent, and that the *Planning Act* be amended to allow the extension to be delegated to staff; and,
5. That Council for the City of Markham request an additional change to the *Planning Act* that allows for land to merge automatically where it is required by a condition of the consent; and further,
6. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**9. MOTIONS**

**9.1. GTA WEST CORRIDOR (413 HIGHWAY) (5.10)** 315

**Note: The notice of this motion was given to Development Services Committee**



at its meeting held on April 19, 2021.

- i. Whereas Ontario farming and food processing together employ one million persons and generate over \$35 billion economic benefits annually; and,
- ii. Whereas the Greater Golden Horseshoe is the third largest agricultural producer in North America after California and Chicago; and,
- iii. Whereas the Province of Ontario is proposing to develop the GTA West Corridor by razing 2,000 acres of pristine farmlands, some of which are Class A and Class B farmlands and many of which will immediately cease to be farmed and other lands, over time, which will be developed for non-agricultural uses; and,
- iv. Whereas the Minister of Agriculture, Food and Rural Affairs has not completed an Agricultural Impact Assessment for the GTA West Corridor; and,
- v. Whereas the proposed GTA Corridor will lead to greater demand for development with more than 33,000 acres of Whitebelt lands in the Greater Golden Horseshoe (Caledon and Vaughan) leading to greater urban sprawl and development that is not supportive of transit investment; and,
- vi. Whereas the proposed GTA West Corridor will cut across 85 waterways, and destroy protected Greenbelt lands including 7 entire woodlots, 220 important wetlands and valley land features, 10 different species-at-risk and hundreds of acres of vulnerable wildlife habitat; and,
- vii. Whereas the Greenbelt Plan's permission for new infrastructure which negatively impacts key natural heritage features, key hydrologic features or key hydrologic areas requires determination that there is "no reasonable alternative" and this has not been established through a planning process; and,
- viii. Whereas the 59-kilometre proposed 413 highway is an old idea, dropped by the previous government after a highly esteemed panel found it would save commuters less than a minute while increasing carbon emissions; and,
- ix. Whereas the current Provincial government revived the \$6 billion to \$15 billion GTA West Corridor proposal in 2018, saying it could relieve congestion issues in the fast-growing Toronto suburbs and boost Ontario's economic recovery from COVID-19; and,
- x. Whereas several reasonable alternatives to the GTA West Corridor



exist including congestion pricing on other highways, shifting truck traffic to the under-utilized 407 Highway including the reduction or elimination of tariffs, transportation system management on other highways (ramp metering, speed harmonization, compass etc (freight, rail improvements. underpasses) and developing the east-west 407 rail transitway including its potential for high-speed electric rail transitway; and,

- xi. Whereas the final recommendation of the Stage 1 Provincial Environmental Assessment (2012) was to first put in place the transportation system management components, rapid transit, freight rail improvements and expansion of existing highways prior to constructing the new expressway; and,
- xii. Whereas the City of Markham has taken reasonable measures to mitigate against climate change which reduce greenhouse gas emissions (GHGs); and,
- xiii. Whereas responding to the climate emergency requires immediate re-evaluation of all transportation plans as greenhouse gas emissions (GHG's) from transportation which is the highest single source of emissions; and,
- xiv. Whereas the proposed GTA 413 Highway Corridor involves destruction of woodlots which are important carbon absorbers and help clean the air; and,
- xv. Whereas the Province must take immediate measures to decrease GHG through alternatives such as increasing public transit, including the necessary local public transit networks, to enable broad access to the higher order transit including high-speed electric trains; and,
- xvi. Whereas the City of Markham has consistently supported transit orientated community development including a high-speed rail transit corridor alongside the 407 Highway to address long term inter-regional transportation solutions and to enhance integration with the development of our communities and supported rail integrated communities along both the GO transit rail lines and the 407 rail transitway; and,
- xvii. Whereas the preferred route for the GTA West 413 highway will increase traffic in the western portion of York Region without appropriate transit solutions; and,
- xviii. Whereas the Toronto Regional Conservation Authority (TRCA), which is the regulatory authority for developments in flood plains, wetlands and valley lands, has also raised concerns about the potential impact of the proposed GTA West Corridor as well as the streamlined



Environmental Assessment process; and,

- xix. Whereas the Environmental Assessment undertaken by the previous provincial government was shelved because of strong objection to the GTA Corridor by an expert panel in the fields of rural development, renewable cities, agriculture, environment and efficient transportation who sounded alarms over predicted irreversible ecological harm caused by the uncontrolled, low density urban sprawl enabled by the Corridor; and,
- xx. Whereas Transit Oriented Communities (TOCs) positively contribute toward a more environmentally friendly and economically sustainable communities. TOCs reduce the reliance on car-dependent trips for all members of the community, therefore reducing Vehicle Miles Travelled (VMT) and also reducing the high costs of auto ownership thus contributing to achieving affordable housing outcomes; and,
- xxi. Whereas TOC is based on development above or around an existing, planned or yet-to-be planned piece of transport infrastructure, the path chosen will affect the level of complexity involved. TOD around stations can act as a catalyst for market-led densification ultimately resulting in creative, transit supportive communities while providing significant land value uplift; and,
- xxii. Whereas Strategic land-use planning requires public policy that communicates TOC as integral to a community's long-term vision with supportive official plan and zoning provisions that facilitate density and mixed land use. TOC can be applied based on a range of high densities. Some outlying city areas may focus on developments that offer access to transit connecting to employment venues and high-density downtowns, which boast a mixture of residential, employment, retail and entertainment options. Making TOC an integral consideration in city planning allows urban designers and land use/transportation planners to establish essential ingredients for future development and economic growth; and,
- xxiii. Whereas the Regional Municipality of York passed a resolution on March 18, 2021 requesting a Federal Environmental Impact study for the proposed 413 Highway (GTA West Corridor); and,
- xxiv. Whereas the 407 Highway was created in order to relieve congestion on 401 Highway, but the 407 was tolled, thereby limiting the amount of relief provided by the 407 Highway; and,
- xxv. Whereas the need for rapid transit in the GTA is long overdue and in greater need than the 413 Highway to accommodate growth requirements of the Provincial Government's Growth Plan; and,



xxvi. Whereas concerned citizens of Markham and a significant number of reputable organizations have demanded cancellation of the GTA West Corridor project, including: Environmental Defense, the David Suzuki Foundation, the Federation of Urban Neighborhoods, Gravel Watch, Halton Environmental Network, National Farmers' Union-Ontario, Rescue Lake Simcoe Coalition, Sustainable Vaughan, Concerned Citizens of King Township (CCKT), Transport Action Ontario, Greenbelt Council, the Wilderness Committee and Sustainable Mississauga; as well as formal opposition of Councils from the municipalities of Halton Hills, Orangeville, Vaughan, Brampton, Mississauga, King and the City of Toronto; and,

xxvii. Whereas the Ontario NDP Party, Ontario Liberal Party and Ontario Green Party have all announced their opposition to the GTA West Corridor.

Now therefore be it resolved:

1. That the Council of the City of Markham strongly objects to the proposed GTA West Corridor and Transmission Corridor as it is currently defined; and
2. That the Council of the City of Markham continues to support an integrated rail transit network which includes high speed rapid rail transit running along beside the 407 highway; and,
3. That the Council of the City of Markham fully supports the Environmental Defense request for a Federal Environmental Impact Study pursuant to s.9(1) of the Impact Assessment Act (I.A.A.), prior to any advancement of this project; and,
4. That the Council of the City of Markham supports the Province undertaking an economic evaluation and time travel analysis of Highway 407 versus the proposed 413 Highway including the potential for congestion and non-peak hour pricing; and,
5. That if the GTA West Corridor does not proceed, that capital costs of funding the proposed GTA West Corridor should be redirected to provide for rapid transit for the Regions of York and Peel such as investment in the 407 rail transitway, improved GO service on the Kitchener and Milton lines, a new GO transit line to Bolton and LRT/BRT on Major Mackenzie; and,
6. That the Council of the City of Markham recommends that the Province undertake a comprehensive economic benefits analysis of the potential for transit orientated communities along the 407 Highway and GO rail transit network and new LRT/BRT lines versus the cost of



urban sprawl triggered by the proposed 413 Highway; and,

7. That the Province undertake a review of the Provincial Government Growth Plan for the Greater Golden Horseshoe and the GTA Regional Transportation Plan / Sustainable Communities Strategy to provide holistic comprehensive policies for achieving affordable housing near transit stations including policies to achieve the Province's goal of 50 percent of all new housing over the next twenty-five years being within a half mile of fixed guideway rail transit or high frequency (15 minutes or less, peak hour) bus transit. The Province must also update its affordable housing program to recognize the relationship between housing affordability and transit including the positive role of housing near rail transit TOC stations to improve the operational efficiency of the province's investment in mass transit; and,
8. That the Province, in undertaking consultation on the proposed GTA West Corridor, ensure that holistic, comprehensive integrated land use planning for the whole of the northern GTA is considered including planning the northern communities for land use and transit prior to considering new roads including the GTA West Corridor; and further,
9. That this Resolution be forwarded to the Premier of Ontario, Doug Ford, the Minister of Transportation, Hon. Caroline Mulroney, MPP York-Simcoe, Hon Jeff Yurek, MPP, the Minister of Environment and Climate Change, Hon. Stephen Lecce, MPP King-Vaughan, Hon. Kinga Surma, Associate Minister of Transportation GTA, Hon. Steve Clarke, Minister of Municipal Affairs and Housing, the Toronto and Region Conservation Authority, Phil Verster, President and CEO, Metrolinx and all Municipalities of the Region of York and as well as the Region of Peel.

## 9.2. YONGE NORTH SUBWAY EXTENSION (YNSE) MARKHAM THREE (3) STATION AREA STUDY (5.10)

320

**Note: The notice of this motion was given to Development Services Committee at its meeting held on April 19, 2021.**

Whereas the Province is undertaking the planning studies for the Yonge North Subway Extension (YNSE); and,

Whereas on March 18, 2021 Metrolinx released the Initial Business Case that affects the City of Markham and recommends advancing design of the YNSE; and,

Whereas the Initial Business Case proposes up to four stations along the 8-kilometre subway extension and a new easterly route realignment at Royal Orchard that proposes the subway travel under an established residential



neighbourhood in order to connect to the GO/CN Corridor: and,

Whereas intensification and redevelopment needs to occur along major rapid rail transit corridors like Yonge Street to support Provincial growth direction and to build sustainable communities, including the realization of transit-oriented communities; and,

Whereas the City undertook a study in 2020 entitled “Yonge North Subway Intensification Analysis” to identify development potential and population and employment forecasts and densities within the Steeles Avenue, Clark Avenue, Royal Orchard Boulevard, Langstaff Gateway and Richmond Hill Centre Station Areas that was provided to Metrolinx as input into the Initial Business Case for the YNSE; and further,

Whereas it is necessary for the City to undertake additional technical work to confirm the Transit Oriented Community potential surrounding Steeles, Clark and Royal Orchard Station areas as preliminary work toward a Secondary Plan exercise for the Yonge Street Corridor and to inform the YNSE process.

Now therefore be it resolved:

1. That the City of Markham immediately initiate the secondary plan for the Yonge Street Corridor approved as part of the 2020 Capital budget including more detailed analysis of growth potential along the corridor through a Preliminary Design Business Case which will include land use/built form study as preliminary work towards development of the Yonge Street Corridor Secondary Plan to confirm development potential and a preliminary land use concept, including 3D modelling and financial analysis, for three distinct areas along the Yonge Corridor, generally located within the Region’s “2020 Proposed Major Transit Station Areas, September 2020”, including:
  - a. Steeles Subway Station (MTSA 7) and lands within its 800-metre catchment area to the north,  
  
(eastern boundary is Dudley Avenue, northern boundary is the CN tracks, western boundary is Yonge Street and southern boundary is Steeles Avenue)
  - b. Clark Subway Station (MTSA 6) and lands within its 800-metre catchment area; and (eastern boundary is Dudley Avenue, north boundary is Elgin Street, Yonge Street is the western boundary, and the CN tracks are the southern boundary)
  - c. Royal Orchard Subway Station (MTSA 70) and lands within its 800-metre catchment area; and (Royal Orchard is the southern boundary, Yonge Street is the western boundary, southern boundary of Holy



Cross Cemetery is the northern boundary and eastern boundary to be determined); and

2. That staff initiate the RFP process for the Preliminary Design Business Case and report back on remaining stages of the secondary plan exercise including a project schedule and resourcing of the secondary plan process; and,
3. That the interview committee be comprised of the Thornhill Subcommittee, the CAO, the Commissioner of Development Services, the Director of Planning and Urban Design and a representative of the Purchasing Division; and,
4. That Markham staff be authorized and directed to do all things necessary to give effect to this resolution and report back to Development Services Committee at completion of the study.

## 10. NOTICES OF MOTION

## 11. NEW/OTHER BUSINESS

*As per Section 2 of the Council Procedural By-Law, "New/Other Business would generally apply to an item that is to be added to the **Agenda** due to an urgent statutory time requirement, or an emergency, or time sensitivity".*

## 12. ANNOUNCEMENTS

## 13. CONFIDENTIAL ITEMS

### 13.1. DEVELOPMENT AND POLICY ISSUES

13.1.1. UNIONVILLE SUB-COMMITTEE CONFIDENTIAL MINUTES – MARCH 2, 2021 (10.0) [Section 239 (2) (c)]

13.1.2. ADVICE THAT IS SUBJECT TO SOLICITOR-CLIENT PRIVILEGE, INCLUDING COMMUNICATIONS NECESSARY FOR THAT PURPOSE; (10-20 FINCHAM AVENUE) (8.0) [Section 239 (2) (f)]

## 14. ADJOURNMENT



**Information Page**

**Development Services Committee Members: All Members of Council**

**Development and Policy Issues**

Chair: Regional Councillor Jim Jones

Vice-Chair: Councillor Keith Irish

**Transportation and Infrastructure Issues**

Chair: Deputy Mayor Don Hamilton

Vice-Chair: Councillor Reid McAlpine

**Culture and Economic Development Issues**

Chair: Councillor Alan Ho

Vice-Chair: Councillor Khalid Usman

Development Services meetings are live video and audio streamed on the City's website.

Alternate formats for this document are available upon request.

**Consent Items:** All matters listed under the consent agenda are considered to be routine and are recommended for approval by the department. They may be enacted on one motion, or any item may be discussed if a member so requests.

**Please Note:** The times listed on this agenda are approximate and may vary; Council may, at its discretion, alter the order of the agenda items.

**Note: As per the Council Procedural By-Law, Section 7.1 (h)  
Development Services Committee will take a 10 minute recess after  
two hours have passed since the last break.**





# Electronic Development Services Committee Meeting

## Minutes

**Meeting Number 7**

**April 19, 2021, 9:30 AM - 1:00 PM**

**Live streamed**

Roll Call	<p>Mayor Frank Scarpitti</p> <p>Deputy Mayor Don Hamilton</p> <p>Regional Councillor Jack Heath</p> <p>Regional Councillor Joe Li</p> <p>Regional Councillor Jim Jones</p> <p>Councillor Keith Irish</p> <p>Councillor Alan Ho</p>	<p>Councillor Reid McAlpine</p> <p>Councillor Karen Rea</p> <p>Councillor Andrew Keyes</p> <p>Councillor Amanda Collucci</p> <p>Councillor Khalid Usman</p> <p>Councillor Isa Lee</p>
Staff	<p>Andy Taylor, Chief Administrative Officer</p> <p>Arvin Prasad, Commissioner, Development Services</p> <p>Claudia Storto, City Solicitor and Director of Human Resources</p> <p>Biju Karumanchery, Director, Planning &amp; Urban Design</p> <p>Brian Lee, Director, Engineering</p> <p>Bryan Frois, Chief of Staff</p> <p>Ron Blake, Senior Development Manager, Planning &amp; Urban Design</p> <p>Rick Cefaratti, Senior Planner, West District</p> <p>Loy Cheah, Senior Manager, Transportation</p> <p>Nhat Nguyen, Senior Manager, Development &amp; Environmental Engineer</p> <p>Stephen Kitagawa, Acting Manager, Development - West</p>	<p>Marg Wouters, Senior Manager, Policy &amp; Research</p> <p>Mary-Jane Courchesne, Acting Council/Committee Coordinator</p> <p>Grace Lombardi, Acting Election &amp; Hristina Giantsopoulos, Election &amp; Committee Coordinator</p> <p>Martha Pettit, Deputy Clerk</p> <p>Laura Gold, Council/Committee Coordinator</p>



Alternate formats for this document are available upon request

---

## **1. CALL TO ORDER**

In consideration of the ongoing public health orders, this meeting was conducted electronically to maintain physical distancing of participants. With the passage of the *COVID-19 Economic Recovery Act, 2020* (Bill 197), municipal Council Members are now permitted to meet remotely and count towards quorum.

The Development Services Committee convened at 9:32 AM with Regional Councillor Jim Jones presiding as the Chair. Councillor Keith Irish assumed the Chair at 2:05 PM for a Notice of Motion presented by Regional Councillor Jim Jones - item # 12. Deputy Mayor Don Hamilton assumed the Chair at 2:20 PM for item # 12 – a Notice of Motion presented by Regional Councillor Jim Jones. Regional Councillor Jim Jones assumed the Chair at 2:30 PM.

Councillor Karen Rea arrived at 9:40 AM.

Councillor Amanda Collucci arrived at 10:38 AM

## **2. DISCLOSURE OF PECUNIARY INTEREST**

There were no disclosures of Pecuniary Interests.

## **3. APPROVAL OF PREVIOUS MINUTES**

### **3.1 SPECIAL DEVELOPMENT SERVICES COMMITTEE MINUTES – MARCH 23, 2021 (10.0)**

Moved by Regional Councillor Jack Heath

Seconded by Regional Councillor Joe Li

1. That the minutes of the Special Development Services Committee meeting held March 23, 2021, be confirmed.

**Carried**



### **3.2 DEVELOPMENT SERVICES COMMITTEE MINUTES – MARCH 30, 2021 (10.0)**

Moved by Regional Councillor Jack Heath

Seconded by Regional Councillor Joe Li

1. That the minutes of the Development Services Committee meeting held March 30, 2021, be confirmed.

**Carried**

## **4. PRESENTATIONS**

### **4.1 PRESENTATION OF SERVICE AWARDS (12.2.6)**

The Development Services Committee recognized the following members of staff:

Warren Watson, Community Program Coordinator FT, Recreation Services, 35 years

Jason Best, Captain, Fire and Emergency Services, 25 years

Christopher Lane, Firefighter, Fire and Emergency Services, 25 years

James Pink, Firefighter, Fire and Emergency Services, 25 years

Robert Tadmire, Coordinator, Geomatics/GIS Advocate, Planning and Urban Design, 25 years

Janice Carroll, Manager, Community, Recreation Services, 25 years

Angelo Taccone, Facility Operator I, Mount Joy C.C., Recreation Services, 25 years

Miranda Miluzzi, Manager, Tax & Cash Management, Financial Services, 20 years

Robert West, Firefighter, Fire and Emergency Services, 20 years

Huyen Hare, Senior Business Development Officer, Economic Growth, Culture & Entrepreneurship, 15 years

Victor Chen, Firefighter, Fire and Emergency Services, 15 years

Adam Grant, Fire Chief, Fire and Emergency Services, 15 years

Timothy Johnson, Training Officer, Fire and Emergency Services, 15 years

Bradley Lamport, Captain, Fire and Emergency Services, 15 years

Martin, Matthiessen, Firefighter, Fire and Emergency Services, 15 years

Jason Scovell, Division Chief, Fire and Emergency Services, 15 years

Keith Woodcock, Firefighter, Fire and Emergency Services, 15 years

Bradley Roberts, Manager, Zoning & Special Projects, Planning and Urban Design, 15 years

Alex Giammarco, Supervisor, Community Facility, Recreation Services, 15 years



Kimberly Heaslip, Customer Service Representative, Recreation Services, 15 years

Ida Wong, Customer Service Representative, Recreation Services, 15 years

Yurong Duan, IMS Analyst, Environmental Services, 10 years

Lauren Hamilton, Alarm Room Operator, Fire and Emergency Services, 10 years

Cris Migue, Supervisor, Community Facility, Mass Vaccination Clinic, 10 years

Monica Ganzhorn, Customer Service Representative, Recreation Services, 10 years

Samuel Low, Supervisor, Community Program, Mass Vaccination Clinic, 5 years

Claire Nicholson, Supervisor, Community Program, Recreation Services, 5 years

## 5. DEPUTATIONS

Deputations were made regarding the following items:

- 1) 9.1 - York Region Proposed Population and Employment Forecast and Land Needs Assessment to 2051 (10.0)
- 2) 9.4 - Preliminary Report Applications by 7750 Bayview Avenue Limited Partnership (Liberty Developments) for Official Plan And Zoning By-Law Amendments to Permit Five (5) High Rise Apartment Towers at 7750 Bayview Avenue (Shouldice Hospital)

Refer to the items 9.1 and 9.4 for more information on the deputations.

## 6. COMMUNICATIONS

### 6.1 APPLICATIONS BY 7750 BAYVIEW AVENUE LIMITED PARTNERSHIP (LIBERTY DEVELOPMENTS) FOR OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT FIVE (5) HIGH RISE APARTMENT TOWERS AT 7750 BAYVIEW AVENUE (SHOULDICE HOSPITAL)

*FILE NO. PLAN 20 126269 (WARD 1) (10.3, 10.5)*

Please refer to Item #9.4 for more information on this item.

Moved by Councillor Keith Irish

Seconded by Regional Councillor Jack Heath

That the following communications providing comments regarding the application by 7750 Bayview Avenue Limited Partnership (Liberty Developments) be received for information purposes:

1. Sylvia Ghatti-Klein



2. Ada and Vincent Corvese
3. Anna and Nick Cino
4. Barrie Aravandino and Judit Gaal
5. David Mandelstam
6. Dr. Bernard Gryfe
7. Jeff Budd
8. Ron and Lilian Pellegrini
9. Jeff Peng
10. Paul Vaughan Hibbits
11. Bob Sudeyko
12. Arash Tajalli-Yazdi
13. Pho Lai and Silvia Ip
14. Tak Yeung and Jesse Li
15. David Levitt
16. Eva Walker
17. Rick and Kelly Russo
18. Xiayi Guo
19. Deena Levitt
20. Ben Wei Su
21. Diane and Robert Steckley
22. Marguereta and Timothy Bean
23. Sharon Hibbits
24. Sheldon and Marilyn Wayne
25. Essie Wong
26. Martin Tuori
27. Susan Merrick
28. Demetris and Fotini Andreou
29. Marchelle Nahmiache-Zelina



30. Lisa Fickel
31. Bob Sudeyko
32. Dan Sharp
33. William Wheeler
34. George Wong
35. Jessica Fong
36. Judy and Lorne Zon
37. Vanessa Mandelstam
38. Valerie and David Burke
39. The Executive of Ward One (South) Thornhill Residents Inc.
40. Farzad Sodaga

**Carried**

**6.2 YORK REGION PROPOSED POPULATION AND EMPLOYMENT  
FORECAST AND LAND NEEDS ASSESSMENT TO 2051**

Please refer to Item #9.1 for more information on this item.

Moved by Councillor Keith Irish

Seconded by Regional Councillor Jack Heath

That the following communications providing comments regarding the York Region Proposed Population and Employment Forecast and Land Needs Assessment to 2051:

1. Peter Miasek, on behalf of the Unionville Residents Association
2. Don Given, Malone Given-Parsons, on behalf of Kennedy Elgin Developments Ltd. and First Elgin Developments Inc.(11162 Kennedy Road & 4044 Elgin Mills Road

**Carried**



## **7. PETITIONS**

There were no petitions.

## **8. CONSENT REPORTS - DEVELOPMENT AND POLICY ISSUES**

### **8.1 DEVELOPMENT SERVICES PUBLIC MEETING MINUTES – MARCH 23, 2021 (10.0)**

Moved by Regional Councillor Joe Li

Seconded by Councillor Khalid Usman

1. That the minutes of the Development Services Public Meeting held March 23 2021, be confirmed.

**Carried**

### **8.2 2021 OPEN STREETS MARKHAM (WARD 3 AND WARD 7) (5.10)**

Brian Lee, Director of Engineering, and Loy Cheah, Senior Manager, Transportation, clarified that alternative funding sources have been identified if the City is not awarded the Canada Healthy Communities Initiative for \$99,500. Staff are working with key stakeholder to further refine, implement and promote the 2021 Open Streets Markham program to include Main Street Unionville “Slow Street Initiative” and the “Middlefield Road Closures” for Sundays and Saturdays provided the conditions of the pandemic permit the City to implement the program.

Moved by Councillor Reid McAlpine

Seconded by Deputy Mayor Don Hamilton

1. That the memorandum entitled, “2021 Open Streets Markham (Ward 3 and Ward 7)” be received; and,
2. That staff work with key stakeholders to further refine, implement and promote the 2021 Open Streets Markham program to include the Main Street Unionville “Slow Street” initiative and Middlefield Road closures for Sundays and statutory holidays; and,
3. That the 2021 Open Streets Markham program be implemented to include the Canada Day (July 1, 2021) to Labour Day (September 6, 2021) period at a minimum, and for a longer time period if funding permits; and,



4. That should the Destination Markham's application to the Canada Healthy Communities Initiative for \$99,500.00 be unsuccessful or reduced, the 2021 Open Streets Markham program be brought back to Development Services Committee for further funding consideration; and further,
5. That staff be directed to do all things necessary to give effect to this resolution.

**Carried**

## **9. REGULAR REPORTS - DEVELOPMENT AND POLICY ISSUES**

### **9.1 YORK REGION PROPOSED POPULATION AND EMPLOYMENT FORECAST AND LAND NEEDS ASSESSMENT TO 2051 (10.0)**

Arvin Prasad, Commissioner, Development Services introduced the item advising that York Region has released its Proposed Forecast and Land Needs Assessment to 2051.

Paul Bottomley, Region of York, Manager Policy, Research Forecasting, Long Range Planning provided a presentation entitled Proposed 2051 Forecast and Land Need Assessment, which included the provincial forecast and land needs assessment results, proposed urban expansion mapping, forecasts by local municipality, integrated growth management, and next steps of the Municipal Comprehensives Review (MCR).

Marg Wouters, Senior Manager, Policy & Research, provided a presentation entitled York Region Proposed 2051 Forecast and Land Needs Assessment, Preliminary Markham Staff Comments and Next Steps.

Ms. Wouters advised that the next steps include the following:

- Holding a Special DSC meeting in early May for further discussion with Members of Council on York Region's Proposed 2051 Forecast and Land Need Assessment for Markham;
- Undertaking public consultation on York Region's Proposed Forecast and Land Needs Assessments to 2051 in May, before reporting back to Council with comments to the Region in June.

The following deputations were made relative to the staff report:

Don Given, Malone Given Parsons, representing Kennedy Elgin Development Ltd. and First Elgin Developments Inc (11162 Kennedy Road & 4044 Elgin Mills Road), spoke in support of staff recommendation to consult the public and the landowners on York Region's Proposed Forecast and Land Needs Assessment to 2051 . Mr. Given also spoke in opposition of the lands north of Elgin Mills Road between Warden Avenue and Kennedy Road being designated as employment



lands, as the lands are too far a distance from transit or the Highway 404 and suggested that they would more suitable for residential uses.

Claudio Brutto, Brutto Planning Consultant LTD, representing the property owners at 11288 Kennedy Road expressed concern that the lands north of Elgin Mills Road between Warden Avenue and Kennedy Road are being designated as employment lands, as it will limit access to his client's property and the location of the lands are not suitable for employment purposes.

Peter Miasek, representing the Unionville Residents Association (URA), advised that York Region should consider other growth models that maintain some of Markham's whitebelt lands, have lower infrastructure costs, and have greater environmental benefits.

Committee discussed the following relative to the staff report:

- The areas of Markham that York Region is forecasting to experience the greatest intensification (Markham Centre, Langstaff, and along Yonge Street where the subway is being extended);
- The impact the extension of the Yonge subway will have on intensification, and what will happen if it is not extended;
- The vision for Major Mackenzie Drive;
- The vision for the Buttonville area;
- The trend of developers increasingly submitting dense development proposals for lands in existing neighbourhoods and the impact on intensification;
- Markham's average growth rate over time;
- The impact of Markham achieving a higher intensification rate than the 52% proposed by York Region;
- York Region's forecast that all of Markham's whitebelt lands will be required to be developed by 2051 in order to provide a variety of housing options;
- The impact of York Region's proposed minimum intensification rate of 50% will have on urban sprawl if the majority of its whitebelt lands are developed by 2051;
- The desire to retain some of Markham's whitebelt lands and intensify other areas to reach York Region's targeted growth for Markham;
- The impact of intensification on flooding in existing neighbourhoods;
- The impact the pandemic, and a carbon tax could have on growth forecasts;



- Non-developable lands, such as hydro corridors, natural heritage lands, hamlets, and transmission lands;
- The Development Charges rate for condominium unit versus a house;
- The lands north of Elgin Mills Road between Warden Avenue and Kennedy Road being designated as employment lands rather than for residential uses.

Mr. Bottomley advised that Markham's intensification rate of 52% is a minimum target. If Markham intensifies more than 52%, it will impact the intensification of other York Region municipalities. All of Markham's whitebelt lands are needed to provide a variety of housing types and to reach York Region's growth targets by 2051. Forecasting is based on broad assumptions that are not always correct. These assumptions are monitored and updated over time. It is forecasted that Major Mackenzie Drive will have rapid transit service in the future and it will likely resemble Highway 7. The majority of growth in the Buttonville area is anticipated to be for employment, but there are still a lot of unknowns in regards to this area.

Ms. Wouters clarified no decision is being made at this meeting, and that areas of concern will be discussed as part of the public consultation.

Regional Councillor Jack Heath requested that the Special Development Services Committee meeting include options reflecting Markham intensifying at different rates.

Moved by Councillor Amanda Collucci

Seconded by Councillor Alan Ho

1. **That the deputations by Don Given, Malone Given Parsons (Kennedy Elgin Development Ltd. and First Elgin Developments Inc, 11162 Kennedy Road & 4044 Elgin Mills Road), Claudio Brutto, Brutto Planning Consultant (property owners at 11288 Kennedy Road), and Peter Miasek, Unionville Residents Association, regarding the York Region Proposed Population and Employment Forecast and Land Needs Assessment to 2051 be received.**
2. That the staff report and presentation entitled "York Region Proposed Population and Employment Forecast and Land Needs Assessment to 2051" dated April 19, 2021 be received; and,
3. That staff be directed to undertake public consultation on the Region's Proposed Forecast and Land Needs Assessment to 2051 as outlined in this report, prior to reporting back to Council with comments for submission to York Region; and further,



4. That staff consider the comments from the Committee and public when preparing for the Special Development Services Committee meeting to educate Members of Council on York Region's Proposed Population and Employment Forecast and Land Needs Assessment to 2051.
5. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

## **9.2 PROVINCIAL CONSULTATION COMMENTS: GROWING THE SIZE OF THE GREENBELT (ERO 019-3136) (10.0)**

Arvin Prasad, Commissioner of Development Services, introduced the item.

Marg Wouters provided an overview of staff comments proposed to be submitted as part of the Provincial Consultation on Growing the Size of the Greenbelt (ERO 019-3136). Staff are recommending that the potential for additional urban river valley designations be considered comprehensively as part of Markham's next Official Plan review.

Marg Wouters provided clarification on Figure 2 of the report and was requested to provide an enlarged colour copy of the map to Regional Councillor Jack Heath.

Moved by Regional Councillor Jack Heath

Seconder by Deputy Mayor Don Hamilton

1. That the report entitled "Provincial Consultation Comments: Growing the Size of the Greenbelt (ERO 019-3136)" dated April 19, 2021 be received; and,
2. That this report be forwarded to the Ministry of Municipal Affairs and Housing (MMAH) and York Region as the City of Markham's comments on ERO posting 019-3136 and as an expression of continued support for the Greenbelt Plan; and further,
3. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**



**9.3 UNIONVILLE SUB-COMMITTEE MINUTES – MARCH 2, 2021 (10.0) -  
(MAIN STREET UNIONVILLE COMMUNITY VISION PLAN –  
IMPLEMENTATION, UPDATE ON THE UNIONVILLE STREETSCAPE  
MASTER PLAN AND UNIONVILLE BIA RETAIL ACTION PLAN)**

Moved by Deputy Mayor Don Hamilton

Seconded by Councillor Reid McAlpine

1. That the minutes of the Unionville Sub-Committee meeting held March 2, 2021, be received for information purposes; and,
2. That the Terms of Reference for the Unionville Subcommittee be amended to increase the number of appointed Councillors from four (4) to five (5); and,
3. That Councillor Isa Lee be appointed to the Unionville Subcommittee.

**Carried**

**9.4 PRELIMINARY REPORT APPLICATIONS BY 7750 BAYVIEW  
AVENUE LIMITED PARTNERSHIP (LIBERTY DEVELOPMENTS) FOR  
OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT  
FIVE (5) HIGH RISE APARTMENT TOWERS AT 7750 BAYVIEW  
AVENUE (SHOULDICE HOSPITAL)**

**FILE NO. PLAN 20 126269 (WARD 1) (10.3, 10.5)**

Arvin Prasad, Commissioner of Development Services introduced the item and advised that the next steps are for the development proposal to be presented at a future Statutory Public Meeting, and then for a staff recommendation report to be prepared.

Ron Blake, Senior Development Manager, Planning & Urban Design addressed the Committee and summarized the details outlined in the report.

David McKay, and Nicola Casciator, Liberty Developments provided a presentation on the development proposal located at 7750 Bayview Avenue on the Shouldice Hospital lands and noted that heritage cultural resources on the property are still being reviewed by Heritage Staff.

Alena Gotz, representing the Aileen Willowbrook Ratepayers Association, provided a deputation expressing concern regarding the height and density of the development proposal, and that it does not fit the character of the neighbourhood.



Ms. Gotz also suggested that the City should develop a vision for the Thornhill Centre prior to it being fully developed.

Committee provided the following feedback on the preliminary report:

- Noted the Thornhill community considers the Shouldice Hospital lands the jewel of Thornhill;
- Suggested that the development proposal should include purpose built rental units, and condominium units of various sizes;
- Suggested there needs to be a more suitable transition from the existing low rise community to the proposed higher density community;
- Noted that the collective higher density being proposed for the area is more suitable where there is higher order transit, and that the impact of the development proposals being proposed for this area should be considered collectively.

Councillor Keith Irish advised the public that no decision is being made at today's meeting and that there will be other opportunities for the public to provide input on this development proposal.

Moved by Councillor Keith Irish

Seconded by Regional Councillor Jack Heath

1. That the deputation by Alena Gotz, Aileen Willowbrook Ratepayers Association regarding Applications by 7750 Bayview Avenue Limited Partnership (Liberty Developments), for Official Plan and Zoning By-law Amendments to permit five (5) high rise apartment towers at 7750 Bayview Avenue (Shouldice Hospital), be received.
2. That the report dated April 19, 2021, entitled "Preliminary Report, Applications by 7750 Bayview Avenue Limited Partnership (Liberty Developments), for Official Plan and Zoning By-law Amendments to permit five (5) high rise apartment towers at 7750 Bayview Avenue (Shouldice Hospital), File No. PLAN 20 126269 (Ward 1)", be received.

**Carried**

**9.5 PRELIMINARY REPORT LIVANTE HOLDINGS (VICTORIA SQUARE WOODBINE) INC. APPLICATIONS FOR OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS TO PERMIT 179 TOWNHOUSE UNITS AT 10978, 10988 AND 11030 VICTORIA SQUARE BOULEVARD AND BLOCKS 97, 98**



**AND PART OF BLOCK 95, PLAN 65M-4328 FILE NO. PLAN 20 112387  
(WARD 2) (10.3, 10.5)**

Arvin Prasad, Commissioner of Development Services introduced the item.

Ron Blake, Senior Development Manager, Planning & Urban Design addressed the Committee and summarized the details outlined in the report. Mr. Blake advised that environmental clearance from the Ministry of Environment, Conservation, and Park will be required for this development proposal to proceed.

James Koutsovitis, Gatzios Planning and Development Consultants Inc., representing the applicant, provided a presentation on the development proposal for 179 townhomes at 10978 and 11030 Victoria Square Boulevard, which included the context plan, Highway 404 North Secondary Plan, approved draft plan of subdivision, conceptual site plan, conceptual elevations, proposed official plan amendment and proposed zoning by-law amendment.

Committee expressed concern regarding the contamination of the lands and the proposed private road transitioning into a public road.

Mr. Blake clarified that the source of the land contamination is unknown and that it is coming from an external source. Mr. Blake also advised that City will not accept land unless it is free of contamination and that it was anticipated that a lot of the contaminated soil and ground water will be removed from the site when the stacked townhomes underground garage is built.

Brian Lee, Director, Engineering explained the Ministry of Environment, Conservation, and Park requirements for cleaning up contaminated land, and the City of Markham's requirements for accepting the land. Mr. Lee also advised that the City's Operation's Department is currently reviewing the proposal for the private road transitioning into a public road.

Moved by Councillor Alan Ho

Seconded by Deputy Mayor Don Hamilton

1. That the report dated April 19, 2021 titled "PRELIMINARY REPORT, Livante Holdings (Victoria Square Woodbine) Inc., Applications for Official Plan and Zoning By-law Amendments to permit 179 townhouse units at 10978, 10988 and 11030 Victoria Square Boulevard and Blocks 97, 98 and Part of Block 95, Plan 65M-4328, File No. PLAN 20 112387 (Ward 2)", be received.

**Carried**



## **10. REGULAR REPORTS - TRANSPORTATION AND INFRASTRUCTURE ISSUES**

### **10.1 AUTHORITY TO PROVIDE DEVELOPMENT CHARGE (DC) CREDITS AND/OR REIMBURSEMENTS TO THE TRUSTEE OF BERCZY GLEN LANDOWNERS GROUP INC. AND TO MATTAMY (BERCZY GLEN) LIMITED (WARDS 2 AND 6) (7.11, 5.0)**

Brian Lee, Director, Engineering, addressed the Committee and summarized the details outlined in the report. The report is requesting authority to provide development charge (DC) credits and/or reimbursements to the Trustee of Berczy Glen Landowners Group Inc. and to Mattamy (Berczy Glen) Limited. Mr. Lee advised that both landowners are eligible for DC credit and/or reimbursement because they are building growth related infrastructure that have elements that have a citywide benefit.

Moved by Councillor Alan Ho

Seconded by Deputy Mayor Don Hamilton

1. That the report entitled “Authority to provide Development Charge (DC) Credits and/or Reimbursements to the Trustee of Berczy Glen Landowners Group Inc. and to Mattamy (Berczy Glen) Limited (Wards 2 and 6)” be received; and,
2. That Council authorize a City-Wide Hard Development Charge Credit and/or Reimbursement not exceeding \$8,000,000.00 to the Trustee of Berczy Glen Landowners Group Inc. for the design, contract administration, and construction costs associated with the construction of a bridge crossing the Berczy Creek (“North Bridge”) for the northerly east-west collector road (Street ‘D’) in the Berczy Glen Community; and,
3. That Council authorize a City-Wide Hard Development Charge Credit and/or Reimbursement not exceeding \$1,476,960.00, to the Trustee of Berczy Glen Landowners Group Inc. for the design, contract administration, and construction costs associated with the construction of the watermain on Warden Avenue between Major Mackenzie Drive and Street ‘D’; and,
4. That Council authorize the amount to be credited and/or reimbursed to the Trustee of Berczy Glen Landowners Group Inc. be increased after the update of the City-Wide Hard Development Charges By-law in 2022 to reflect the updated cost of the watermain on Warden Avenue, between Major Mackenzie Drive and Street ‘D’ which is currently estimated at \$6,100,000.00; and,



5. That Council authorize a City-Wide Hard Development Charge Credit and/or Reimbursement not exceeding \$639,904.00, to Mattamy (Berczy Glen) Limited for the design, contract administration, and construction costs associated with the construction of the watermain on Elgin Mills Road between Victoria Square Boulevard and Street 'A'; and,
6. That Council authorize the amount to be credited and/or reimbursed to Mattamy (Berczy Glen) Limited be increased after the update of the City-Wide Hard Development Charges By-law in 2022 to reflect the updated cost of the watermain on Elgin Mills Road, between Victoria Square Boulevard and Street 'A' which is currently estimated at \$2,200,000.00; and,
7. That the Mayor and Clerk be authorized to execute a Construction Agreement with the Trustee of Berczy Glen Landowners Group Inc. or its successors in title for the construction of the North Bridge and watermain on Warden Avenue upon terms to the satisfaction of the Director of Engineering and the City Solicitor, or their respective designates; and,
8. That the Mayor and Clerk be authorized to execute a Construction Agreement with Mattamy (Berczy Glen) Limited or its successors in title for the construction of a watermain on Elgin Mills Road to the satisfaction of the Director of Engineering and the City Solicitor, or their respective designates; and,
9. That the Mayor and Clerk be authorized to execute a Development Charge Credit and/or Reimbursement Agreements, if required, in accordance with the City's Development Charge Credit and Reimbursement Policy, with the Trustee of Berczy Glen Landowners Group Inc. and/or with Mattamy (Berczy Glen) Limited, or its successors in title to the satisfaction of the Treasurer and the City Solicitor, or their respective delegates; and,
10. That all of the above credits and/or reimbursements shall be the absolute value of the credits and/or reimbursements, and that HST, interest and/or indexing shall not be credited and/or reimbursed; and further,
11. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

## **11. MOTIONS**



There were no motions.

**12. NOTICES OF MOTION**

Councillor Keith Irish assumed the Chair at 2:05 PM and Regional Councillor Jones introduced a Notice of Motion entitled GTA West Corridor (413 Highway).

The Clerk read the motion and advised that it will be included on the May 3 Development Services Committee agenda for discussion.

Deputy Mayor Don Hamilton assumed the Chair at 2:20 PM and Regional Councillor Jim Jones introduced the Notice of Motion: entitled Yonge North Subway Extension – Markham Three Station Area Study.

The Clerk read the motion and advised that it will be included on the May 3 Development Services Committee Agenda for discussion.

Committee requested that the motions be circulated to Members of Council via email.

**13. NEW/OTHER BUSINESS**

Councillor Karen Rea requested an update on how parking issues are being resolved in areas with Multi Use Pathways.

Brian Lee, Director, Engineering, advised that staff will respond to Councillor Karen Rea by email.

**14. ANNOUNCEMENTS**

There were no announcements.

**15. ADJOURNMENT**

Moved by Regional Councillor Joe Li

Seconded by Councillor Andrew Keyes

That the Development Services Committee adjourn at 2:32 PM.

Carried





# Electronic Development Services Committee Meeting

## Minutes

**Meeting Number 8**

**April 21, 2021, 1:00 PM - 4:30 PM**

**Live streamed**

Roll Call	<p>Mayor Frank Scarpitti Deputy Mayor Don Hamilton Regional Councillor Jack Heath Regional Councillor Joe Li Regional Councillor Jim Jones Councillor Keith Irish Councillor Alan Ho</p>	<p>Councillor Reid McAlpine Councillor Karen Rea Councillor Andrew Keyes Councillor Amanda Collucci Councillor Khalid Usman Councillor Isa Lee</p>
Staff	<p>Andy Taylor, Chief Administrative Officer Arvin Prasad, Commissioner, Development Services Claudia Storto, City Solicitor and Director of Human Resources Biju Karumanchery, Director, Planning &amp; Urban Design Brian Lee, Director, Engineering Ron Blake, Senior Development Manager, Planning &amp; Urban Design Ronji Borooah, City Architect Loy Cheah, Senior Manager, Transportation Lily-Ann D'Souza, Planner II, Policy &amp; Research</p>	<p>Lilli Duoba, Manager, Natural Heritage Bryan Frois, Chief of Staff, Mayor's Office Darryl Lyons, Manager, Policy Stacia Muradali, Acting Manager, Development, East District Nhat-Anh Nguyen, Senior Manager, Development &amp; Environmental Engineering Soran Sito, Manager, Environmental Engineering Scott Chapman, Corporate Privacy &amp; Records Coordinator Hristina Giantsopoulos, Election &amp; Committee Coordinator</p>

**Alternate formats for this document are available upon request**

### 1. CALL TO ORDER

Under the authority of Bill 197 (*COVID-19 Economic Recovery Act, 2020*) and the City of Markham's *Council Procedural By-law*, and in consideration of the advice of public health authorities, this meeting was held electronically with members of Development Service Committee, staff, and guests participating remotely.



The Development Services Committee meeting convened at 1:02 PM with Regional Councillor Jim Jones presiding as Chair.

**2. DISCLOSURE OF PECUNIARY INTEREST**

None disclosed.

**3. DEPUTATIONS**

There were no deputations.

**4. COMMUNICATIONS**

Communications were submitted for the following item:

7.1 - Markham Road – Mount Joy Secondary Plan Study - Interim Report and Demonstration of 3D Model

**5. PETITIONS**

There were no petitions.

**6. REGULAR REPORTS - TRANSPORTATION AND INFRASTRUCTURE ISSUES**

**6.1 REQUEST TO INCREASE PURCHASE ORDER FOR CONSULTING ENGINEERING SERVICES TO DESIGN EXTENSION OF TRUNK SEWER AND WATERMAIN IN 404 NORTH SECONDARY PLAN AREA (5.5, 5.3)**

Brian Lee, Director, Engineering, addressed the Committee and provided a summary of the staff report.

There was discussion regarding the physical constraints to the original scope of work revealed during the engineering fieldwork phase. Staff confirmed that the City's minimum slope design criteria for the trunk sanitary sewer will be achieved through the revised design concept.

The Committee inquired as to the anticipated timetable and funding source for the increased scope of work. It was advised that the additional design work will be funded entirely through development charges and is expected to proceed as quickly as possible. Staff also provided the Committee with an explanation of the Engineering Department Capital Administration Fee.



Moved by Councillor Alan Ho

Seconded by Mayor Frank Scarpitti

1. That the report entitled “Request to Increase Purchase Order for Consulting Engineering Services to Design Extension of Trunk Sewer and Watermain in Highway 404 North Secondary Plan Area” be received; and,
2. That Purchase Order PD 18309 issued to SCS Consulting Group Ltd. for the detailed design of the extension of the existing trunk watermain and trunk sanitary sewer on Woodbine Avenue be increased by \$391,404.58 inclusive of HST impact, to cover the additional design work required for the project; and,
3. That Purchase Order PD 18310 for the contingency for the detailed design of the trunk watermain and trunk sanitary sewer on Woodbine Avenue be increased by \$39,140.46 inclusive of HST impact, to cover any additional design work required for the project and that authorization be granted to approve expenditures of this contingency amount up to the specified limit in accordance with the Expenditure Control Policy; and,
4. That the Engineering Department Capital Administration Fee in the amount of \$54,665.40 , inclusive of HST impact, be transferred to revenue account [640-998-8871(Capital Admin Fees); and,
5. That the 2019 Engineering Capital Account 19257 (Consulting Engineering Services for Hwy 404 North Sec Plan) be increased to cover the additional project estimates in the amount of \$485,210.44 inclusive of HST impact, and funded from City Wide Hard Development Charges Reserve, and further,
6. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

## **7. REGULAR REPORTS - DEVELOPMENT AND POLICY ISSUES**

### **7.1 MARKHAM ROAD - MOUNT JOY SECONDARY PLAN STUDY - INTERIM REPORT AND DEMONSTRATION OF 3D MODEL (10.4)**

Arvin Prasad, Commissioner, Development Services, introduced the item and outlined the purpose of the staff report and presentation.

Darryl Lyons, Manager, Policy, delivered a presentation on the Markham Road – Mount Joy Secondary Plan Study which introduced and provided an overview of the Interim Report. Members of Development Services Committee were also provided with an overview and update on the key framework elements contained



in the draft demonstration plan. The status, timelines, and next steps of the Study were also discussed.

Lily-Ann D'Souza, Planner II, Policy & Research, guided members of Development Services Committee through a 3D model flythrough of the draft demonstration plan for the Markham Road – Mount Joy Secondary Plan area.

The Committee discussed the following relative to the Markham Road – Mount Joy Secondary Plan Study Interim Report and 3D Model Demonstration:

- Assessing the technical feasibility and potential cost-effectiveness of constructing one or more pedestrian crossings underneath the Stouffville GO Transit rail corridor as an alternative to bridges;
- Anticipated amount and distribution of parkland to be provided within the secondary plan area, recognition of area constraints to accommodate park space, and consideration of opportunities to locate park and recreational uses adjacent to natural amenities, open spaces, and recreational uses;
- Continuing to consult with Metrolinx to determine the technical feasibility of a GO Transit station at Major Mackenzie Drive East;
- Providing for flexible and potential re-distribution of population and employment densities within the secondary plan area based on the feasibility of projected higher-order transit servicing capacity;
- Potential need for additional grade separations at local road crossings over the Stouffville GO Transit rail corridor to facilitate safe east/west mobility and improved level of service for all modes of travel;
- Continuing to consider strategies for creating sustainable travel patterns and mitigating traffic impacts on surrounding established neighbourhoods, including opportunities for transit- and amenity-integrated development, safe and accessible active transportation infrastructure, and the anticipated extension of the Donald Cousens Parkway to Highway 48; and,
- Considering the potential implications of York Region's draft forecast to 2051 which proposes to bring the 'white belt' lands located immediately north of the secondary plan area into the urban boundary relative to the Study objectives.

Moved by Regional Councillor Jack Heath

Seconded by Deputy Mayor Don Hamilton

1. That the report and presentation dated April 21, 2021 entitled “Markham Road – Mount Joy Secondary Plan Study: Interim Report” be received; and,



2. **That the written communications submitted by KLM Planning Partners Inc. on behalf of 9781 Markham Road Limited Partnership; and Humphries Planning Group Inc. on behalf of Krashnik Investments Limited be received; and,**
3. That the report dated April 21, 2021 entitled “Markham Road – Mount Joy Secondary Plan Study: Interim Report” be released for public consultation and input towards the preparation of the final demonstration plan; and,
4. That **Development Services Committee endorse in principle** the conversion of the Mount Joy Business Park employment lands, including the site-specific conversion request for 77 Anderson Avenue, from protected employment area to an appropriate mix of uses to be determined through this Study to allow for a broader mix of employment and non-employment uses; and further,
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

## **8. MOTIONS**

There were no motions.

## **9. NOTICES OF MOTION**

There were no notices of motion.

## **10. NEW/OTHER BUSINESS**

There was no new / other business.

## **11. ANNOUNCEMENTS**

There were no announcements.

## **12. ADJOURNMENT**

Moved by Councillor Alan Ho  
Seconded by Councillor Isa Lee

That the Development Services Committee meeting adjourn at 3:00 PM.

**Carried**



**From:** Simon Chan  
**Sent:** Monday, April 26, 2021 12:05 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** Markham No. Plan 20-136386 - 144 Main Street - SmartCentre/Revera

**CAUTION:** This email originated from a source outside the City of Markham. **DO NOT CLICK** on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Dear Sir/madam,

**RE: Markham Plan #20 136386**  
**(Municipally located at 134/136/140/144/152 Main St. & 12 Wilson St.)**

I am reaching out to you with many concerns regarding the current proposal by Markham Main St RR Inc. as follows:

- 1) The proposed height at 6 stories, even with the terraced setbacks, does not conform with the existing heritage main street architecture as all current buildings fronting onto Main St, Markham range from 1 story to 3 stories high. This contravenes the Region of York Official Plan (2010) section 3.4.8 that calls for the subject site to reflect the areas heritage, character, and streetscape. Proposed height of 6 stories (with setback) creates an imposing structure besides low rise residential directly to the north, south, and east that results in a jarring difference in height which lacks cohesion with the existing community. A building 3 stories high will better fit within the context of the neighborhood and promote a harmonious impact and follows the Region of York Official Plan (2010) section 5.2.8 which states that new designs should “complement the character of the existing areas and fosters a sense of place”.
- 2) Sunlight and shadows will be a major concern for adjacent residential homes directly to the north and west of the proposed complex. The opinion on Page 65 of the Planning and Urban Design Rationale document “that shadow impacts are minimal and proposed development will not create unacceptable shadow impacts” is very subjective and can be completely alleviated by a lower building height at 3 stories tall.
- 3) Adding an additional 300+ seniors to the existing 180+ residents in the immediate area (18 and 20 Water St. senior residences) without the additional basic services such as supermarkets within walking distance is a major concern especially since the majority of residents would require convenient commercial services within **walking** distance. Any further density increase within the area should include more commercial space including a grocery store / supermarket in the immediate area “so that residents can walk to meet their daily needs” as per the Region of York Official Plan (2010) section 3.1.3.



- 4) Setback of 3.7 meters from townhomes directly east of the site on the west property line is insufficient with balcony's facing directly onto the existing residential terraces/windows resulting in a lack of privacy for current residents.
- 5) One entrance/exit in and out of the complex for all vehicular traffic including refuse collection and moving trucks on the east side directly next to the townhomes will result in excessive and continuous noise and pollution to the townhomes directly north of this site's main driveway, which deviates from the Region of York Official Plan (2010) section 7.2 in making communities more livable by creating an environment that is pleasant and safe with less noise and pollution. A main driveway directly on Wilson St would be more suitable for this complex to minimize the disturbance to the existing community along Wilson St. and Water St. This is also taking into account the diversion of traffic for the commercial restaurants onto Water Street for parking which may also pose a safety risk for seniors from 18 and 20 Water Street complexes who regularly cross the street onto Wilson Street and onto the shops along Main St. This can be completely resolved by an alternative entrance/exit on Main St or Wilson St.
- 6) Existing Traffic volume analysis of 2% growth per year does **not seem to take** into account of new condo's pending construction north of 16<sup>th</sup> Ave and Markham Road. Rush hour traffic along Main St is a standstill pre-pandemic and post-pandemic so adding another further 300+ suites complex will further negatively impact traffic within the area. This can be alleviated by reducing the number of suites in the proposed project and ensure Markham continues to grow within the framework of existing infrastructures.

In speaking with various neighbors, the proposed development does not represent good planning and the community opposes the sizing of this proposal. We would request that the report be referred back to staff for more work and revisions to address the concerns raised and to engage further public consultation.

You can call me at the number below if you wish to discuss further.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Simon Chan', is written over a horizontal line.

Simon Chan  
Water Street Resident, Markham ON



**From:** Chris Madsen  
**Sent:** Tuesday, April 20, 2021 2:43 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** Please note my objection to Highway 413

**CAUTION:** This email originated from a source outside the City of Markham. **DO NOT CLICK** on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Thanks,

*Chris Madsen,*



**From:** Jim Winstone  
**Sent:** Tuesday, April 20, 2021 2:49 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** Hwy. 413

**CAUTION:** This email originated from a source outside the City of Markham. **DO NOT CLICK** on any links or attachments, or reply unless you recognize the sender and know the content is safe.

We need this like a hole in the head. Will they build it and then sell it to cover their debt load?

Jim Winstone



**From:** Michael  
**Sent:** Tuesday, April 20, 2021 3:48 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** NO Hwy 413

**CAUTION:** This email originated from a source outside the City of Markham. **DO NOT CLICK** on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Good day folks;

I wanted to add my voice to those who oppose the 413. I would like to add an argument to the NO side you may not have heard. There are many valid reasons why building this expensive highway is absurd; but chief among them is that; due to already existing, soon to be perfected, new technology, the 413 will not be needed. The new tech. of which I speak is the self-driving Uber-style taxi. These electric vehicles will be so reasonable and efficient that their effect will be a 50-80% reduction in autos using the roads within 10 years or so! People will use them simply because they are cheaper and more convenient than owning a car.  
thank you for your attention

Michael Robertson



**From:** Surjit Sachdev

**Sent:** Wednesday, April 21, 2021 4:53 AM

Hello,

Please be advised that I support this motion by R.C. Jim Jones and C. Khalid Usman to say NO to HWY 413.

Thank you,

Sincerely,

Surjit Sachdev

***Anand Vihar – The Centre for Dignified Living***

Markham/York Region



**Sent:** Thursday, April 22, 2021 12:25 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** Say NO to Hwy 413

**CAUTION: This email originated from a source outside the City of Markham. DO NOT CLICK on any links or attachments, or reply unless you recognize the sender and know the content is safe.**

I support Councillor Jones' motion to say NO to Hwy 413.

The proposed Highway 413 has been previously assessed by an expert panel and found that it would only save drivers **30-60 seconds** per trip. This is a devastatingly meagre benefit for a project that will cost taxpayers a minimum of **\$6-10 billion**, pave over **2,000 acres** of Class 1 and Class 2 farmland, cross rivers and watercourses **85 times**, increase gas emissions, accelerate sprawl and increase car dependence.

All this in a region where many municipalities have declared a Climate Emergency. Building this new highway is incompatible with action on climate change.

This highway is redundant, unnecessary, costly and harmful. It is not the way to meet the region's transportation needs. Committing to public transit solutions like improving GO service, cycling infrastructure, rail transitway and other transportation methods would move a greater number of people, faster and at a lesser cost.

We need to build a future based on collective well-being, not focus on a method that has been proven to create induced demand and always fail at solving traffic congestion. Let us focus on evidence-based solutions. Let's put people's health and well-being first and build resilience to prevent future crises.

I strongly oppose Highway 413. It will cause irreversible damage to habitats, agricultural lands, wildlife and watersheds in Ontario while costing taxpayers billions of dollars. It will increase traffic without appropriate transit solutions, create car dependence, and enable low-density sprawl. This project directly conflicts with our current climate crisis.

Sincerely,  
Laura Tipton



**From:** Tom Poulis  
**Sent:** Friday, April 23, 2021 2:23 PM  
**To:** Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>  
**Subject:** 413

**CAUTION:** This email originated from a source outside the City of Markham. **DO NOT CLICK** on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Badly needed infrastructure project. Markham is gridlocked under normal times not so much during the Pandemic. Lets do the right thing plan ahead and get this project moving.

Thomas Poulis



-----Original Message-----

From: Louisa Santoro

Sent: Thursday, April 29, 2021 7:19 AM

To: Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>

Subject: DEVELOPMENT SERVICES MEETING MAY 3, 2021

CAUTION: This email originated from a source outside the City of Markham. DO NOT CLICK on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Chairperson, Mayor & Council

Good morning, my name is Louisa Santoro and I've been a resident of York Region since 1981, currently living in Kleinburg where the proposed HWY 413 will run approx. 450 meters behind my house.

The proposed 59 kilometre HWY 413 is an old idea, dropped by the Liberal government after a highly esteemed panel found it would only save commuters less than a minute while increasing CARBON EMISSIONS!

If you build the proposed HWY 413, cars will come, so everything will be the same, nothing will change. Where there are roads, there will be traffic. This HWY 413 will not solve gridlock, it will make it worse. It will worsen the greenhouse gases.

The proposed HWY 413 will add 700,000 tonnes of greenhouse gas emissions into the atmosphere every year by 2050, according to a new report by an environmental advocacy group. You clearly do not have concern for this. It's been proven that living close to highways causes difficulties to our health.

We need more green spaces!

We need access to nature for our mental state especially during the COVID pandemic which is getting worse instead of better which will be here for a while.

The proposed HWY 413 will pave over 2,000 acres of farmland, cut across over 85 waterways and pave nearly 400 acres of protected Greenbelt land in VAUGHAN. York Region has the most pristine farmland in all of Ontario.

The proposed HWY 413 will only benefit the developers and fill their pockets. It doesn't benefit your constituents, the taxpayers.

So I hope that the City of Markham strongly objects to the proposed GTA WEST CORRIDOR (HWY 413)

Thank you

Louisa Santoro



Dear Members of Markham Council,

My name is Angela Grella, and I own residential property in Markham. I am requesting that the Council of the City of Markham strongly objects to the proposed GTA West Corridor and Transmission Corridor as it is currently defined; and fully supports the Environmental Defense request for a Federal Environmental Impact Study pursuant to s.9(1) of the Impact Assessment Act (I.A.A.), prior to any advancement of this project.

The residents of York Region have been shocked into action by the mounting anger over the PC government's decision to unilaterally ram through a highway construction project that will have devastating consequences on climate change, GTA watersheds, local ecosystems and the environment in general. The world's largest protected green space, Ontario's Greenbelt, would see the giant asphalt corridor run right along its southern edge and, in some places, right through the sensitive natural environment covered by provincial legislation. Moreover, sustaining the GTA's watershed, which prevents flooding while ensuring clean water and healthy ecosystems is critical to the health of Ontario's most populous region. Building a highway across these valuable lands goes against everything the Province has done over the last two decades to protect the environment.

The [expert advisory panel report](#) which led to the cancellation of this highway in 2018 outlined a number of reasons that the highway is not a good option to move people in the GTA West Region. In addition, Mississauga, Peel Regional Council, Halton Region, Orangeville, Halton Hills, Halton Region, King City and Vaughan have all chosen to oppose Highway 413 based on local opposition.

The mega billion-dollar cost that the Ford government would spend on this highway does not justify the 30 seconds it would save on people's commute. There is no proof that this highway will reduce traffic congestion. So why build it?

The 413 corridor will wreak havoc on the environment, encourage residential sprawl and dependence on the car as a significant means of transportation. Furthermore, Ontario will also lose critical farmland to feed our growing population and support local economies. The building of a mega highway is not forward thinking. Time to invest in smarter solutions. For the same \$6 billion estimated cost of the project, the GTA could have a first class rail system that would take 3 times as many vehicles off the road. I advocate that the Council of the City of Markham ask that the province study other options that could replace Highway 413, and request that the budget for the GTA corridor instead be put toward regionally connected transit, active transportation, and other sustainable modes of transportation. There are other ways of moving people and goods around. Highway 407 is underutilized and the Vaughan and Yonge Street subway lines must continue to be tunnelled north into York Region. Congestion could be solved without paving over farmland and wetlands and incentivizing sprawl. The Region of York deserves better. The Region of York has to build on its commitment to foster a region that is bikeable, walkable and sustainable.

Please do not ignore science and evidence-based arguments. It is time to critically examine our assumptions about congestion and try something new. We will never be able



to widen our way out of congestion, and we need to stop wasting taxpayers' money on trying. This council has the power to oppose this destructive and unnecessary highway and I respectfully urge the council to move a motion to oppose the construction of Highway 413 and vote to support a full Federal Environmental Assessment, so that no construction may begin until we know all the facts about the environmental impacts. A provincial environmental assessment is not enough. The province already stripped major sections out of the Highway's EA and changed the rules to allow construction to begin before the EA is even completed, so a federal environmental assessment to help determine the full impact of the highways is critically needed.

Sincerely,

Angela Grella



April 30, 2021

**Dear Markham Development Services Committee Members**

I write to you as a resident of the hamlet of Laskay, in King Township. Arguably the community that will be most severely impacted by the 413. Laskay is very close to the terminus of 413 at 400.

Watching the March 18 York Regional Council meeting was entertaining as well as surprising. King Township proposed stopping the 413 – quite a change. Then several others switched their allegiances. But not any of the Vaughan Regional Councillors – as they struggled to remain unnoticed. Markham was almost as surprising with staunch 413 support from Mayor Scarpetti.

Superficially, it would seem that Markham has no horse in this race, but that seemed incorrect, as we listened to Mayor Scarpetti take the heat for the Vaughan avoiders. So, to the uninformed public, it seemed there must be some sort of Legacy deal. Maybe its even a good deal, but too complicated for the rest of us to understand.

Long term politicians can get tied in knots by Legacy deals. For some reason, it seems to be seen as weak to change. Personally, I am always proudest with myself when I admit I was wrong.

Have you noticed that Ontario Society of Professional Engineers (OSPE) has suggested the Highway 413 should be stopped?

For my whole life, I've relied on the 400 to get to the North. While the 413 can probably improve the 401-traffic flow situation, west of the 400, I really believe it will significantly impede Highway 400 traffic flow. But I haven't yet seen any studies on the 400 traffic flow issue.

Markham has a reputation for high tech data solutions. And the American market is set to boom. Smart roads offer a tempting market. As more transponder technology gets into our automobiles – encouraged by our insurance companies, there is an opportunity to turn transportation towards Smart Roads, improving traffic flow with better vehicle monitoring. On the issue of good traffic flow, installing road sensors that monitor truck loads – and make sure they're using the approved routes might eliminate some of the scofflaw trucks and also offer a technology product for your Markham innovators. One of my AI associates in Montreal tells me they have the ability to detect overloaded trucks on the new Champlain Bridge – though that is not being used operationally yet.

Those of you in Markham would probably be the municipality best served by allowing even just the unloaded trucks to use the 407 at significantly reduced fees. If your innovators can incorporate load transponders to monitor truck loads or build sensors into the on ramps, and then work with the 407 owners to implement it, the empty trucks should be able to get greatly reduced 407 fees. Highway degradation is predominantly a function of load. You can no doubt notice that the 407 design was pretty good – or at least there's no big slowdown at the 400. The 413 is not going to improve Markham's transportation problem – the way that lowering truck fees on the 407 will.

Yours truly

Sherry Draisey



**Deputation on GTA-West Corridor (Highway 413)**  
**to Markham Development Services Committee, May 3, 2021, Agenda Item 9.1**

Peter Miasek

TAO-Hwy413deputation2021-05-03

I'm representing an NGO called Transport Action Ontario. We are an expert citizens group focussing on public transportation across the Province. I'm here to speak in support of the motion to oppose the GTA-West Corridor, also known as Highway 413.

On June 3, 1971, Premier Bill Davis rose in the Ontario legislature and stated "Cities were built for people and not cars. If we are building a transportation system to serve the automobile, the Spadina Expressway would be a good place to start. But if we are building a transportation system to serve people, the Spadina Expressway is a good place to stop". That was a watershed moment. It was the first time that an expressway project had been seriously questioned in Ontario. The prosperity of downtown Toronto now rested on transit, and the Province poured money into GO Transit to make it happen.

Expressway construction continued unabated in suburbia, with the 403, 404, 407, 410 and 427. But now Ontario is at another watershed moment with the GTA-West corridor, only this time it's not people affected, but greenbelt, farmland, climate change and urban sprawl.

Although this highway does not touch Markham, it runs for about 10 km in York Region. As York's largest municipality, Markham should take a stand, as should all residents and taxpayers in Ontario.

The motion discusses all the reasons to oppose this highway. The ones that are most important to us are:

- The fact that a Provincial Advisory Panel recommended in 2018 that the Highway be cancelled.
- The significant flaws in the Province's environmental assessment to date, as documented by the Provincial Advisory Panel in 2018.
- The fact that induced travel, as shown in hundreds of studies, means that new roads will just fill up again with traffic, due to people changing their travel behaviour. Induced travel can be stopped by tolling, but the province is suspiciously silent on whether this road will be tolled.
- The environmental and climate change impacts. A report last week calculated an extra 700,000 tonnes/yr. of CO<sub>2</sub>, due to the induced travel from Highway 413.
- The fact that rapid transit can move 4 times the people for the same dollars and that freight can be moved more cost-effectively by a truck toll discount on the 407, versus building the 413.

So seize the moment and support all 9 resolutions in the Motion! Oppose the highway, support rapid transit and push for a federal environmental assessment.



Hello,

I would like to be added and speak at the meeting May 3/21 regarding 10-20 Fincham Avenue proposed development. Please submit the below to the Development Services Committee regarding the below....

Please note concerns regarding the proposed 10 semi-detached and 7 townhouse development at 10-20 Fincham Avenue.

- 1) Townhouse height (three story) and width not compatible with existing 30 year established low density single detached 2 & 3 car garage homes in the Markham village neighbourhood.
- 2) Density of 17 units is not compatible with houses abutting next to development which are all single detached homes.
- 3) Property value and of single detached homes next to 10-20 Fincham development will diminish due to the height and density of project which is incompatible with all properties south of 16<sup>th</sup> Avenue.
- 4) Negative impact of privacy of properties next to development.
- 5) Incompatible scale and density of proposed project as there is a lack of greenspace, trees and grass, incompatible lot frontage with existing neighborhood.
- 6) This lot is 1 acre and typically the maximum allowed units are 13 not 17.

Recommend to build single detached homes to promote harmonious fit and compatibility with the existing established neighbourhood at 10 – 20 Fincham Avenue.

Thanks,

Sheila Coleman



-----Original Message-----

From: Lesley James

Sent: Monday, April 26, 2021 11:50 PM

To: Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>

Subject: 10-20 Fincham Avenue: May 3rd Meeting

CAUTION: This email originated from a source outside the City of Markham. DO NOT CLICK on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Hello,

I am opposed to this 17 unit townhouse development in such a small area.

Please send me the registration info or zoom link for the May 3rd Meeting.

Thank you,  
Lesley James

Markham Resident for 21 years



-----Original Message-----

From: Liza Lyon

Sent: Wednesday, April 28, 2021 11:35 PM

To: Clerks Public <[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)>

Subject: Notice - May 3, 2021 Development Services Committee - Item No. - 13.1.2 ADVICE THAT IS SUBJECT TO SOLICITOR-CLIENT PRIVILEGE, INCLUDING COMMUNICATIONS NECESSARY FOR THAT PURPOSE; (10-20 FINCHAM AVENUE)

CAUTION: This email originated from a source outside the City of Markham. DO NOT CLICK on any links or attachments, or reply unless you recognize the sender and know the content is safe.

Hello Clerks Office,

My family would like to official put in our opposition to this proposal at 10-20 Fincham. This proposal doesn't meet the current housing bylaws for Markham Village. This proposal will:

- increase congestion at Fincham & 16th Ave.
- potentially cause accidents or injuries as there is a high school across the street plus an elementary nearby.
- devalue the properties of the surrounding neighbors thereby causing the current owners to lose money.
- proposal buildings are way to tall in comparison to the surrounding homes which happen to be single family dwelling homes.

Please advise what else is needed to help stop this development that isn't needed.

Regards,  
Liza.





## Electronic Development Services Public Meeting Minutes

**Meeting Number 4**

**April 6, 2021, 7:00 PM - 9:00 PM**

**Electronic Meeting**

Roll Call	Mayor Frank Scarpitti Deputy Mayor Don Hamilton Regional Councillor Jack Heath Regional Councillor Joe Li Regional Councillor Jim Jones Councillor Keith Irish	Councillor Alan Ho Councillor Reid McAlpine Councillor Karen Rea Councillor Andrew Keyes Councillor Amanda Collucci Councillor Isa Lee
Regrets	Councillor Khalid Usman	
Staff	Andy Taylor, Chief Administrative Officer Arvin Prasad, Commissioner Development Services Ron Blake, Senior Development Manager, Planning & Urban Design Sabrina Bordone, Senior Planner, Central District	Dimitri Pagratis, Senior Planner, Central District Laura Gold, Council/Committee Coordinator Grace Lombardi, Election & Committee Coordinator Stephen Lue, Manager of Development

**Alternate formats for this document are available upon request**

---

### **1. CALL TO ORDER**

The Development Services Public Meeting convened at 7:05 PM in the Council Chamber with Councillor Keith Irish in the Chair.

### **2. DISCLOSURE OF PECUNIARY INTEREST**

There were no disclosures of pecuniary interest.



#### 4. REPORTS

##### 4.1 **PRELIMINARY REPORT, LIFETIME 8200 WARDEN AVENUE GP INC. (LIFETIME DEVELOPMENTS), APPLICATIONS FOR OFFICIAL PLAN AMENDMENT, ZONING BY-LAW AMENDMENT, AND DRAFT PLAN OF SUBDIVISION TO PERMIT A HIGH RISE RESIDENTIAL MIXED-USE DEVELOPMENT LOCATED AT THE SOUTHWEST CORNER OF CEDARLAND DRIVE AND WARDEN AVENUE, MARKHAM CENTRE (WARD 8), FILE NO. PLAN 20 123292 (10.3, 10.5, 10.7)**

The Public Meeting this date was to consider an application submitted by Lifetime 8200 Warden Avenue GP Inc. for Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivision to permit a high rise residential mixed-use development located at the Southwest Corner of Cedarland Drive and Warden Avenue, Markham Centre (Ward 8) File No. PLAN 20 123292.

The Committee Clerk advised that 6569 notices were mailed on March 16, 2021, and a Public Meeting sign was posted on March 16, 2021.

There were 13 written submissions received regarding this proposal either expressing concern or in opposition of the development proposal.

Committee requested that staff investigate whether notification still needs to be provided within a 1 KM radius in the Markham Centre area.

Kate Cooper, Bousfield Inc., representing the applicant, provided a presentation regarding the proposal, the location, surrounding uses and outstanding issues.

David Pontarini, Hariri Pontarini Architects, representing the applicant, presented the proposed architecture design of the development proposal.

The public provided the following feedback on the development proposal:

1) Peter Miasek, representing the Unionville Residents Association

- Commented on the beautiful architecture;
- Expressed concern in regards to the height and density of the development proposal, and that there is no mention of parklands, affordable housing, or the uses (employment versus residential);
- Suggested the development proposal should support the principles of a sustainable walkable community;



- Suggested the development proposal needs to be re-worked.

2) Haydeen Poon

- Expressed concern that the development proposal will have a negative impact on the Viva Rapid Transit if the signaling is not adjusted (i.e. causing bus delays).

3) Paul Chiang, resident of 38 Cedarland Drive, and President of the Condominium Board

- Expressed concern in regards to the density and height of the development proposal, and that it does not fit the character of the neighbourhood.

4) Raymond Hau

- Suggested that there is a high demand for this type of condominium in Markham, and that the development proposal is suitable for the location.

5) Resident that called in comments (name unknown)

- Suggested that Markham Centre condominiums do not have enough parking, and asked if the development proposal will have parking spots available for residents to rent.

Committee provided the following feedback on the development proposal:

- Requested a letter confirming that the development proposal complies with the Buttonville Airport height restrictions;
- Suggested adding more transit stations or running a shuttle service for the condominium residents, as a way to mitigate traffic;
- Concerned that a project of this magnitude will set precedent for future developments in the Markham Centre area;
- Suggested the architecture was interesting and also noted that it may be a good location for landmark or iconic design;
- Requested that the development proposal include an automated waste system;
- Suggested moving building C back to its original position to preserve the northern view;
- Discussed the potential opportunity of having a park on the IBM daycare lands, and why the previous proposals for parkland on site were not approved by staff;



- Noted the importance of building parks in suitable locations and ensuring there is enough parkland within the Markham Centre area, but recognized that not all developments will include suitable land for parks;
- Suggested that Markham Centre include iconic or signature sites and that the City consider: how many of these sites there should be; where they should be located; and how they should be positioned.

Ms. Cooper responded to inquiries from the Committee and the public. The density of the development proposal has been reduced since the previous proposal. The FSI seems higher than it is due to the inclusion of a public road, and Markham's requirement to include above grade parking as part of the gross floor area. The applicant has a letter indicating that the development proposal complies with height restriction imposed due to the Buttonville Airport. The applicant is also working closely with City and Regional staff on addressing transit concerns. Adjusting the bus signals to address development in the area is currently being reviewed. Other ways of mitigating traffic will continue to be looked at, including the suggestion to operate a shuttle bus. If IBM decides to develop its daycare lands, the applicant will be unable to provide their parkland dedication. However, it was noted that there is not much developable land on the IBM daycare lands due to its proximity to the Rouge River.

Mr. Pontarini advised that Building C was moved to address staff comments to reduce the northern shadow over the parklands, and to provide greater separation between the towers to provide the northern buildings with a better view of the valley lands. Sustainability is being considered in the design of the development proposal.

Brian Brown, Lifetime Developments, responded to inquiries from the Committee and the public. The applicant is investigating the possibility of including purpose built rentals in the development proposal. It is too early to confirm the price per parking spot, but it cost approximately \$65-75K to build an underground parking spot. Any extra parking spots will likely be available for residents to rent or purchase. Parkland on site was previously considered, but staff did not support the proposed location on Warden Avenue as it presented several shortcomings..

Staff responded to inquiries from the Committee and the public. Meetings are currently being held with York Region and Viva to discuss transit availability relative to the development in the area and opportunities to enhance services. Staff are currently reviewing the height and density of the development proposal.

Moved by Mayor Frank Scarpitti

Seconded by Regional Councillor Jack Heath



1. That the deputations by Peter Miasek, Hayden Poon, Paul Chiang, and Raymond Hau regarding Lifetime 8200 Warden Avenue GP Inc. (Lifetime Developments), Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit a high rise residential mixed-use development located at the Southwest Corner of Cedarland Drive and Warden Avenue, Markham Centre (Ward 8), File No. PLAN 20 123292”, be received.
2. That the written submission by Herman Yu, Jiao Jinhui, Mia Yu, Yungling Chen, Cindy Chen, Jiayi Guo, Hy Kwok, Amy Cheung, Cynthia Cheng, Raymond Lee, Emily Chan, Debbie Wan, and Bernard Remedios regarding Lifetime 8200 Warden Avenue GP Inc. (Lifetime Developments), Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit a high rise residential mixed-use development located at the Southwest Corner of Cedarland Drive and Warden Avenue, Markham Centre (Ward 8), File No. PLAN 20 123292”, be received.
3. That the Development Services Commission report dated February 22, 2021, entitled “PRELIMINARY REPORT, Lifetime 8200 Warden Avenue GP Inc. (Lifetime Developments), Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit a high rise residential mixed-use development located at the Southwest Corner of Cedarland Drive and Warden Avenue, Markham Centre (Ward 8), File No. PLAN 20 123292”, be received.
4. That the Record of the Public Meeting held on April 6, 2021 with respect to the proposed Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision applications, be received.
5. That the applications by Lifetime 8200 Warden Avenue GP Inc. (Lifetime Developments) for a proposed Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision (PLAN 20 123292), be referred back to staff for a report and a recommendation.
6. That staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

**4.2 PRELIMINARY REPORT, ROCKPORT (UNIONVILLE) INC.,  
APPLICATIONS FOR OFFICIAL PLAN AND ZONING BY-LAW  
AMENDMENTS TO PERMIT A 32-STOREY STUDENT RESIDENCE**



**LOCATED NORTH OF ENTERPRISE BOULEVARD AND ON THE WEST SIDE OF BILL CROTHERS DRIVE**

The Public Meeting this date was to consider applications submitted by Rockport (Unionville) Inc., for Official Plan and Zoning By-law Amendment to permit a 32-storey student residence located north of Enterprise Boulevard and on the west side of Bill Crothers Drive, Markham Centre (Ward 3) File No. PLAN 20 129430.

The Committee Clerk advised that 2,068 notices were mailed on March 16, 2021, and a Public Meeting sign was posted on March 17, 2021. No written submissions were received regarding this proposal.

Sabrina Bordone, Senior Planner, provided a presentation regarding the proposal, the location, surrounding uses and outstanding issues.

Jack Winberg, Rockport Group, introduced his team and thanked staff for their assistance in reviewing the development proposal. He also advised that if awarded the project to build the student residence, the project will need to be completed under tight time constraints to accommodate York University's plans.

Kate Cooper, Bousfield Inc, representing the applicant, provided a presentation on the development proposal.

Guela Solow, Ark Inc., representing the applicant, presented the architectural design of the development proposal.

Mayor Frank Scarpitti and Regional Councillor Reid McAlpine thanked the Applicant for preparing an exciting proposal.

Peter Miasek, member of the City's Cycling and Pedestrian Advisory Committee provided a deputation suggesting that the pedestrian and cycling facilities should be separated if possible to avoid conflict between pedestrians and cyclists.

Committee provided the following feedback on the development proposal:

- Expressed concern in regards to using the property as a residential building if the contract is not awarded;
- Suggested the cycling and pedestrian facilities be separated;
- Noted the importance of connecting the cycling and pedestrian pathways with places students would like to go;
- Inquired if the privacy of the seniors living at Amica Seniors Residence has been considered;
- Inquired where the loading dock will be located.



In response to inquiries from the Committee and the public, the applicant advised that the building has been designed to be flexible if not awarded the contract to build a student residence. The development proposal will include significantly less units if it is developed as a residential building. The building is being designed so that the loading dock is obscured. The applicant will consider having separate cycling and pedestrian facilities.

In response to inquiries from the Committee and the public, staff advised that the student residence will include in-house food services. Staff also advised that connectivity is a guiding principal in the Markham Centre Secondary Plan..

Committee requested that the Official Plan and Zoning By-law Amendment to permit a 32-storey student residence located north of Enterprise Boulevard and on the west side of Bill Crothers Drive, Markham Centre go directly to Council when staff have completed all necessary work to move the application forward.

Moved by Councillor Reid McAlpine

Seconded by Mayor Frank Scarpitti

1. That the Development Services Commission report dated February 22, 2021, entitled "Preliminary Report, Rockport (Unionville) Inc., Applications for Official Plan and Zoning By-law Amendments to permit a 32-storey student residence located north of Enterprise Boulevard and on the west side of Bill Crothers Drive, Markham Centre (Ward 3), File No. PLAN 20 129430", be
2. That the Record of the Public Meeting held on April 6, 2021 with respect to the proposed Official Plan Amendment and Zoning By-law Amendment applications, be
3. That the applications by Rockport Unionville Inc. for a proposed Official Plan Amendment and Zoning By-law Amendment (PLAN 20 129430) be approved and the draft implementing Official Plan Amendment and Zoning By-law Amendment be finalized and enacted without further notice.
4. That staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**



## **5. ADJOURNMENT**

Moved by Regional Councillor Joe Li  
Seconded by Councillor Andrew Keyes

The Development Services Public Meeting adjourned at 9:31 PM.

Carried





## Electronic Development Services Public Meeting Minutes

**Meeting Number 5**

**April 13, 2021, 7:00 PM - 9:00 PM**

**Electronic Meeting**

Roll Call	Mayor Frank Scarpitti	Councillor Reid McAlpine
	Deputy Mayor Don Hamilton	Councillor Karen Rea
	Regional Councillor Jack Heath	Councillor Andrew Keyes
	Regional Councillor Joe Li	Councillor Amanda Collucci
	Regional Councillor Jim Jones	Councillor Khalid Usman
	Councillor Keith Irish	Councillor Isa Lee
	Councillor Alan Ho	
Staff	Ron Blake, Senior Development Manager, Planning & Urban Design Laura Gold, Council/Committee Coordinator Sabrina Bordone, Senior Planner, Central District Grace Lombardi, Election & Committee Coordinator Stephen Lue, Manager of Development	

**Alternate formats for this document are available upon request**

---

### **1. CALL TO ORDER**

The Development Services Public Meeting convened at 7:03 PM in the Council Chamber with Councillor Keith Irish in the Chair.

### **2. DISCLOSURE OF PECUNIARY INTEREST**

There were no disclosures of pecuniary interest.

### **4. REPORTS**

#### **4.1 PRELIMINARY REPORT DIGRAM DEVELOPMENTS HELEN INC. APPLICATIONS FOR OFFICIAL PLAN AMENDMENT, ZONING BY-LAW AMENDMENT AND DRAFT PLAN OF SUBDIVISION TO PERMIT AN EIGHT-STOREY RESIDENTIAL BUILDING AT 55, 63 & 83 HELEN**



**AVENUE (WARD 3) FILE NOS. PLAN 19 137397 AND SU/ZA 17 135415  
(10.3, 10.5)**

**Note: Summary packaged attached.**

The Public Meeting this date was to consider applications submitted by Digram Developments (Helen) Inc. for Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivision to permit an eight-storey residential building at 55, 63 and 83 Helen Avenue (PLAN 19 137397).

The Committee Clerk advised that 708 notices were mailed on March 24, 2021, and a Public Meeting sign was posted on March 22, 2021. Six written submissions were received either expressing concern or in opposition of this proposed development.

Sabrina Bordone, Senior Planner, Central District, provided a presentation regarding the proposal, the location, surrounding uses and outstanding issues.

Mark Yarranton (KLM Planning Partners Inc.) and Greg Raspin (SRN Architects Inc.), representing the Applicant, provided a presentation on the proposed proposed development.

Staff clarified that the Applicant is now requesting an Official Plan Amendment, Zoning By-law Amendment and Draft Plan of Subdivision to permit a ten-storey residential building at 55, 63 and 83 Helen Avenue, rather than an eight-storey building. This change occurred after the preliminary staff report for the proposed development was published.

The following deputations were made on the proposed proposed development:

1) Alick Sui, Representing the Unionville Residents Association

- Expressed concern regarding the height and density of the proposed development;
- Supported a reduction in number of parking spots;
- Suggested that the proposed development should include more amenities;
- Suggested the proposed development should be designed to be more pedestrian friendly;
- Requested a meeting with the developer to discuss the proposal.

2) Alan Kan, resident living on Caboto Trail

- Suggested the public meeting notice sign posted needs to be improved to ensure the public is aware of the proposed development.



3) Naline Ya, Member of the South Unionville Residents Association

- Expressed concern regarding the height and density of the proposed development;
- Supported having a meeting with the developer to discuss the proposed development;
- Expressed concern regarding the impact the proposed development would have on crime, traffic, and safety.

Committee advised that the Development Services Committee just approved a new public meeting notice sign, which will improve the public's awareness of future proposed developments. The City will start to use the new public meeting notice sign in the near future.

Committee provided the following feedback on the proposed development:

- Suggested that a shadow study be required;
- Inquired if there was any discussion with Infrastructure Ontario regarding the lands to the South of the proposed development;
- Noted that the proposed development should be considered in context of what is being proposed in the area (i.e. on the BMW Site);
- Suggested the Committee should not stray too far away from what was presented in the Preliminary Concept for the Markham Centre Secondary Plan Update Study;
- Inquired why so many notices were sent out;
- Inquired what the proposed side yard setback was from the existing houses to the east side of the proposed development;
- Expressed concern regarding the height and density of the proposed development;
- Suggested the transition from low-rise residential to high density needs to be improved;
- Suggested possibly replacing the three storey portion of the building with townhomes to make it more compatible with the adjacent dwellings;

In response to inquiries from the Committee and the public, staff advised that the side setback from the low-rise building to the adjacent residential homes on eastern side of the property is approximately 10.6 m (35 ft). The transition from low-rise



to high-rise occurs at a 45 degree angular plane, which is standard and will ensure the neighbouring residential homes to east have sufficient sunlight. Notice in this area is to be provided within a 200 metre radius; however, additional notices were sent out by the local ward Councillor. Staff have received a copy of the shadow study, but it is currently under review and will need to be updated now that the height of the building has changed from eight to ten storeys. There has been discussion with Infrastructure Ontario, the Ministry of Municipal Affairs and Housing, and York Region regarding acquiring the lands south of the proposed development from Infrastructure Ontario and using it for affordable housing, but no decision has been made at this time.

Mr. Yarranton responded to inquiries from the Committee and the public, advising that the design of the proposed development address comments provided by staff. The low-rise section of the building is of a similar height to townhomes, and the height of the building increases gradually at a 45 degree angle. A view from the south side of the development is not available at this time.

Moved by Councillor Reid McAlpine

Seconded by Regional Councillor Jack Heath

1. That the deputations by Alick Sui, Alan Kan, and Naline Ya regarding the “PRELIMINARY REPORT, Digram Developments (Helen) Inc., Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit an ten-storey residential building at 55, 63, and 83 Helen Avenue (PLAN 19 137397)”, be received; and,
2. That the written submissions by Yang Jim, Kevin Wu, Hua Ping, Guihua (Claudia) Shen, Zhuohua (Carlos) Su, and Jennie Ho regarding the “PRELIMINARY REPORT, Digram Developments (Helen) Inc., Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit an ten-storey residential building at 55, 63, and 83 Helen Avenue (PLAN 19 137397)”, be received; and further,
3. That the Development Services Commission report dated April 21, 2020, entitled “PRELIMINARY REPORT, Digram Developments (Helen) Inc., Applications for Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision to permit an ten-storey residential building at 55, 63, and 83 Helen Avenue (PLAN 19 137397)”, be received; and,
4. That the Record of the Public Meeting held on April 13, 2021 with respect to the proposed Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision applications, be received; and,



5. That the applications by Digram Developments (Helen) Inc., for a proposed Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision (PLAN 19 137397), be referred back to staff for a report and a recommendation; and further.
6. That staff be authorized and directed to do all things necessary to give effect to this resolution.

**Carried**

**5. ADJOURNMENT**

The Development Services Public Meeting adjourned at 8:31 PM.





**CYCLING AND PEDESTRIAN ADVISORY COMMITTEE  
THURSDAY, MARCH 18, 2021  
ZOOM MEETING  
MINUTES  
7:00 – 9:00 PM**

---

**Attendance**

**Committee:**

David Rawcliffe, Chair  
Peter Miasek, Vice Chair  
Steve Glassman, Vice-Chair  
Anthony Ko  
Colin Cassar  
Doug Wolfe  
Elisabeth Tan  
Jozsef Zerczi  
Paul Salvo  
Amit Arora  
Deputy Mayor Don Hamilton  
Councillor Isa Lee, Ward 8  
Councillor Reid McAlpine, Ward 3

**Public Member/Guests:**

Nancy Smith Lea, TCAT (Markham Cycles)

**Staff:**

Fion Ho, TDM Coordinator, Transportation  
Loy Cheah, Senior Manager, Transportation  
Laura Gold, Committee Clerk  
Victoria Hamilton, Committee Clerk, PT

**Agency:**

Sonia Sanita, York Region Public Health  
Diana Kakamousias, York Region Transportation  
Joseph Pacione, YRDSB and YCDSB

**Regrets:**

Gerry Shaw  
Zain Khan  
Daniel Yeung  
Sari Liem, York Region Public Health  
Barry Martin, Accessibility Advisory Committee

The Cycling & Pedestrian Advisory Committee (CPAC) convened at 7:05 PM with David Rawcliffe in the Chair.

**1. DISCLOSURE OF CONFLICTS OF INTEREST**

There were no disclosures of conflicts of interest.

**2. APPROVAL/MODIFICATIONS TO AGENDA**

There were no modifications to the agenda.



### **3. REVIEW OF MINUTES FROM: February 18, 2021**

Moved by Steve Glassman  
 Seconded by Elisabeth Tan

That the Minutes from the February 18, 2021 Cycling & Pedestrian Advisory Committee be approved, as presented.

Carried

### **4. PERTINENT INFORMATION FROM GUEST SPEAKERS**

There were no guest speakers.

### **5. BUSINESS ARISING FROM LAST MEETING**

#### **5.1 Shared Pathways Sub-Committee Update**

David Rawcliffe referenced the Shared Pathways (MUP / MUT) vs. Separated Pathways/Tracks Position Paper from February 2021 prepared by the Shared Pathways Sub-Committee. The Committee expressed appreciation for the research conducted, and the usefulness of the paper as a guideline.

Staff advised that as part of the Active Transportation Master Plan (ATMP) project, we are developing design guidelines for various active transportation facilities, where MUP design will be included. Once the draft guideline is available, it will be shared with the Committee for review. Staff recommended that the Committee review the ATMP report before taking further action.

Staff advised that York Region's general approach to regional roads design is to build separate facilities, and only accept Multi Use Pathways (MUP) when there was insufficient width for separated facilities.

Diana Kakamousias, from York Region Transportation shared feedback received from residents during York Region's implementation of separated facilities, including:

- The interference of the separated facility with boulevard tree plantings which add a safety feature by creating a buffer from the cars; and
- Unicycle tracks do not permit families to ride together and may not accommodate people with various abilities.

Moved by Councillor Reid McAlpine  
 Seconded by Peter Miasek

That the Cycling and Pedestrian Advisory Committee receive the Shared Pathways (MUP / MUT) vs. Separated Pathways/Tracks Position Paper report dated February 2021, as presented.



Carried

## 5.2 Active Transportation Infrastructure in FUA Update

Staff presented the City's current Future Urban Area (FUA) conceptual plans and cross-section for collector roads. For major and minor collector roads, MUPs are planned on both sides of the road with a minimum width of 3 meters. Although a minimum width of 3.5 m is preferred for a MUP, staff feels that a future splitting of a 3.0 m MUP into a uni-directional cycle track & sidewalk is feasible, if necessary, as traveller volumes will be low. Regional roads have a greater need to separate facilities, as they are longer and have greater traffic volume. The City will examine separating facilities when the volume on a road increases over time. It is also mentioned the maintenance requirement and cost for cycle track is much higher than MUPs.

There were comments from the Committee regarding MUPs near school site and whether the MUPs can be raised as they cross driveways

Staff will provide an update on the planned AT facilities on arterial roads and trails at a later time when more information is available.

## 5.3 John Street MUP Update

The Committee noted that the John Street MUP project had been tendered, but not awarded, and requested an update of the project highlighting that provincial funding will be lost if the project is not completed by 2021.

Staff, Deputy Mayor Hamilton, and Councillor McAlpine updated the Committee on the status of the project.

The Committee provided the following recommendation:

Moved by Peter Miasek  
 Seconded by Elisabeth Tan

**WHEREAS** a major strategic goal for Markham is to provide a network of routes for Active Transportation (AT) (*refer to Markham's: 2014 Official Plan; 2018 "Getting to Zero" plan; 2019 strategic plan "Building Markham's Future Together"*); and,

**WHEREAS** the John St MUP is a key route in the City of Markham's plan for its AT network; and,

**WHEREAS** the John St MUP is approved by Council and is fully funded, including \$1M from the Ontario Provincial Government; and,

**WHEREAS** \$450,000 has already been spent on the John Street MUP Design; and,

**WHEREAS** the Ontario Provincial Government's funding will be lost if the John St MUP is not substantially completed in 2021; and,



**WHEREAS** the project is designed and tendered, but not awarded; and,

**NOW THEREFORE BE IT RESOLVED THAT** CPAC strongly urges Markham Council to direct staff:

- 1) to award the contract for the John St MUP; and
- 2) promptly commence the construction of the John St MUP; and further,

**THAT** the motion be raised at the General Committee on March 22, 2021.

**Carried (Passed Unanimously)**

## **6. STANDING ITEMS & ON-GOING PROJECTS**

### **6.1 City's Ongoing AT Project Updates**

#### John Street MUP

See section 5.3 John Street MUP Update.

#### Sidewalk Completion Program

Design and Construction schedule outlined.

Communications Plan deferred due to COVID-19, new schedule under review in Q2-Q3.

#### Rouge Valley Trail

Crossing at Kennedy – Staff is currently working on design, construction will not start until summer 2022 due to COVID-19.

The Wayfinding Signage Plan is tentatively scheduled to go to the Development Services Committee (DSC) on April 19<sup>th</sup>.

#### Road Safety Education Program

Elisabeth Tan proposed that Markham Cycles hold a road safety workshop, through the library's online workshops. Nancy Smith Lea, from TCAT, noted one to be included.

#### Traffic Calming on Avoca Drive and Caboto Trail

For Avoca Drive, staff explained that edge lines have been identified and will be installed this year as part of the City's pavement marking contract.

Staff explained that traffic calming measures on Caboto Trail were previously implemented were not effective. Staff is reviewing this road section and would take more time due to the complexity of the situation.



The Committee inquired about vertical traffic calming. Staff advised that vertical traffic calming measures will be addressed, as part of the discussion to approve the City's Road Safety Plan (RSP). Due to funding the RSP will be done in 2022.

### Milliken Urban Loops Signage

Anthony Ko inquired about including additional loop to the AT Urban Loop program. Staff advised that the Milliken and Villages & Valley loops were developed as part of Council direction and it was recommended that any additional loops CPAC wishes to recommend be brought to a future CPAC meeting for consideration.

## **6.2 School Programs & Pilots**

Peter Miasek provided an update of the Ontario Active School Transportation Round Two Grant (OAST), and the OAST Innovate Grant. He advised that an application was in process for an amendment to the Innovate Grant for a School Street pilot.

## **6.3 Active Transportation Master Plan**

Staff advised that key recommendations related to capital costs and strategic implementation plan implications were under review by senior management. Staff anticipate providing a report to DSC next month. The Draft Design Guideline will be shared with the Committee in the coming weeks.

## **6.4 Reports to Council**

There was no update provided on this item.

## **6.5 EA Updates**

- Elgin Mills EA - currently open for public review.
- Denison Street EA – RFP awarded, PIC #1 scheduled for Fall 2021.
- Kennedy Road EA – open for public review until April 17.

## **6.6 Markham Cycling Day**

There was no update provided on this item.

## **6.7 York Region Projects**

There was no update provided on this item.

## **6.8 Subcommittee Updates (Vision Zero, Shared Pathways, Bike Share, 16th Intersections)**

There was no update provided on this item.

## **6.9 Road Safety**

There was no update provided on this item.

## **6.10 Open Streets**



## Markham Open Streets 2021

Peter Miasek advised that the Sub-Committee is focused on two ideas:

- Slow Street on Unionville Main Street, from Carlton Road to Fred Varley Drive
- Sunday and Statutory Holiday road closure on Middlefield Road, from 14<sup>th</sup> Avenue to Denison Street

Destination Markham has applied to the Healthy Canada Initiative for funding, and a response is expected by May 14<sup>th</sup> or earlier (post-meeting information). The Sub-Committee has discussed alternate funding strategies with Staff. Next Sub-Committee meeting scheduled for March 25<sup>th</sup>.

## **7. INFO ITEM/NEW BUSINESS/ ANNOUNCEMENTS**

### **7.1 National Transportation Strategy - Funding**

Peter Miasek advised that the Government of Canada has allocated \$400M for the National Active Transportation Strategy. It is estimated that Markham may be prorated for \$1M.

### **7.2 Winter Maintenance of Sidewalk – Slips and Falls**

Peter Miasek inquired whether improvements were planned to reduce the number of slip and falls during the winter months.

Councillor Reid McAlpine recommended that further research be done to devise a broader pedestrian safety strategy, commenting that funding would be required to improve maintenance. He noted that implementation would not take place before winter 2022-2023 as budget for 2021/2022 has already been approved.

The Committee proposed the creation of a Winter Pedestrian Sub-Committee to review the issue further. Councillor Reid McAlpine, Peter Miasek and Elisabeth Tan expressed interest in joining the Sub-Committee.

Sources for obtaining slip and fall statistics from the current pandemic year and previous years was discussed. Settled lawsuits are public record, but would need to be obtained through a freedom of information request.

Sonia Sanita, from York Region Public Health, advised that access to some hospital data could be provided, however their epidemiologists are currently redeployed to COVID-19 related matters. She noted that there has been an increase in trail users this year due to the pandemic, which has resulted in more injuries.

## **8. ANY OTHER BUSINESS**

There was no other business.



Cycling & Pedestrian Advisory Committee  
March 18, 2021  
Page 7 of 7

## **9. AGENDA ITEMS FOR THE NEXT MEETING**

## **10. ADJOURNMENT**

The Cycling & Pedestrian Advisory Committee adjourned at 9:00 p.m.



# Varley-McKay Art Foundation of Markham

## Minutes

March 15, 2021

5:00 PM

### Attendance:

**Board of Directors Present:** Terrence Pochmurski (Chair), Craig McOuat (Vice Chair), Amin Giga (Treasurer), John Ingram, Lisa Joy-Facey, Carolyn Le Quéré, Jim Schmidt, Edie Yeomans, and Councillor Reid McAlpine

**Staff Present:** Niamh O'Laoghaire, Director, Varley Art Gallery; Francesca Dauphinais, Cultural Development Officer; Christina Kakaflikas, Director, Economic Growth, Culture & Entrepreneurship; and Scott Chapman, Corporate Privacy & Records Coordinator

**Regrets:** Mathew Reilly

Item	Discussion	Action
1. Call to Order	The Varley-McKay Art Foundation of Markham meeting convened at 5:02 PM with Terrence Pochmurski presiding as Chair.	
2. Disclosure of Pecuniary Interest	None disclosed.	
3. Additions / Changes to the Agenda	There were no additions or changes to the agenda.	
4. Approval of Minutes	Moved by Craig McOuat Seconded by Edie Yeomans  That the minutes of the Varley-McKay Art Foundation of Markham meeting held February 1, 2021 be approved as distributed.  <b>Carried</b>	
5. Business Arising from The Minutes	a) <i>MOU Update</i>  Terrence Pochmurski, Chair, distributed a draft containing proposed updates and revisions to the Memorandum of Understanding (MOU) between the Varley-McKay Art Foundation and the City of	



Item	Discussion	Action
	<p>Markham. It was requested that the Board members review the revised MOU draft and provide feedback for discussion at the next scheduled Board meeting.</p>	
<p><b>6. Director's Report</b></p>	<p>Niamh O'Laoghaire, Director, Varley Art Gallery, provided the Board with an overview of the report, which included the following highlights:</p> <p><u>Exhibition Schedule</u> Planning on the exhibition schedule is proceeding as previously outlined, with three shows ready to open and a fourth nearing completion. All may be able to open by the beginning of April, subject to authorization from the City in respect of public health and operating guidelines.</p> <p><u>Staffing Updates</u> The two staff positions funded through Canada Summer Jobs Program concluded at the end of February. The two Young Canada Works positions will remain active until the end of March.</p> <p><u>Grants</u> Since the Board's last meeting, the Gallery has secured a number of grants, including a recovery fund grant from the Ontario Arts Council (OAC); project grants from the OAC, Canada Council for the Arts, and Museum Assistance Program (MAP); and the expected funds from the Canadian Museums Association for the two Young Canada Works positions. The Director has also assisted with applications submitted for the TD Bank Connected Communities grant and the Canada Healthy Communities Initiative grant.</p> <p><u>Public and Education Programs</u> Following the initial cancellation of the 2021 LunarFest Varley Courtyard installation due to public health conditions, the Gallery has agreed to a revised proposal submitted by the Asian Canadian Special Events Association to proceed in the month of April. Mock-ups of the proposed lanterns to be featured in the installation were shared with the Board members.</p>	



Item	Discussion	Action
	<p>Over the month of February, the Gallery hosted various virtual youth education programs, including a series of Varley Lounge sessions, 'Draw with Me!' studio workshops, and a 5-day workshop in Procreate. Staff noted that the workshops have been very well received by participating teachers and students.</p> <p><u>Public Art</u> The temporary public art installation in the Varley Courtyard has been moved to the beginning of June, where it will remain until mid-October to overlap with an exhibition at the Museum of Contemporary Art (MOCA) in Toronto.</p> <p><u>Request for Funding</u> A request for financial support in the amount of \$47,000 was submitted to the Foundation for exhibition and public education programming, assistance with the conservation of the 470 works transferred from the Art Gallery of Ontario (AGO) as part of the MAP grant, and staff professional development. It was noted that each of the items included in the request supports the Gallery's core functions and strategic objectives as endorsed by the Board and Markham City Council, and that the amount requested is consistent with the allocations authorized by the Board in each of the previous two years.</p> <p>The Board consented to consider this matter further as part of the Treasurer's updated Financial Report and 2021 Budget Plan proposal.</p>	
<p><b>7. Development Officer Report</b></p>	<p>Francesca Dauphinais, Cultural Development Officer, provided the Board with an overview of the report, which included the following highlights:</p> <p>a) <u>Vintages at the Varley</u> Partnerships for this year's virtual event have been confirmed with Wines of South Africa and CharBox. Ticket prices are still to be determined, but will likely range around \$120 and include three bottles of wine, a small charcuterie box for two people, and a \$20 donation to the Foundation. The event will</p>	



Item	Discussion	Action
	<p>also feature an online sale rather than an auction in consideration of the costs of retaining an online auction service and the expected size of the event. Staff offered their appreciation to any Members of the Board who may help assist in offering any additional items for sale.</p> <p>Staff are in the process of securing funds for two additional event sponsorships. A sponsorship package is being developed and will be shared with the Board shortly. Staff expressed appreciation for any members who might assist in securing additional sponsorships.</p> <p>There was discussion regarding the logistics and operating protocols for distributing and/or delivering the wine and charcuterie boxes to attendees in advance of the event. Members of the Board noted the importance of providing registrants with the most convenient and accessible means of receiving the event items in order to participate. Staff advised that they are continuing to work with Wines of South Africa and CharBox to determine potential options for distribution.</p> <p>There was also discussion regarding the maximum number of participants that may be accommodated at this year's event based on wine inventory. Staff advised that they anticipate a maximum of 70 registrants based on participation levels from previous years and from the Gallery's virtual events held to-date. It was also noted that, as the ticket price will likely be greater than that of last year's cancelled in-person event, the Foundation might be required to absorb some costs to honor tickets previously purchased/donated and credited for last year's event.</p> <p><u>Other Virtual Fundraisers</u> Members of the Board were encouraged to participate in and share the links to the various virtual fundraising initiatives on the Foundation's website, including partnerships with Indigo and Plantables. A donation</p>	



Item	Discussion	Action
	<p>form and teams have also been created on Simplyk, a free peer-to-peer fundraising platform.</p> <p><u>Rouge: Virtual Varley Gala</u> Plans are underway for this year's virtual gala with an event date of Friday, October 15. The event will be hosted by Givergy and feature a virtual gala and auction. Sponsorship packages for the event will be ready to be circulated by the end of March. Event entertainment and ticket prices are still being determined, and will be further discussed at the next Sub-Committee meeting.</p> <p>It was noted that the Sub-Committee has discussed additional fundraising and engagement activities during the lead-up to the gala, such as a series of virtual 'Paint and Sip' parties.</p> <p>There was discussion regarding the potential need to prepare printed sponsorship packages to distribute as businesses begin to re-open.</p> <p><u>Grants and Sponsorship Requests</u> In addition to those identified in the Director's Report, funding requests have been submitted to Air Canada, the TD Connected Communities – Arts and Culture Grant, and the Community Foundations of Canada. Additional project funding proposals will be managed through the Grant Advance system.</p> <p><u>Volunteers</u> Volunteer docents have been actively involved in training and delivering virtual education programs throughout February and into March. It is hoped that the Foundation will be able to re-expand its volunteer program in 2021 pending appropriate public health and operating conditions.</p>	
<b>8. Sub-Committee Report</b>	<p>b) <u>Rouge: Virtual Varley Gala</u> An update on the Rouge: Virtual Varley Gala was provided as part of the Development Officer's Report.</p>	



Item	Discussion	Action
	<p>c) <u>Art Acquisition Committee</u> There was no update from the Art Acquisition Committee.</p> <p>d) <u>Vintages at the Varley</u> An update on the Vintages at the Varley event was provided as part of the Development Officer's Report.</p> <p>e) <u>Development Committee</u> There was no update from the Development Committee.</p>	
<p><b>9. Financial Report</b></p>	<p>Amin Giga, Treasurer, reviewed the Varley-McKay Art Foundation's Statement of Financial Position as of February 28, 2021, and presented the Board members with the proposed 2021 Budget Plan developed in consultation with the Chair, Vice-Chair, City Council representatives, and Gallery and City staff. Expected revenues and expenditures for 2021 were reviewed in detail and compared against financial activity from the previous year.</p> <p>It was noted that the City of Markham has committed to contribute approximately \$45,000 to the Foundation in 2021 to assist with operating costs, which will help alleviate financial pressure associated with the existing budget deficit. It was also noted that the proposed 2021 Budget Plan includes the funding allocation requested in the Director's Report for exhibition- and public education-related programming, support for the conservation of works transferred from the AGO to the Gallery, and staff professional development.</p> <p>The Board discussed the potential financial impact of the request put forward in the Director's Report. It was advised that the amount requested is consistent with the allocations authorized by the Board in each of the previous two years. It was also noted that staff and the Board may be required to revisit any funding decisions if circumstances evolve which impact projected programming plans.</p>	

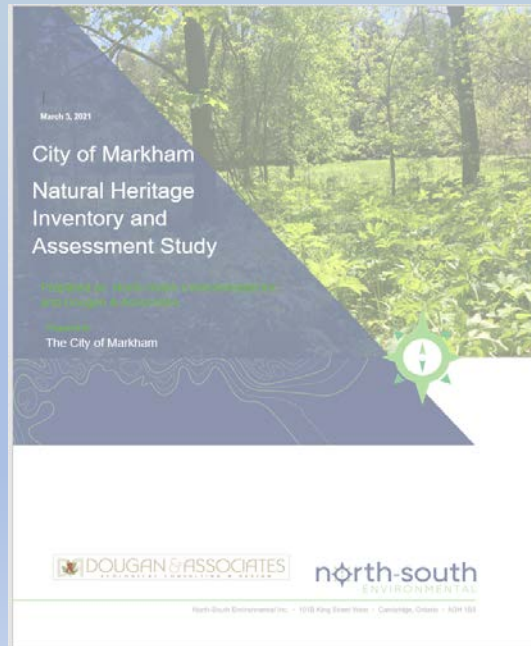


Item	Discussion	Action
	<p>Moved by Amin Giga Seconded by Craig McOuat</p> <p>That the Varley-McKay Art Foundation of Markham authorize a funding allocation in the amount of \$47,000 for 2021 exhibition and public education programming, support for the conservation of works transferred from the Art Gallery of Ontario, and Varley staff professional development, as outlined in the request submitted as part of the Director's Report dated March 15, 2021.</p> <p style="text-align: center;"><b>Carried Unanimously by the Members Present</b></p> <p>Moved by Amin Giga Seconded by Edie Yeomans</p> <p>That the 2021 Budget Plan for the Varley-McKay Art Foundation of Markham be approved as presented, subject to no substantial changes to projected operating conditions or considerations arising from additional feedback from the City of Markham.</p> <p style="text-align: center;"><b>Carried Unanimously by the Members Present</b></p>	
<b>10. New Business</b>	The Board recognized and congratulated Vice Chair Craig McOuat for being awarded the 2020 Business Employer of Excellence Award by the Markham Board of Trade.	
<b>11. Future Meeting Dates</b>	The next meeting of the Varley-McKay Art Foundation of Markham will be held on April 12, 2021.	
<b>12. Adjournment</b>	The Varley-McKay Art Foundation of Markham meeting adjourned at 6:25 PM.	





# Markham Phase 1 Natural Heritage Inventory and Assessment Study



Presentation to Development Services  
Committee

May 3, 2021



# Presentation Format

- Results from 2020 fieldwork
  - Natural cover
  - Flora & fauna inventory and significance
- Key Recommendations

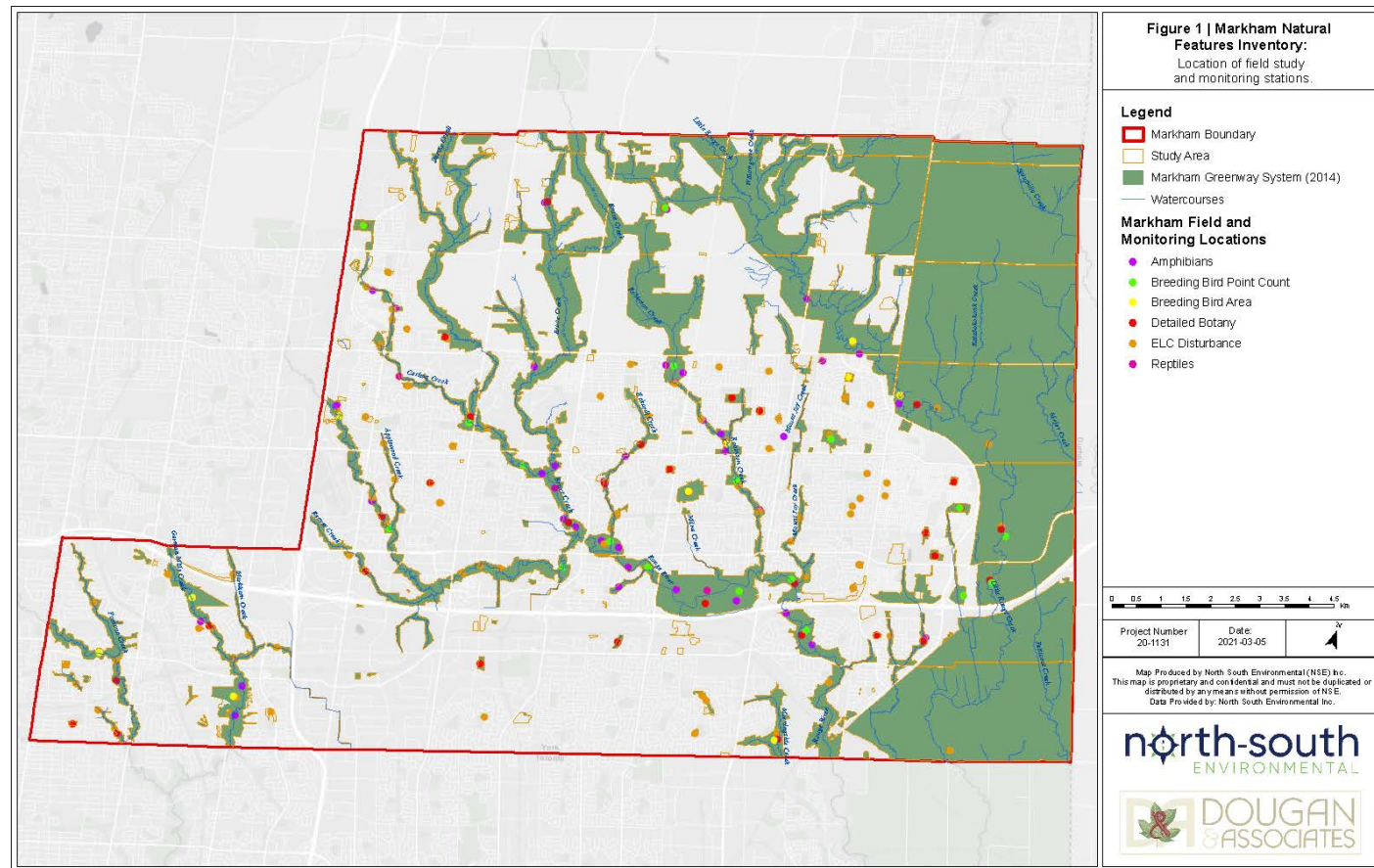


# Study Objectives

- Updating information on vegetation and wildlife and comparing with 1991 Natural Features Study Inventory
- Providing a more complete and accurate understanding of the limits and extent of natural heritage features (including flora and fauna)
- Providing analysis on the health and condition of the Greenway System
- Providing guidance for the Phase 2 Natural Heritage Study Management Plan



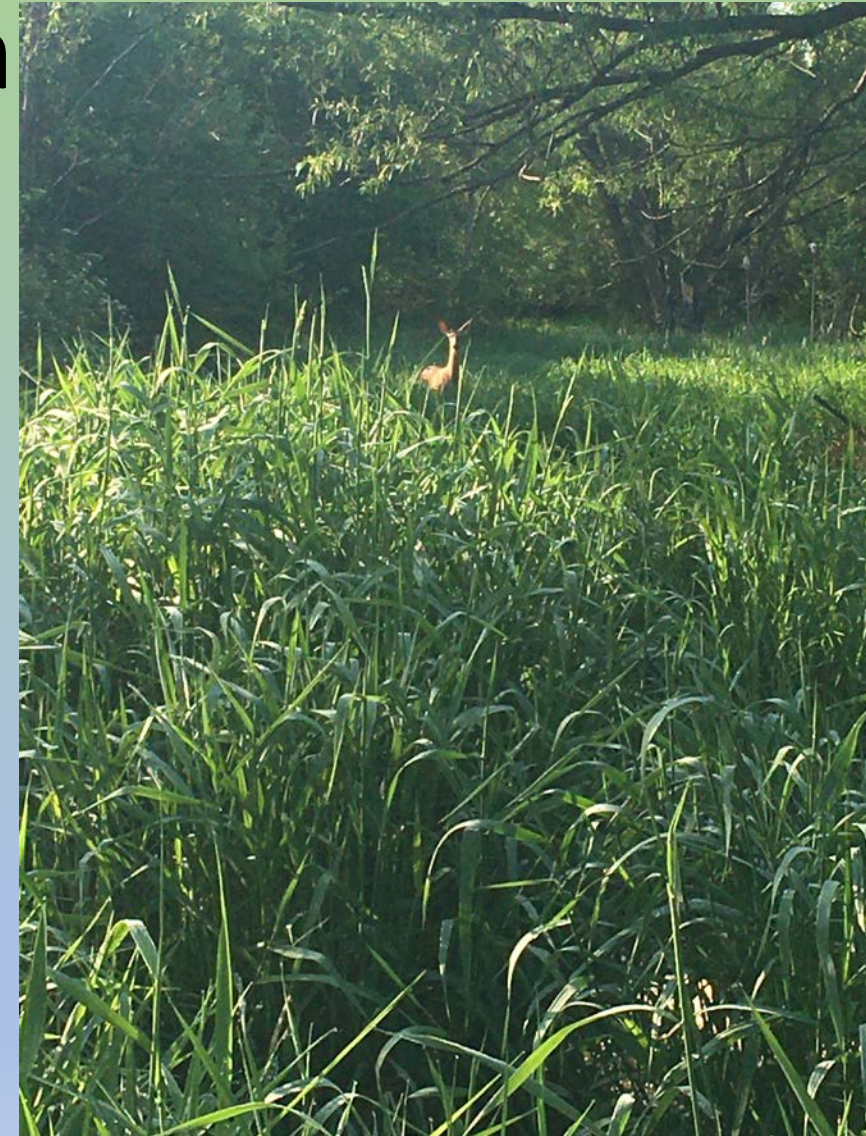
# Field Study and Monitoring Locations





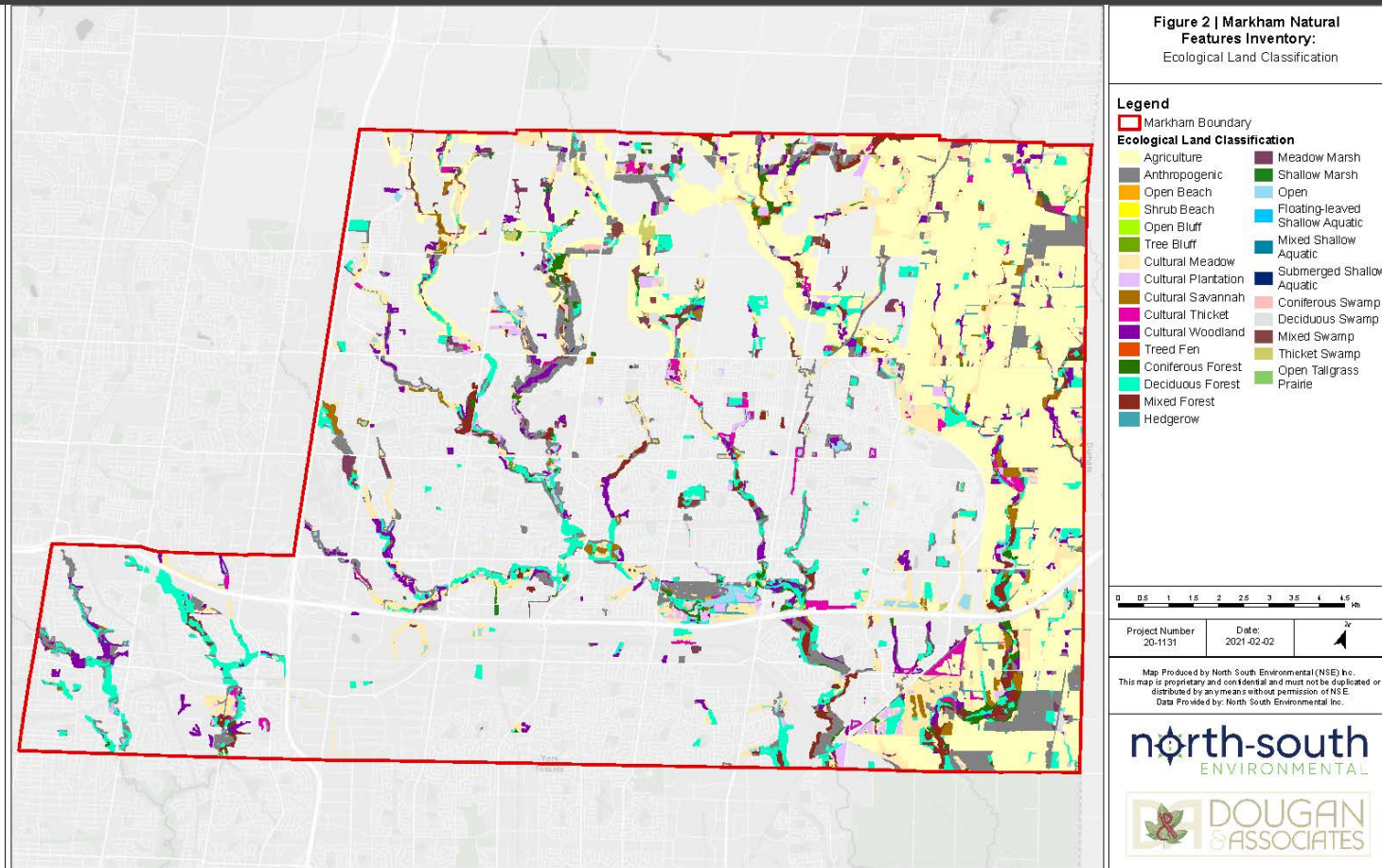
# Field Work Findings: Vegetation

- Upland forest dominated by Sugar Maple the most prevalent type; oak present but not dominant; Eastern Hemlock, Eastern White Cedar and Black Walnut also fairly common
- Non-native trees common components of lowland forest
- White Ash and Green Ash still present in forests and swamps, near death because of Emerald Ash Borer, but large blowdowns not apparent
- Meadow marshes dominated by Reed Canary-grass and shallow marshes dominated by non-native and native cattails.
- Very similar to vegetation types reported in 1991





# Greenway-wide Vegetation Mapping



- Wetland vegetation: 11.2% of the vegetation mapped (3.7% of Markham)
  - predominantly meadow marsh
- Terrestrial vegetation: 89% of the vegetation mapped (~30% of Markham)
  - 45% agricultural (15% of Markham)
  - 76% cultural (e.g. meadows, thickets, young woods, plantations) (25% of Markham)
  - 13% forest (4.4% of Markham)





# Significant Flora

---

- Provincially significant flora species
  - Butternut (Endangered)
    - all heavily cankered but many with live canopy
  - Three prairie species planted
  - Black Ash still present
    - now of concern because of Emerald Ash Borer
- 43 regionally and locally significant species
- 73 total significant species (including TRCA-ranked species)



# Wildlife

- 7 amphibian species, low abundance at most stations
- 4 reptile species: 3 turtles and Eastern Gartersnake
  - 2 turtle SAR: Snapping Turtle and Midland Painted Turtle
- 77 bird species, breeding evidence for 75 (Similar to 1992)
  - 6 bird SAR: Canada Warbler, Common Nighthawk, Eastern Wood-pewee, Barn Swallow, Wood Thrush and Eastern Meadowlark.
- Incidental Surveys:
  - 12 mammals
  - 5 insects (SAR species Monarch)





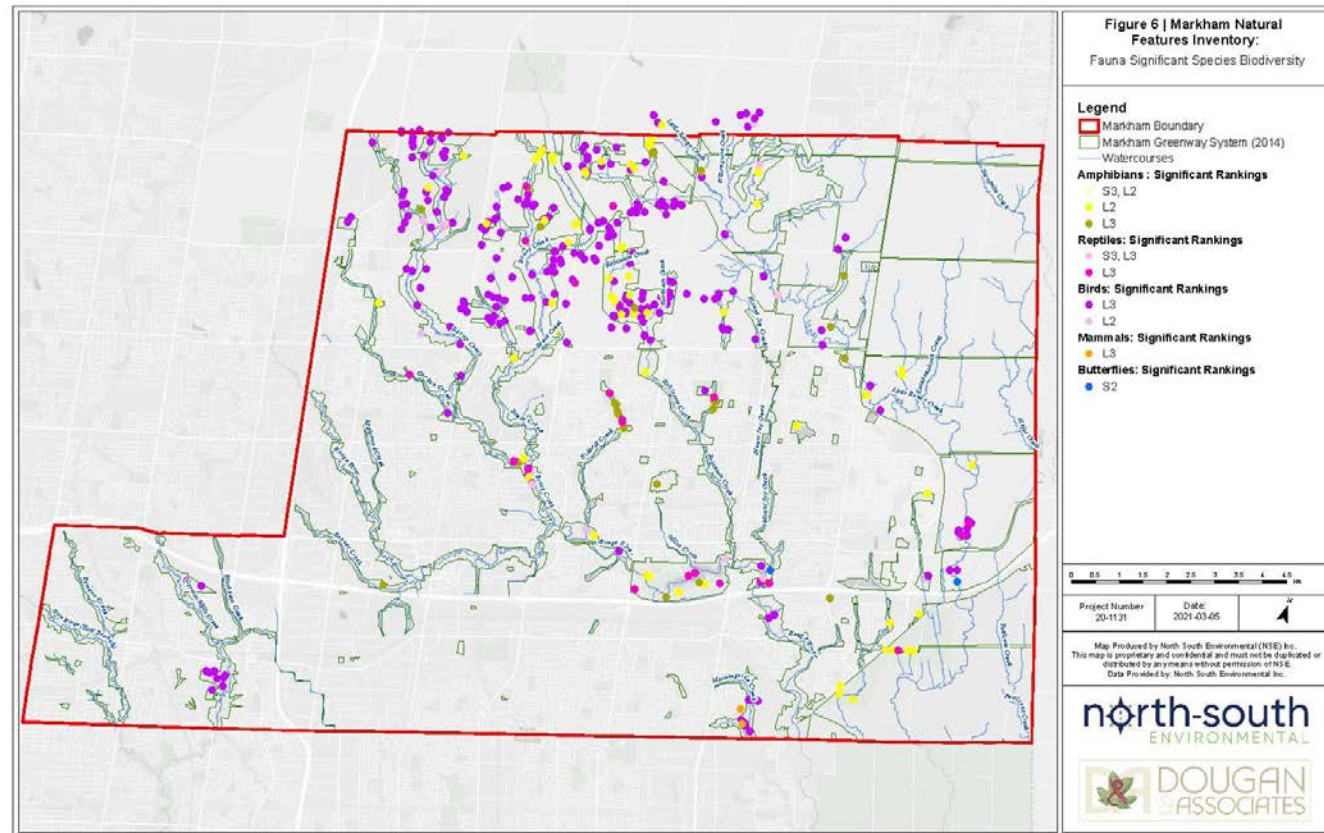
# Species of Conservation Concern

- 23 TRCA L1 to L3 (locally rare) Species
- 16 Area-sensitive species
  - 15 bird species and Bullfrog





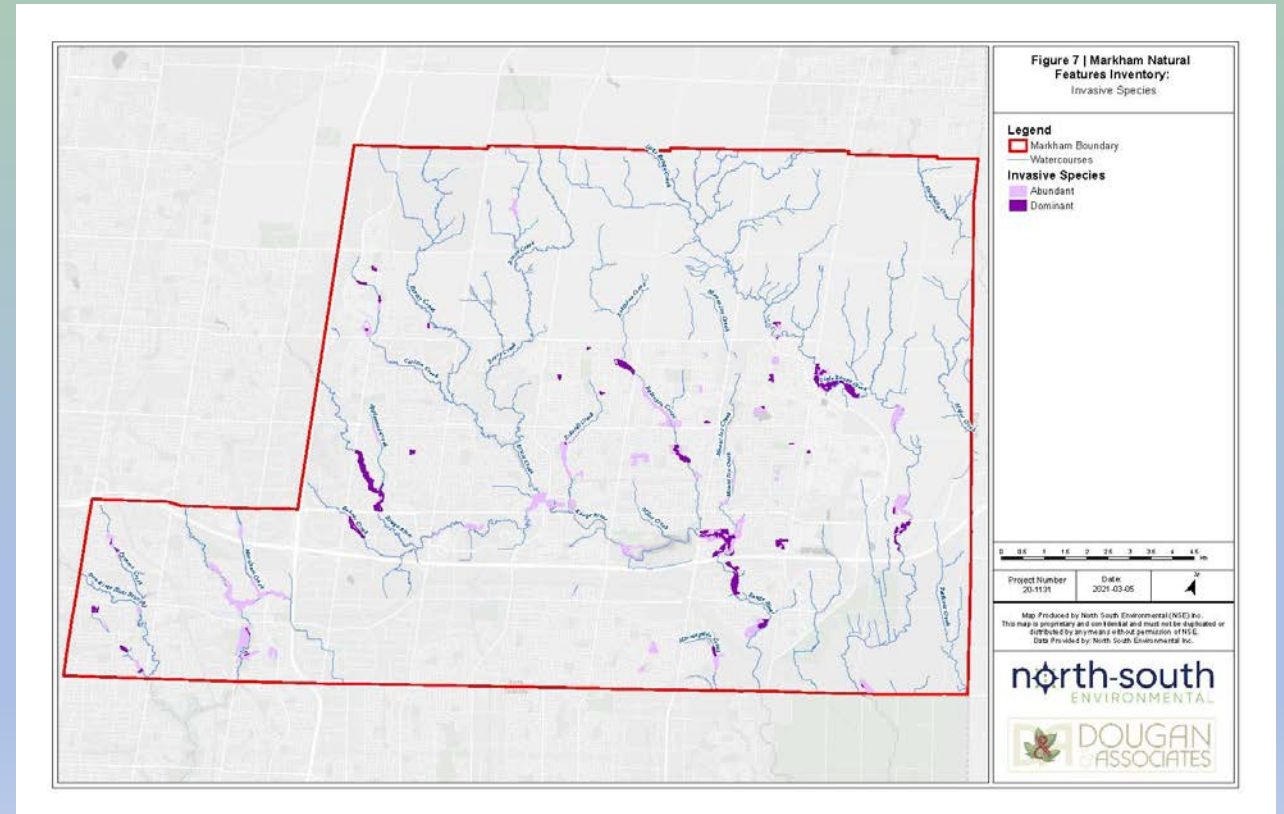
# Fauna Significant Species Biodiversity





# Ecological Condition

- Disturbances now mainly related to the presence of people: trails, encroachment, dumping, party spots, and vegetation removal or trampling
- Hazard tree removal in some areas, especially along trails in well-used parks.
- Non-native invasive species are more prevalent, BUT some of the most invasive species in the GTA are not as prevalent





# Comparison of 1991 and 2020 Plant Biodiversity

- 506 species noted in 1991 study (current study noted 478)
- Percent of native species in 1991 was 72%, whereas percent native species in 2020 was 67% (may not be significant)
- 25 species listed as rare in York Region in 1991, 43 rare species noted in 2020 (list of Regionally rare species was revised in 2000 and several times since then)
- Locally Significant Areas (LSAs) were hotspots highlighted in 1991; appear to be similar as described in 1991, though there are comments in wetland evaluations that some wetlands have been degraded by stormwater inputs. 96.5% of Locally Significant Areas are encompassed by the Greenway. Largest areas outside of the Greenway are those on Little Rouge and Rouge River within the Hwy 407 corridor.





**Bird Diversity:** similar species numbers and types, with slight decline in forest birds near wetlands since 1991, increase in forest interior and late-successional species





# Amphibian Diversity

- All species reported in 1991 were noted in 2020, though only one observation of Gray Treefrog was recorded in 2020 (location was uncertain)
- Spring Peeper and Red-backed Salamander recorded in 2020 but not in 1991
- No observations of high abundance of woodland amphibians (i.e. none high enough or diverse enough to indicate Significant Wildlife Habitat)





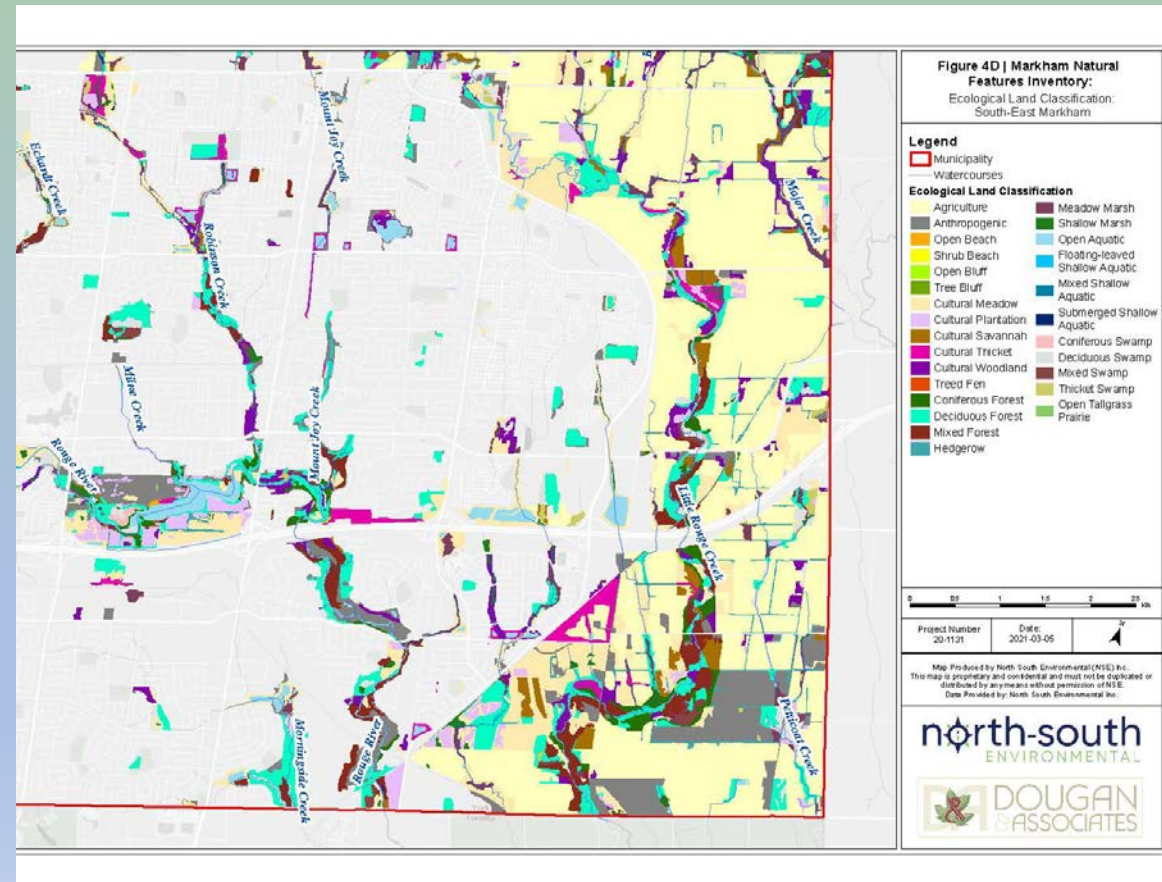
# The Greenway System Components

- Key Natural Heritage Features and Key Hydrologic Features are protected. Of the vegetation mapped in this study, the Greenway System includes:
  - 95% of wetlands (98% of Provincially Significant Wetlands)
  - 97% of woodlands
  - 93% of cultural communities (with the caveat that there are likely other areas of cultural vegetation that occur in areas outside the Greenway that were not mapped)
  - Biodiversity hotspots reported in 1991 as well as 2020 are encompassed by the Greenway
  - Most of the habitat is linked by corridors a minimum of 50 m wide (41 patches not connected; 1.5% of the Greenway); 62% of patches linked by corridors 100 m wide.
  - East-west connections are limited but some occur in central Markham



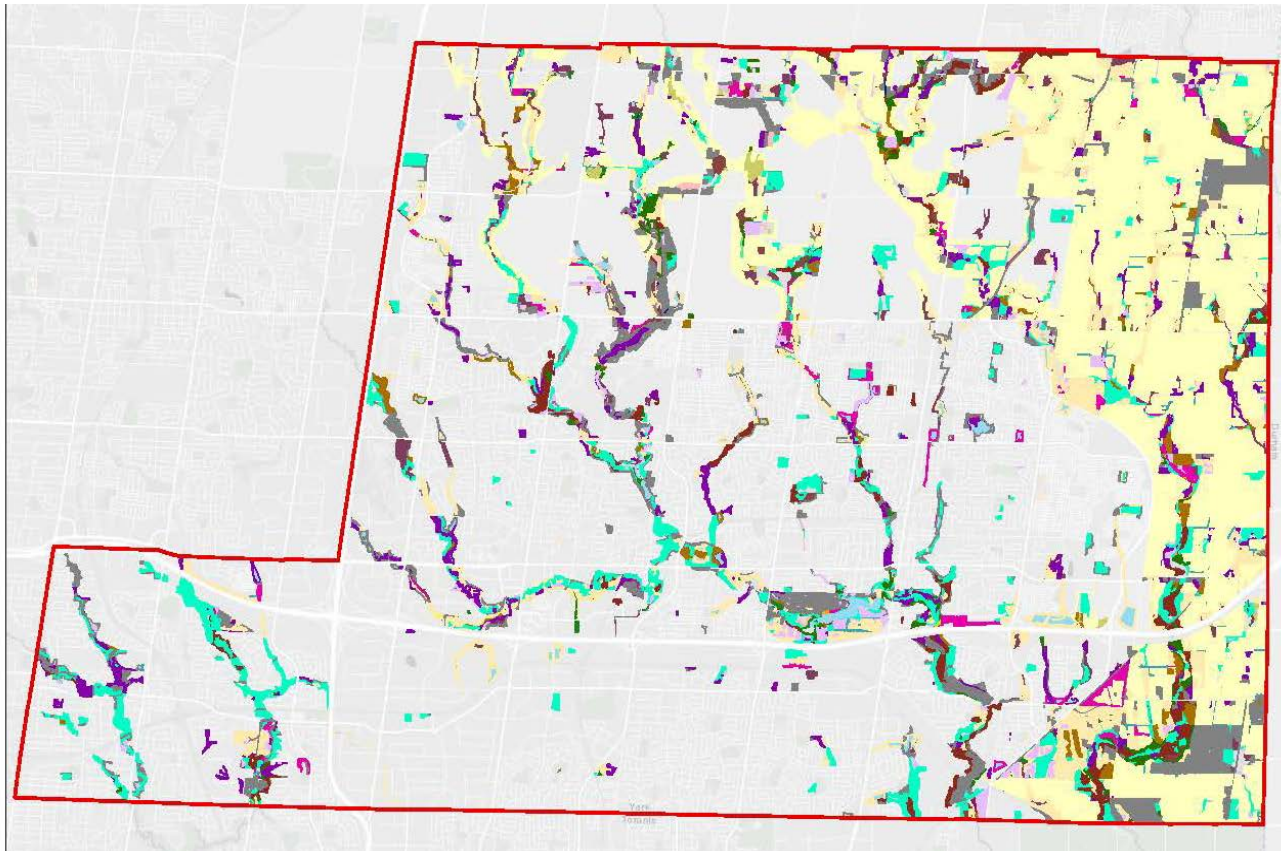
# Areas of Ecological Importance

- Rouge River and Little Rouge River; successional areas in Greenbelt on the eastern part of Markham provide high contribution to diversity; habitat nodes larger and more diverse on these systems;
- Morningside Creek is unusual as it is an area surrounded by urban development with high quality and species diversity;
- Wetlands, especially PSWs, harbour high diversity in relation to their size;





# Key Recommendations: Updated Natural Heritage Inventory



- Updated Natural Heritage Inventory should be considered in the next Official Plan review to ensure the most up to date boundaries for natural heritage and hydrological features are reflected in the Official Plan
- Review options for establishing natural heritage targets in next Official Plan review
- Review opportunities to link isolated natural heritage patches wherever possible and continue to implement the major east-west linkage
- Review opportunities to protect or include in the Greenway System successional areas where feasible
- Continue to identify, monitor and manage areas of high biological diversity
- Continue natural heritage restoration and enhancement initiatives



# Key Recommendations: Invasive Species



- Prepare a non-native Invasive Species Management Plan for Markham;
- Monitor for and manage species that are highly invasive in the GTA but have not become pervasive in Markham: Norway Maple, Black Alder, European Birch and Glossy Buckthorn;
- Prioritize management of highly invasive species in high-quality areas and areas of high diversity.



## Key Recommendations: Edge Management and Encroachment

- Prepare an Edge Management and Encroachment Plan to address existing impact areas and potential future impacts adjacent to the Greenway System





## Key Recommendations: Monitoring and Wildlife Crossings

- Prepare a long-term monitoring program
- Monitor and address wildlife road crossing conflicts as opportunities arise





Report to: Development Services Committee

Meeting Date: May 3, 2021

**SUBJECT:** Phase 1 Report: Natural Heritage Inventory and Assessment Study

**PREPARED BY:** Lilli Duoba, MCIP, RPP, Manager, Natural Heritage, ext. 7925  
Patrick Wong, MCIP, RPP, Senior Planner, Natural Heritage, ext. 6922

**REVIEWED BY:** Marg Wouters, MCIP, RPP, Senior Manager, Policy and Research, ext. 2909

### **RECOMMENDATION:**

1. That the staff report and presentation entitled: “Phase 1 Report: Natural Heritage Inventory and Assessment Study” dated May 3, 2021, be received;
2. And that the Phase 1: Natural Heritage Inventory and Assessment Study provide input into the upcoming Official Plan review process and that the study recommendations be considered for the Terms of Reference for Phase 2 of the Natural Heritage Management Plan Study;
3. And that staff be authorized and directed to do all things necessary to give effect to this resolution.

### **PURPOSE:**

The purpose of this report is summarize the findings and recommendations of the Phase 1: Natural Heritage Inventory and Assessment Study. The report is provided as Attachment A.

### **BACKGROUND:**

In early 2020, the City issued a request for proposals for consulting services for the preparation of the first phase of a two-phase Natural Heritage Inventory and Assessment Study. The purpose of the Phase 1 Study is to provide an update to the City’s natural heritage inventory. Phase 2 is intended to be a more detailed management strategy for natural areas and address any specific recommendations from the Phase 1 study to ensure the long term sustainability of publicly-owned natural areas in the City. Phase 2 has been deferred to the 2022 capital budget process. The Terms of Reference for the Phase 2 study would also review opportunities to address Goal 3: Safe, Sustainable and Complete Communities of the City’s Corporate Strategic Plan 2020-2023 which identifies the development of a wildlife and biodiversity strategy.

The request for proposals for Phase 1 was undertaken through a competitive bid process and the consulting firm of North-South Environmental with Dougan and Associates were retained to undertake the work.



---

Phase 1 of the study was designed to meet four key objectives:

1. Provide an inventory of vegetation communities for the entire City to support any modifications that may be needed to the City's Natural Heritage Network mapping for the next Official Plan review. This activity was undertaken through a desktop review of aerial photography and existing data sources.
2. Undertake a detailed inventory of flora and fauna, including ecological health, on some City-owned natural heritage lands. This activity was undertaken through field surveys and a total of 570 hectares out of the approximately 950 hectares of city-owned natural areas were visited and assessed.
3. Provide analysis on the health and condition of the Greenway System including:
  - changes in natural cover and conditions since the 1993 Natural Features Study
  - assess the current state of biodiversity in the City
  - identify any major issues related to the health of the Greenway System
  - describe ecological connectivity, habitat complexity and species diversity
4. Identify management needs and areas of ecological concern on City-owned lands.

This report provides the findings of Phase I: Natural Heritage Inventory and Assessment Study.

A Technical Advisory Committee was established for this study comprising staff from Ministry of Natural Resources and Forestry, Parks Canada, Toronto and Region Conservation Authority and York Region to review the study findings and provide input. Most comments have been received, primarily technical in nature, and staff will review the comments and make any minor changes to the report, as necessary.

## **OPTIONS/ DISCUSSION:**

### **Updated Natural Heritage Inventory**

The Study provided an updated inventory of vegetation communities undertaken through a desktop review of aerial photography and existing data sources. In addition, a detailed inventory of flora and fauna on City owned lands (570 ha) was undertaken using Ecological Land Classification (ELC) system. The ELC system provides a consistent methodology to accurately describe the type of vegetation or land cover (e.g., woodlands, wetlands, successional, aquatic and open water habitats) based on vegetation, soil and moisture characteristics. Staff will review this data during the next Official Plan review process and recommend any minor boundary modifications to the Greenway System as may be appropriate. The study also recommended that the City review the Greenway System to identify any appropriate opportunities for protection of successional habitat. While it is optimal to include this landscape as part of an integrated and connected natural heritage system, opportunities would have to be balanced against other municipal priorities for growth management. Public consultation will be undertaken as part of the Official Plan review process.

### **Health and Condition of the City's Greenway System**

One of the objectives of the Phase 1 study was to compare the finding of the inventory 1993 Natural Features Study (the inventory work for this study was undertaken in 1991).

While the overall amount of wetlands has remained fairly consistent over 30 years, there has been a noticeable change in the composition of wetland habitat. The amount of marsh



habitat has increased by about 200 hectares while swamp habitat has decreased by about 230 hectares. The area of woodland has increased over the past 30 years which is likely due to a combination of natural regeneration in previously open fields as well as tree planting efforts concentrated in the east end of Markham. The area of other natural cover (meadows/thickets) has also decreased possibly due to a combination of natural succession into woodlands and removals associated with urban development. Although the comparisons are generally reliable, it should be noted that a different vegetation classification system was used in 1991 which will have some impact on this comparison. Table 1 below provides a summary of vegetation cover change between 1991 and 2020.

Table 1: Natural Cover Change between 1991 and 2020

Type of vegetation	1991	2020
Wetlands (marsh and swamp)	Area: 833.9 ha % of City: 3.9%	Area: 793.0 ha % of City: 3.7%
Woodlands and Forests (including swamps)	Area: 1154.7 ha % of City: 5.4%	Area: 1669.7 ha % of City: 7.8%
Other natural cover (meadow, thickets)	Area: 1375.6 ha % of City: 6.5%	Area: 1008.4 ha % of City: 4.7%

Plants: A total of 506 plant species (of which, 365 are native) were identified in 1991 compared to 499 (350 native species) in 2020.

Birds: 77 species were reported in 1991 compared to 75 species in 2020.

Amphibians: 6 species of amphibians were reported in 1991 compared to 8 species of amphibians in 2020.

Reptiles: Targeted surveys for snakes were not conducted, however Eastern Gartersnake was recorded in both 1991 and 2020. 3 turtle species were found in 2020, however turtle surveys were not conducted in 1991.

Mammals: Similar urban-adapted mammal species were recorded in both 1991 and 2020. Overall, biodiversity of flora and fauna in Markham has remained similar to what was reported in 1991.

In terms of impacts to the City's natural heritage system resulting from invasive species, Markham's natural areas are faring better than other GTA urban municipalities in relation to the amount of some invasive tree species (Norway Maple, Black Alder, Glossy Buckthorn), however other invasive species (Common Buckthorn, Dog-Strangling Vine and Garlic Mustard) are common and widespread and are impacting the condition of public natural areas.

Human related disturbances and impacts on public lands were also noted in field observations including private encroachment onto public lands resulting in dumping, removal of native vegetation, informal trails and other impacts to natural ecosystem functions.

### **Management Needs and Phase 2 Study Recommendations**

The Phase 1 report recommends that the City review the data collected related to invasive species management and prepare an invasive species management plan to address the spread and growth of invasive species. Some invasive species management efforts are



---

already undertaken for hazardous invasive plants (e.g., Giant Hogweed), but control of invasive species that are not hazardous to humans should be considered for the long term health of natural areas. Invasive species can be highly detrimental to natural areas and are considered the second most significant threat to biodiversity after habitat loss according to the World Conservation Union (an international organization working in the field of nature conservation and sustainable use of natural resources). As invasive species become established, they outcompete native, indigenous plants and harm biodiversity by displacing food and shelter for native wildlife. It is recommended that the Phase 2 Natural Heritage Management Plan Study provide direction on the management of this issue.

Ecological health is measured not only by the health of the vegetation, but also on the detection of disturbances such as unauthorized recreational activities, garbage, windthrow and ice damage. The Phase 1 report recommends that the City prepare an edge management and encroachment plan. There are numerous recorded instances of private land encroachment onto public lands including dumping, fence relocation, gardens, storage, shed and private recreational facilities. The City should review educational materials and enforcement tools to manage edge effects and encroachment on City-owned lands. Staff recommend that this matter be incorporated in the Phase 2 study.

The Phase 1 report recommends that a long-term monitoring framework be established and that monitoring be conducted every five years. The program should include the monitoring of non-native invasive species as part of an invasive species management plan to ensure that invasive species do not create irreparable damage to the City's natural heritage resources. The program should also look at the after effects of development on protected natural heritage features. While a detailed assessment was out of scope for Phase 1 of this Study, the impacts of roads on animal movement was highlighted as a matter that would merit further review as Markham becomes increasingly urbanized and as greenspace corridors are subject to increasing recreational pressures. Where roads are subject to reconstruction or widening, the accommodation of animal movement should be reviewed on a site-by-site basis. It is recommended that the development of a long term monitoring framework be incorporated into Phase 2 of the Natural Heritage Management Plan Study.

### **Conclusion and Next Steps**

While the Phase 1 report for Natural Heritage Inventory and Assessment Study is generally considered complete, staff will consider additional minor technical agency comments prior to finalizing the document and posting it on the City's website. Funding for the Phase 2 Natural Heritage Management Plan will be considered through the 2022 capital budget process.

### **FINANCIAL CONSIDERATIONS**

There are no financial implications related to the recommendations of this report. Resources for the Phase 2 Natural Heritage Management Plan Study will be requested through the 2022 budget process.



**HUMAN RESOURCES CONSIDERATIONS**

Not applicable.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

The update and review of the City's Natural Heritage Network is consistent with the goal to protect and enhance our natural environment and built form identified in Building Markham's Future Together 2020 – 2023 Strategic Plan goal 'Safe, Sustainable and Complete Community'.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

There are no implications to external Departments. Staff have consulted with external agencies on this matter through a Technical Advisory Committee.

**RECOMMENDED BY:**

Arvin Prasad, MCIP, RPP  
Commissioner of Development Services

**ATTACHMENTS:**

Attachment A: Phase 1: Natural Heritage Inventory and Assessment Study



April 26, 2021

# City of Markham Natural Heritage Inventory and Assessment Study

Prepared by: North-South Environmental Inc.  
and Dougan & Associates

Prepared for  
The City of Markham





## Project Study Team

North-South Environmental Inc.

Sarah Mainguy: field work, principal report author, project manager

Grace Pitman: field work, data analysis, report author

Kristen Pott: field work, data analysis and mapping

Devin Bettencourt: field work

Izabela van Amelsvoort: field work

Dougan & Associates

Christina Myrdal: field work, report review and input

Janel Sauder: principal GIS and data analysis

Nicole White: GIS support and data analysis

Summer Graham: field work

Carl-Adam Wegenschimmel: field work

Heather Schibli: field work

## City of Markham Project Team

Lilli Duoba: City of Markham: project manager, report review

Patrick Wong: City of Markham: report review, mapping review

## Technical Advisory Team

Brad Stephens: TRCA

Quentin Hanchard: TRCA

Sue Hayes: TRCA

Namrata Shrestha: TRCA

Michelle Bourdeau: York Region

Jelena Baker: York Region

Leonardo Cabrera: Parks Canada

Jory Mullen: Parks Canada

Richard dePaulsen: Parks Canada

Steve Varga, MNRF

Maria Jaward: MNRF

Front Page Photo: Little Rouge River near Highway 7 and Reesor Road.

Photo Credit: Sarah Mainguy



## Table of Contents

Executive Summary .....	1
1. Introduction .....	3
2. Background .....	4
2.1. City of Markham Overview .....	4
2.2. Physical Setting: Ecoregion, Ecodistrict and Soils .....	5
2.3. Watersheds .....	5
2.4. Physical Environment and Soils .....	5
3. Methods .....	6
3.1. Rapid Ecological Land Classification .....	8
3.2. Disturbance .....	8
3.3. Detailed Botanical Inventories .....	9
3.4. Wildlife .....	9
3.4.1. Birds .....	9
3.4.2. Amphibians .....	10
3.4.3. Reptiles .....	10
3.4.4. Incidental Wildlife .....	11
3.5. Data Collection and Mapping .....	11
3.6. Analysis .....	11
4. Inventory Results .....	12
4.1. Vegetation Communities .....	12
4.1.1. Information Collected During 2020 Field Work .....	12
4.1. Information from Greenway-wide Vegetation Mapping .....	19
4.2. Flora and Floristics .....	26
4.3. Significant Flora .....	30
4.4. Significant Vegetation Communities .....	30
4.5. Wildlife .....	35
4.5.1. Amphibians .....	36
4.5.2. Reptiles .....	37



4.5.3.	Birds .....	37
4.5.4.	Mammals .....	38
4.5.5.	Odonates and Lepidopterans.....	38
4.5.6.	Significant Wildlife.....	39
5.	Condition .....	42
5.1.	Overall health, Condition and Ecological Integrity .....	42
5.1.1.	Tree Removal .....	42
5.1.2.	Maple Sugar Harvest.....	43
5.1.3.	Canopy Gaps .....	43
5.1.4.	Livestock Use.....	43
5.1.5.	Invasive Non-native Species.....	43
5.1.6.	Planting .....	46
5.1.7.	Tracks and Trails .....	46
5.1.8.	Dumping.....	48
5.1.9.	Earth Displacement .....	48
5.1.10.	Recreational Use .....	48
5.1.11.	Noise .....	48
5.1.12.	Disease.....	48
5.1.13.	Windthrow.....	49
5.1.14.	Browse .....	49
5.1.15.	Beaver Activity.....	49
5.1.16.	Flooding .....	49
5.1.17.	Fire.....	49
5.1.18.	Ice Damage .....	50
5.1.19.	Other Disturbances .....	50
6.	Trends in Ecological Health and Condition (Comparison with 1991 Inventory results).....	50
6.1.	Wetland Description .....	51
6.2.	Terrestrial Vegetation .....	52
6.3.	Comparison of Vegetation Areas.....	53



6.4. Comparison of Biodiversity.....	55
6.4.1. Plant Biodiversity .....	55
6.4.2. Animal Biodiversity.....	56
6.5. Locally Significant Areas.....	58
7. Evaluation of the Greenway System .....	66
7.1. Comparison with Federal, Provincial and Municipal Standards.....	66
7.1.1. Federal Standards .....	66
7.1.2. Provincial Standards.....	70
7.1.3. Municipal Standards .....	77
8. Connectivity.....	79
9. Areas of Ecological Importance .....	80
10. Long-Term Monitoring Framework .....	81
11. Conclusions and Recommendations.....	82
11.1. Conclusions.....	82
11.2. Recommendations .....	83
11.2.1. Inclusion of Areas and Adjustments in the Greenway System .....	83
11.2.2. Management of Biodiversity Hotspots.....	84
11.2.3. Non-native invasive Species Management Plan for the City of Markham .....	84
11.2.4. Edge Management and Encroachment Plan .....	85
11.2.5. Long-term Monitoring Framework .....	85
11.2.6. Improve Connections across Roads .....	86
11.2.7. Restoration of Natural Cover.....	86
11.2.8. Review of Targets .....	86
12. References .....	87

## List of Tables

Table 1. Most common dominant species of deciduous forest and number of polygons in which they were noted in Markham surveys..... 15

Table 2. Most common dominant species of mixed forest and number of polygons in which they were noted in Markham surveys. .... 16



Table 3. Most common dominant species of deciduous swamp and number of polygons in which they were noted in Markham surveys.....	17
Table 4. Most common dominant species of mixed swamp and number of polygons in which they were noted in Markham surveys.....	17
Table 5. Most common dominant species of cultural woodland and number of polygons in which they were noted in Markham surveys.....	18
Table 6. Most common dominant species and number of polygons in which they were noted in meadow marsh in Markham surveys.....	19
Table 7. Most common dominant species and number of polygons in which they were noted in meadow marsh in Markham surveys.....	19
Table 8. Vegetation Ecoseries and their Areas in the Greenway System in the City of Markham .....	20
Table 9. Ecosite Summaries of Species Recorded During Detailed Botanical Surveys .....	26
Table 10. Rare species including Species at Risk (THR, END) and S1-S3 for all sites and communities. ....	32
Table 11. Regionally and/or locally significant species for GTA (R, R1), TRCA (L1-L3), and RM York (R, R1-9). ....	32
Table 12. Total fauna species per type .....	36
Table 13. Breeding Amphibians identified during NACS. ....	36
Table 14. Reptile species identified during field surveys. ....	37
Table 15. Species at Risk Bird Species.....	38
Table 16. Significant wildlife in Markham's Greenway System: Species at Risk (SAR), Area Sensitive species, and species of concern in the TRCA watershed (L1-3). ....	39
Table 17. Number of instances of logging within the past 30 years noted in vegetation communities in Markham.....	42
Table 18. Occurrences where abundant or dominant non-native invasive species were observed in Markham vegetation communities.....	44
Table 19. Additional disturbances noted during investigations in Markham, and the number of polygons in which they were observed. ....	50
Table 20. Comparison of 1991 and 2020 extent of vegetation types (based on all data sources) .....	54
Table 21. Comparison of Guilds Recorded in Markham in 1991 and 2020.....	56
Table 22. Amphibians noted in 1991 and 2020 .....	57
Table 23. Comparison of Locally Significant Areas of Markham in 1991 and 2020.....	59



Table 24. Wetland, Riparian, Forest and Grassland Guidelines Recommended by Environment Canada 2013.....	66
Table 25. Provincially Significant Features within the City of Markham.....	70
Table 26. Areas of vegetation ecoseries within and outside the Greenway (note that the analysis for areas outside the Greenway System is approximate as current vegetation mapping was not available, so the analysis relied on older sources of data).....	79
Table A1-1. Ecological Land Classification (ELC), Disturbance Assessment, and Detailed Botanical Survey. ....	96
Table A1-2. Breeding Bird Survey information. ....	97
Table A1-3. Reptile and Incidentals Survey information.....	101
Table A1-4. Nocturnal Animals Survey information. ....	102
Table A2-1. Ecosite Summaries of ELC and Detailed Botanical Surveys from the 2020 vegetation surveys. ....	108
Appendix page.....	119
Table A3-1. Flora species list .....	120
*Species planted, species ranking do not apply .....	133
Appendix page.....	135
Table A4-1. Wildlife list including breeding birds, amphibians, reptiles, and mammals. ....	136

## List of Figures

Figure 1. Location of Field Study and Monitoring Sites.....	7
Figure 2. Vegetation Communities Recorded in 2020 Field Studies.....	13
Figure 3. Percentage of total ELC classifications for all 2020 vegetation surveys completed in the study area. ....	14
Figure 4A. Ecological Land Classification within the Study Area from All Sources: Markham Northwest .....	22
Figure 4B. Ecological Land Classification within the Study Area from All Sources: Markham Southwest .....	23
Figure 4C. Ecological Land Classification within the Study Area from All Sources: Markham Northeast .....	24



Figure 4D. Ecological Land Classification within the Study Area from All Sources: Markham Southeast .....	25
Figure 5A. Distribution of Native Flora Biodiversity Hotspots Determined from Detailed Botanical Surveys.....	29
Figure 5B. Distribution of significant flora biodiversity hotspots Determined from Detailed Botanical surveys. ....	31
Figure 6. Distribution of significant wildlife in all areas where location data were available. ....	41
Figure 7. Invasive species distribution, derived from 2020 site investigations.....	45
Figure 8. Disturbance as recorded during 2020 site surveys .....	47
Figure 9. 1992 Mapping of Locally Significant Areas in the City of Markham .....	65
Figure 10. Wetland cover and Provincially Significant Wetlands. ....	73
Figure 11. Candidate ANSIs in the City of Markham.....	76
Figure 12. Woodland cover in the Study Area.....	78

## List of Appendices

APPENDIX 1   Species Status Ranks and Field Survey Information .....	89
APPENDIX 2   Vegetation Communities .....	106
APPENDIX 3   Flora List.....	118
APPENDIX 4   Wildlife List .....	134
APPENDIX 5   MNRF Wetland Mapping .....	142



# Natural Heritage Inventory and Assessment Study

## Executive Summary

The City of Markham is committed to identifying and protecting a Greenway System for the long term preservation of natural heritage features and local biodiversity. The Natural Heritage Inventory and Assessment Study provides the first comprehensive assessment of the City's natural heritage resources since the 1992 Phase 1 Background Report for the Natural Features Study, for which data were collected in 1991 (the Phase 2 Implementation Report (Gore and Storrie 1993) provided recommendations based on the data collected in Phase 1 that were the foundation of the Greenway System). The major study objectives were to prepare updated vegetation community mapping, compile a current list of flora and fauna occurring in the City, assess trends in ecological health and condition since 1991, identify threats and disturbances to city-owned natural areas, and provide recommendations to better protect and enhance the City's natural heritage resources. Including matters to be considered in a future Natural Heritage Management Strategy.

Vegetation community mapping was scoped to lands within the current Greenway System (2014 Official Plan) as well as naturalizing lands within city-owned parks and potential woodlands and wetlands that are outside of the Greenway System. The total area of vegetation communities mapped in this study is 7063 hectares or 33.2% of the City. Wetland vegetation covered a total of 793 hectares (3.7%) and forest communities covered 924 hectares (4.4%). By considering other treed ecosystems (cultural woodlands, cultural plantations and swamp), the City's woodland cover is estimated at 1670 ha (7.85%).

Biodiversity of flora and fauna has remained similar to what was reported in 1991 with similar numbers of species reported. Concentrations of biodiversity are reported along the Little Rouge Creek, Rouge River and Morningside Creek where vegetation quality remains very high. The study concludes that the overall ecological health is high when compared to natural heritage systems in other parts of the Greater Toronto Area. In particular, the extent and intensity of invasive species is found to be low in comparison to other GTA municipalities. Management of non-native invasive species is recommended before they firmly establish in the City.

An area of concern includes the identification of numerous encroachments of private uses onto public natural areas, including mowing, cutting and dumping. Encroachments can have a cumulative effect that may threaten natural features and ecological function. Edge management such as fencing, vegetation screening, education or enforcement should be considered by the City to manage the impacts of encroachment.



The City's Greenway System currently protects the vast majority of the natural heritage features that were identified in this study. 95% of wetlands (including 98% of Provincially Significant Wetlands), 97% of woodlands and 93% of cultural communities mapped in this study are located within the Greenway System. The study recommends that the City review the vegetation community mapping and identify appropriate modifications to the Greenway System in the upcoming Official Plan review. The City should also consider the appropriateness of policy changes for the most significant portions of successional areas which support specialized bird habitat.

A number of other recommendations have been identified in this study that merit further consideration in the context of the City's future Natural Heritage Management Strategy or other policy initiatives. These include:

- Identifying biodiversity hotspots (and managing city-owned biodiversity sites)
- Establishing regular monitoring (5-year cycle) for the natural heritage system as a whole and reviewing the effectiveness of monitoring efforts associated with development applications
- Working with conservation authorities and transportation agencies to review wildlife crossing requirements at the time of infrastructure upgrades
- Continuing efforts to restore woodlands and wetlands
- Consider the establishment of natural heritage targets.



## 1. Introduction

The City of Markham has been committed to the protection of its natural heritage using a systems-based approach since the 1992 Natural Features Phase 1 Background Study (for which inventories were conducted in 1991). It became clear through this process that the understanding of extent, type and significance of the natural heritage features and their flora and fauna was critical to enable and support their protection through Official Plan policy. Mapping of the extent of the features is particularly important. The Phase 2 Implementation Report (Gore and Storrie 1993) provided recommendations based on the data collected in Phase 1 that were the foundation of the Greenway System

This current project represents a major step forward in improving the understanding of the City's natural heritage features, including how the features have changed since the 1991 baseline inventories. Objectives of the study are summarized below:

- providing updated vegetation community mapping in the City;
- provide more complete lists of flora and fauna that currently occur in the City;
- refining the accuracy of Official Plan Natural Heritage mapping, thus providing a better “starting point” for the identification of areas suitable for future development;
- providing a more complete and accurate understanding of the limits and extent of natural heritage features (including flora and fauna), thus providing support for the rigorous defence and future refinement of environmental policies;
- providing data to facilitate comparison with data collected in the 1992 Natural Features Study, thus facilitating evaluation of how well the City's biodiversity has been protected;
- identifying areas where existing disturbance and or threats (e.g., encroachment, over-use, non-native species, etc.) are degrading natural heritage values, i.e., identify management needs;
- identifying areas that are special and/or outstanding with respect to biodiversity and/or condition and thus are worthy of special attention (e.g., protection and/or management);
- updating and expanding on base-line information (building on the 1992 Phase 1 Natural Features Study baseline) that can be used for future monitoring and “state of the environment” reporting;
- providing the data to enable evaluation of current policies and management programs to meet the goals and objectives of natural heritage protection as articulated in the City's Official Plan; and
- informing the development of a work plan for the future “Natural Heritage Management Strategy”, including priorities for further investigation and management.

The Study is intended to provide a comprehensive assessment and update of the City's natural heritage system and will support the future mapping updates to Markham's Official Plan. A subsequent study (‘Natural Heritage Management Strategy’) is planned via a separate procurement process in 2022, following completion of this Natural Heritage Inventory and Assessment Study; it will provide the basis for the identification of any future study needs or additional management requirements to ensure the long term health and sustainability of City-owned natural heritage lands.



The Natural Heritage Network consists of the following components (City of Markham Official Plan Section 3.1.2.1):

- a) natural heritage and hydrologic features;
- b) vegetation protection zones associated with the features identified in 3.1.2.1a); and
- c) hazardous lands and hazardous sites.

Key natural heritage features and key hydrologic features are defined in Section 3.1.2.10 of the Official Plan:

- a) wetlands;
- b) habitat of threatened and endangered species;
- c) significant portions of the habitat of:
  - i. special concern species in the Oak Ridges Moraine Conservation Area and Greenbelt Plan Area; and
  - ii. provincially rare species in the Oak Ridges Moraine Conservation Plan Area;
- d) fish habitat;
- e) Life Science Areas of Natural and Scientific Interest;
- f) significant valleylands;
- g) significant woodlands;
- h) significant wildlife habitat;
- i) sand barrens, savannahs and tallgrass prairies;
- j) permanent streams and intermittent streams; and
- k) seepage areas and springs.

Key hydrologic features are described in Section 3.1.2 of this Plan and include evaluated wetlands, lakes and their littoral zones, permanent streams and intermittent streams, and seepage areas and springs.

## 2. Background

### 2.1. City of Markham Overview

The City of Markham is a lower-tier municipality located in the central part of the Greater Toronto Area (GTA). It is located at the southeast corner of York Region and is one of the nine local municipalities making up York Region. The City of Markham is approximately 21,240 hectares in size and approximately 32% of the land area is contained within the City's Greenway System. Approximately half of the City's Greenway System is located within the Rouge National Urban Park which is Canada's largest urban park.

The City of Markham is a rapidly urbanizing municipality owing to its strategic location in the Greater Toronto Area including access to two 400-series highways. Markham was formed in 1971 when the population was largely concentrated in the historic communities of Thornhill, Buttonville, Unionville



and Markham Village. Development has proceeded outwards from these heritage communities and from south-to-north. Today, most of the lands south of Major Mackenzie Drive have been urbanized while lands to the north (and to the east in the Rouge National Urban Park) remain as rural residential and agricultural.

The 1993 Natural Features Study provides a more detailed account of the past vegetation conditions in Markham. Markham was likely historically dominated by forest along with small pockets of open or successional vegetation including areas of disturbance caused by natural events (fire or windthrow), small Indigenous settlements and wetlands. As European settlers moved into southern Ontario, forest would have been cleared for timber and to prepare the land for agricultural purposes. As a result, woodland cover decreased and bottomed out around 4% in the 1950s before slowly increasing ever since.

## **2.2. Physical Setting: Ecoregion, Ecodistrict and Soils**

The City of Markham is located largely in Ecoregion 7E, Ecodistrict 7E-4. The northeastern corner of Markham lies in Ecoregion 6E, Ecodistrict 6E-7. Ecoregions are regions where vegetation follows consistent patterns due to climate and geology (Crins et al. 2009). Ecodistricts are a subdivision of an ecoregion, characterized by distinctive assemblages of relief, geology, landforms and soils, vegetation, water, fauna, and land use. Ecodistrict 7E-4 is bounded by the south slope of the Oak Ridges Moraine in the north and contains the Peel Plain.

The northern boundary of Ecoregion 6E coincides with the contact zone between Paleozoic and Precambrian bedrock, and is also correlated with precipitation and temperature variables. Its southern boundary is correlated with temperature, elevation, geological differences, and estimated net primary productivity (Crins et al. 2009). Climate in this ecoregion is relatively mild, though not as mild as in 7E to the south.

The climate in Ecoregion 7E is one of the mildest in Canada. Ecoregion 7E is also underlain by limestone bedrock. Except for the Niagara Escarpment from Burlington south to Queenston, and some morainal deposits and drumlin fields in the north-central part of the ecoregion, the topography is flat and overlain by deep undulating deposits of ground moraine. Most substrates in the ecoregion are comprised of calcareous mineral material.

## **2.3. Watersheds**

The study area lies mainly within the Rouge River watershed, but includes parts of the neighbouring Don River in the west, Duffins Creek and Petticoat Creek in the east and a small portion of Highland Creek in the south.

## **2.4. Physical Environment and Soils**

The physical environment is described in detail in the Markham Natural Features Study (Gore and Storrie 1992). A brief summary is provided here.



The present day landscape, with its surficial deposits, are a result of the recession of the Wisconsin ice sheet some 13,000 years ago. Virtually all of Markham is within the Central Till Plain physiographic region. The land surface consists of gently rolling, low relief hills. The major relief of this till plain is provided by the stream valleys that are incised 6 to 15 m into the rolling plain. A relatively small area near Unionville is sand plain.

The South Slope of the Oak Ridges Moraine in the northeastern part of Markham is undulating, consisting of gravel, sand, till and other glacial materials. It contains undrained depressions. The Oak Ridges moraine is a significant groundwater recharge area, and the south slope of the Moraine forms the source area of the Rouge River and Duffins Creek watersheds within Markham.

Soils (with other factors such as microclimate and past land use) determine the type of vegetation found throughout Markham. Clay and loam are the dominant soil types. Relatively impermeable, primarily clay soils are found in northern to southwestern parts of Markham. Better-drained loam soils dominate the southeast portion of Markham and are also found in moderately sloping areas associated with watercourses throughout Markham. A small area of sandier, more permeable soils is found in the southwestern part of the City, near Unionville.

### 3. Methods

Study areas are mapped in **Figure 1**. Sites were generally selected for study if they:

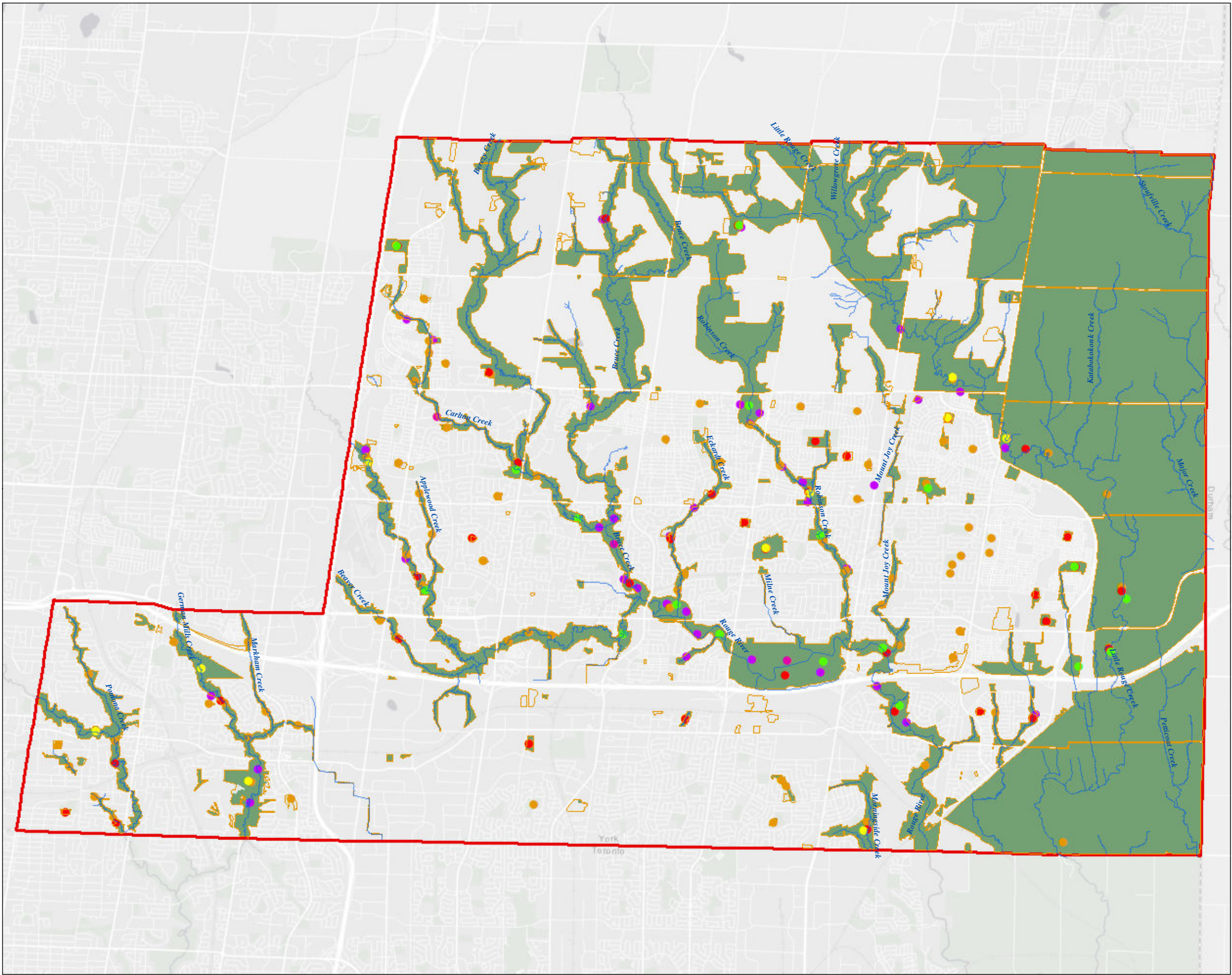
- Were located within Markham's Greenway System; and
- Had not been surveyed within the past 10 years.

The selection generally included sites that were large and diverse, as well as certain smaller/isolated sites within the mapped Greenway system. The City also identified a selection of sites both within and outside of the current Greenway system that were of interest for one or more of the following reasons:

- Potential future additions to the mapped Greenway system;
- Recently restored areas, or areas undergoing restoration;
- Wooded areas that have not been identified as woodlands on OP mapping; or
- Stormwater management ponds that have been captured as part of the Greenway System.





Additional detail on selection of sites for different types of surveys (amphibians, Ecological Land Classification, detailed botanical surveys, reptiles and birds) are provided in the following sections.





**Figure 1 | Markham Natural Features Inventory:**  
Location of Field Study Sites

**Legend**

-  Markham Boundary
-  Study Area
-  Markham Greenway System (2014)
-  Watercourses

**Markham Field and Monitoring Locations**

-  Amphibians
-  Breeding Bird Point Count
-  Breeding Bird Area Search
-  Detailed Botany
-  ELC Disturbance
-  Reptiles

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 Km

Project Number  
20-1131

Date:  
2021-04-22



Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or  
distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





### 3.1. Rapid Ecological Land Classification

Vegetation surveys were conducted in the Study Area (**Figure 1**), with the number and seasonality of visits determined by the type of vegetation on each site identified via aerial photo interpretation. Due to the number of sites that required investigation, the field program was highly scoped to correspond with the time available for each survey. The dates for vegetation surveys are provided in **Appendix 1**.

Ecological Land Classification (ELC) surveys were conducted according to protocols developed for southern Ontario by the Ontario Ministry of Natural Resources (Lee et al. 1998), modified to a Rapid Assessment Protocol to focus on the composition of the vegetation type and condition of the site. ELC surveys were undertaken to classify vegetation to the Vegetation Type level as defined by the ELC system for Southern Ontario (Lee et al. 1998). Soil samples were not taken. ELC and disturbance information were recorded on the ESRI Survey 123 application in the field.

As noted above, information used for vegetation community mapping was obtained primarily through sampling of communities in the field in 2020 (556 polygons), interpretation of aerial photography for this study (419 polygons), from the Markham Subwatershed Study (Dugan and Associates 2014; 1574 polygons), and information collected by the Toronto and Region Conservation Authority between the years 1999 and 2017 (1640 polygons). Other background sources included:

- York Downs EIS (Beacon 2017; 61 polygons);
- 9th Line EIS (Dillon, 2020; 9 polygons)
- Angus Glen Warden Nursery MESP (Savanta & Beacon, 2019; 28 polygons) and
- Milliken Centre EIS (NSE, 2016; 6 polygons).

All polygons were reviewed and refined to represent the land condition in the 2019 orthoimagery.

Wetland mapping was received from the Ontario Ministry of Natural Resources and Forestry (MNRF) following the completion of the report draft. This mapping is discussed in Section 7.1.3.

### 3.2. Disturbance

Condition, as recorded during field surveys, was focused on the 20 factors listed in the ELC manual (Lee et al. 1998) to catalogue the most widespread disturbances in southern Ontario. These included 12 human-caused disturbances such as logging, presence of invasive non-native species (noted as “alien” in the field surveys for the sake of brevity), presence of tracks and trails, other recreational disturbances such as party spots, dumping and encroachment, noise, and 8 natural disturbances such as fire, ice damage, erosion, deer browse, Beaver activity, etc. Each disturbance was ranked by severity from 1 to 3, with 1 indicating high or intense, 2 indicating moderate and 3 indicating slight or light. Each disturbance was also ranked by its distribution, with 1 indicating it was local, 2 indicating widespread, and 3 indicating extensive. Information was recorded on ESRI Survey 123 in the field.



### 3.3. Detailed Botanical Inventories

Spring botanical surveys were scheduled before tree leaf-out (i.e. May) and targeted spring flora, including spring ephemerals, early sedges and grasses. Summer (approximately late June and July) and fall (approximately August to September) surveys were conducted in some communities to provide full coverage of the growing season and to capture the full diversity of the vegetation communities, especially in sites with floodplain and meadow communities. Dates for detailed botanical surveys are provided in **Appendix 1**. Species were recorded in the field on standard data sheets derived from those in the ELC manual for southern Ontario (Lee et al. 1998).

Uncommon, rare, special concern, threatened, or endangered species at the national, provincial, and regional scale were located with a hand-held GPS during the surveys. Plant species that could not be identified in the field were identified using Michigan Flora (Voss and Reznicek 2012), the standard text used for identification of Ontario flora.

The provincial conservation status for plant species identified during field investigations was determined using the NHIC's vascular plants checklist (2018). The regional conservation status for York Region was determined using Varga et al.'s Status of Rare Plants of the Greater Toronto Area (Varga et al. 2005). Vegetation communities in the study area were assessed using the Ecological Land Classification (ELC) system for Southern Ontario (Lee et al., 1998).

### 3.4. Wildlife

#### 3.4.1. Birds

Breeding bird survey locations were selected by an avian ecologist, targeting a mixture of woodland, wetland, and open (meadow) communities throughout the Study Area. Surveys were conducted according to protocols provided by Environment Canada's Forest Bird Monitoring program (FBMP) and the Ontario Breeding Bird Atlas (2001), with point count surveys conducted in more extensive habitat and area searches conducted in smaller habitats. Surveys were undertaken in two periods to target early breeding species (May 24<sup>th</sup> – June 17<sup>th</sup>) and late breeding species (June 13<sup>th</sup> – July 10<sup>th</sup>), with at least one week apart. Point-count surveys of 10 minutes, as well as area searches, were conducted in low wind and fair-weather conditions between dawn and 10 am as specified by Environment Canada protocols. Point count locations were supplemented by area searches (searches of individual areas for sights and sounds of birds), which covered all other portions of the site. All data were recorded on the ESRI Survey 123 application in the field.

Protocols developed by Birds Canada (2001) were used to assess the probability of breeding as follows:

- Observed (O) - is defined as a species observed in its breeding season outside its nesting habitat (no evidence of breeding). Presumed migrants are recorded as Observed, as are foraging birds in non-breeding habitat.



- Possible (PO) - breeding is defined as an observation of any of the following: 1) a species observed in its breeding season in suitable nesting habitat; and/or 2) singing male heard; and/or 3) breeding calls heard, in its breeding season in suitable nesting habitat.
- Probable (PR) - breeding is defined as an observation of any of the following: 1) a pair in breeding season in suitable habitat; 2) permanent territory presumed through registration of territorial song on at least two days, a week or more apart, at the same place; or 3) courtship or display between a male and a female or two males, including courtship feeding or copulation; visiting probable nest site; agitated behaviour or anxiety calls of an adult; brood path on an adult female or cloacal protuberance on an adult male; nest building or excavation of a nest hole.
- Confirmed (C) - breeding is defined as observation of any of the following: 1) a distraction display or injury feigning; 2) used nest or egg shell found (occupied or laid within the period of the study); 3) recently fledged young or downy young, including young incapable of sustained flight; 4) adults entering or leaving nest site in circumstances indicating occupied nest (e.g. adult carrying fecal sac; adult carrying food for young); or 5) nest containing eggs, or nest with young seen or heard.

### 3.4.2. Amphibians

Amphibian survey locations were selected by a wildlife ecologist via air photo interpretation, targeting a mixture of open wetlands (i.e. marsh), wooded wetlands, and portions along tributaries that appeared to have pooled water. Surveys were conducted in locations where standing water provided sufficient habitat for breeding amphibians. Three amphibian surveys were conducted at each site according to protocols in the Marsh Monitoring Program (MMP) manual (Bird Studies Canada 2009). Three-minute point counts were conducted between April and June, with at least 15 days between each survey, and at least half an hour after sunset, in low wind, with minimum temperatures as follows:

- Survey 1: 15-30 April, 5° C
- Survey 2: 15-30 May, 10° C
- Survey 3: 15-30 June, 17° C

Amphibian abundance was assessed according to abundance codes derived by the MMP as follows:

- Code 1 - Individuals can be counted; calls not simultaneous
- Code 2 - Calls distinguishable; some simultaneous calling
- Code 3 - Full chorus; calls continuous and overlapping.

### 3.4.3. Reptiles

The focus of reptile surveys was on turtles, as the scope of the study did not provide time for dedicated snake surveys, which are labour-intensive. However, incidental observations of snakes and



other cryptic species were identified by searching under debris during other surveys where possible. Turtle surveys were scoped to a small number of areas where extensive standing water provides potential overwintering habitat that could be indicated by turtles basking in early spring. These surveys were limited primarily to Toogood Pond and Milne Park. Logs, rocks, and the water's edges was scanned during surveys during the first warm spring days, to detect basking turtles. One additional area was surveyed on the City's request based on landowner concerns about turtle road mortality along Personna Blvd. east of Woodbine Ave. The ponds north and south of Personna Blvd. were investigated for basking turtles in early spring, and the roadway and shoulder were investigated for signs of turtles crossing and/or nesting.

#### **3.4.4. Incidental Wildlife**

Incidental observations of all wildlife species (e.g., mammals, reptiles, insects and other arthropods) was documented during all site visits. Debris was searched for snakes, terrestrial salamanders, and small mammals.

### **3.5. Data Collection and Mapping**

Data collection was completed through the use of customized mobile data collection forms on Survey123 for ArcGIS. The data records were uploaded from Survey123 in real-time to ESRI's secure cloud. Using ArcGIS Online a desktop review and QAQC of all collected records was then performed.

ELC units were digitized using ESRI's ArcGIS Pro 2.7 according to protocols developed for southern Ontario by the Ontario Ministry of Natural Resources (Lee et al. 1998). A consolidated ELC file was developed based on scoped vegetation surveys, existing data sources (TRCA and City of Markham), and aerial photo interpretation (2019).

The final datasets were displayed in interactive ArcGIS Online dashboards. The dashboards were developed as an intuitive way for users to visualize and explore the location-based analytics. The dashboards were tailored to convey the essential information required for viewing trends and decision making.

### **3.6. Analysis**

Inventory results that had been recorded on Survey 123 (mobile data collection app) were converted to excel files for analysis. This included all wildlife species data and Rapid ELC and Disturbance survey data. Flora species data were collected using Survey 123, or recorded on hardcopy data sheets and then entered into the GIS database later. These results were also converted into an excel spreadsheet for analysis. The GIS database was used to screen the status and native or non-native origin (for all species of flora and fauna) as well as area-sensitivity and breeding evidence for fauna.

Floristic Quality Index (FQI) analysis was used to determine the quality of plant communities within the study area. The FQI is a measure used to compare natural areas (Oldham et al. 1995). The FQI is derived from the assignment of a number between 1 and 10 to each native plant according to its



habitat requirements (the Coefficient of Conservatism: abbreviated as C). The scores (for native plants only) are averaged to obtain the Native Mean C and summed and divided by the square root of the number of species to obtain the FQI. Plants found in a diversity of habitats have low scores, and plants found only in a few, highly specific habitats have high scores. Therefore, habitats where conservative species predominate have high Native Mean Cs; habitats where there is a higher diversity of conservative species have higher FQIs.

## 4. Inventory Results

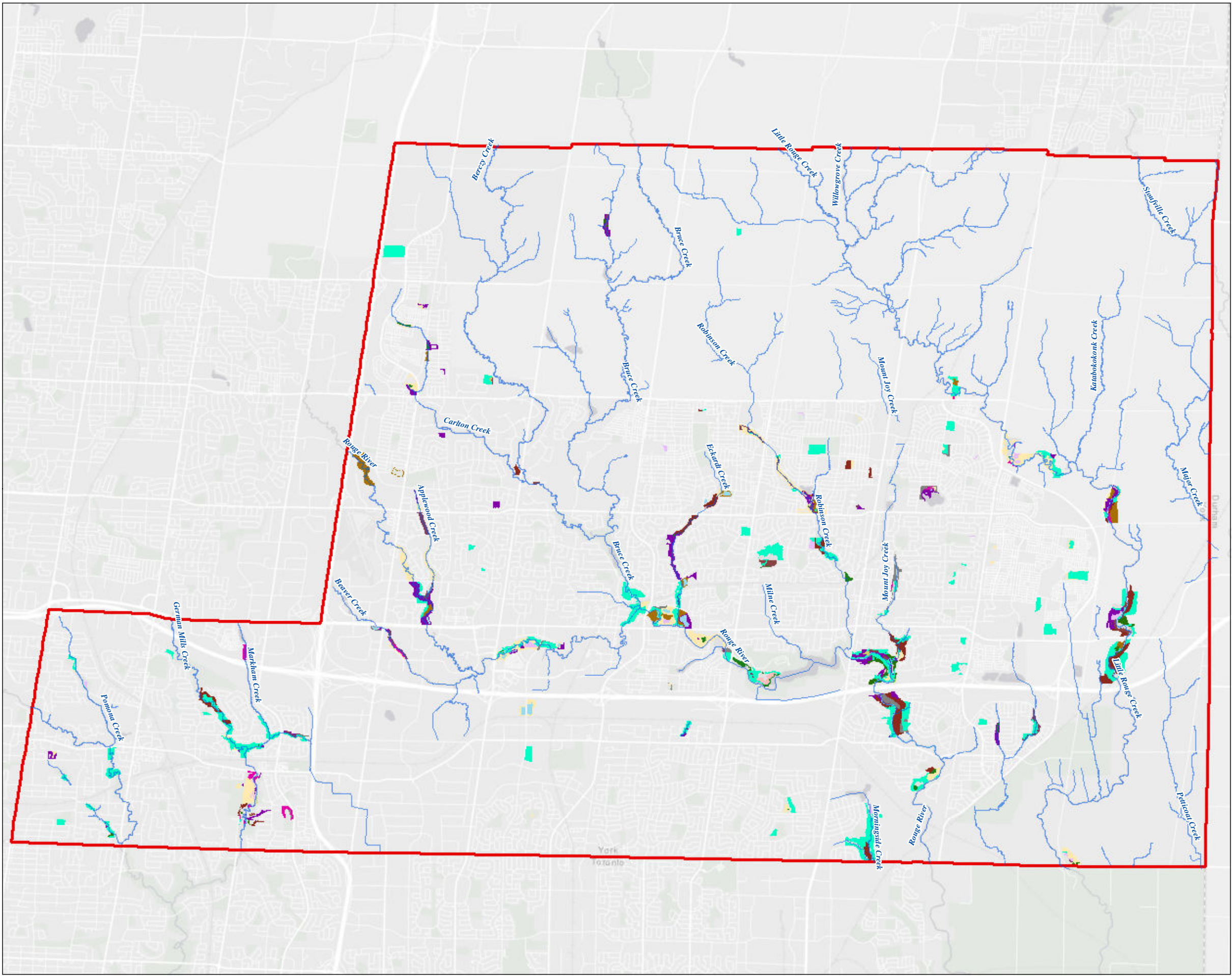
### 4.1. Vegetation Communities

#### 4.1.1. Information Collected During 2020 Field Work

From the fieldwork conducted in 2020, a total 556 polygons of vegetation communities were identified and mapped, totaling 569.6 ha in area. Broad descriptions for each vegetation ecosite classification recorded are provided in **Appendix 2**, with detailed results of classification within each polygon provided in an ArcGIS On-line database. The location and distribution of surveyed vegetation communities obtained during field work is shown in **Figure 2**. The most identified major classification was woodland (61%), which includes deciduous, coniferous, and mixed forest (FOD, FOC, FOM), plantation (CUP), and cultural woodland (CUW), totaling 345 ha (**Figure 3**). Following woodlands, open space and successional (22%) was the next most identified vegetation community which included open beach (BBO), bluff (BLO), cultural meadow (CUM), cultural savannah (CUS), and cultural thicket (CUT), totaling 128 ha. Deciduous forest (FOD) was the most identified polygon classification with 213.7 ha comprised of 156 polygons, followed by Cultural Meadow CUM (90 ha), Cultural Woodland CUW (57.2 ha), and Mixed Forest FOM (53.0 ha).

Open wetland communities (**Figure 2**) including meadow marsh (MAM), shallow marsh (MAS), and thicket swamp (SWT) comprised 5% of the vegetation sampled in 2020, totaling 29 ha. Aquatic communities included open aquatic (OAO), making up 4%, totaling 21 ha. Wooded wetlands made up 6%, which included deciduous, coniferous, and mixed swamp (SWC, SWD, SWM), totaling 32 ha. Comparison with previous wetland evaluations showed that the majority (63%) of wetlands polygons surveyed in 2020 had not been recorded by MNRF.





**Figure 2 | Markham Natural Features Inventory:**  
Vegetation Communities Recorded in 2020 Field Studies

**Legend**

□ Municipality  
— Watercourses

**Ecological Land Classification**

■ Agriculture	■ Meadow Marsh
■ Anthropogenic	■ Shallow Marsh
■ Open Beach	■ Open Aquatic
■ Shrub Beach	■ Floating-leaved Shallow Aquatic
■ Open Bluff	■ Mixed Shallow Aquatic
■ Tree Bluff	■ Submerged Shallow Aquatic
■ Cultural Meadow	■ Coniferous Swamp
■ Cultural Plantation	■ Deciduous Swamp
■ Cultural Savannah	■ Mixed Swamp
■ Cultural Thicket	■ Thicket Swamp
■ Cultural Woodland	■ Open Tallgrass Prairie
■ Treed Fen	
■ Coniferous Forest	
■ Deciduous Forest	
■ Mixed Forest	
■ Hedgerow	

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 Km

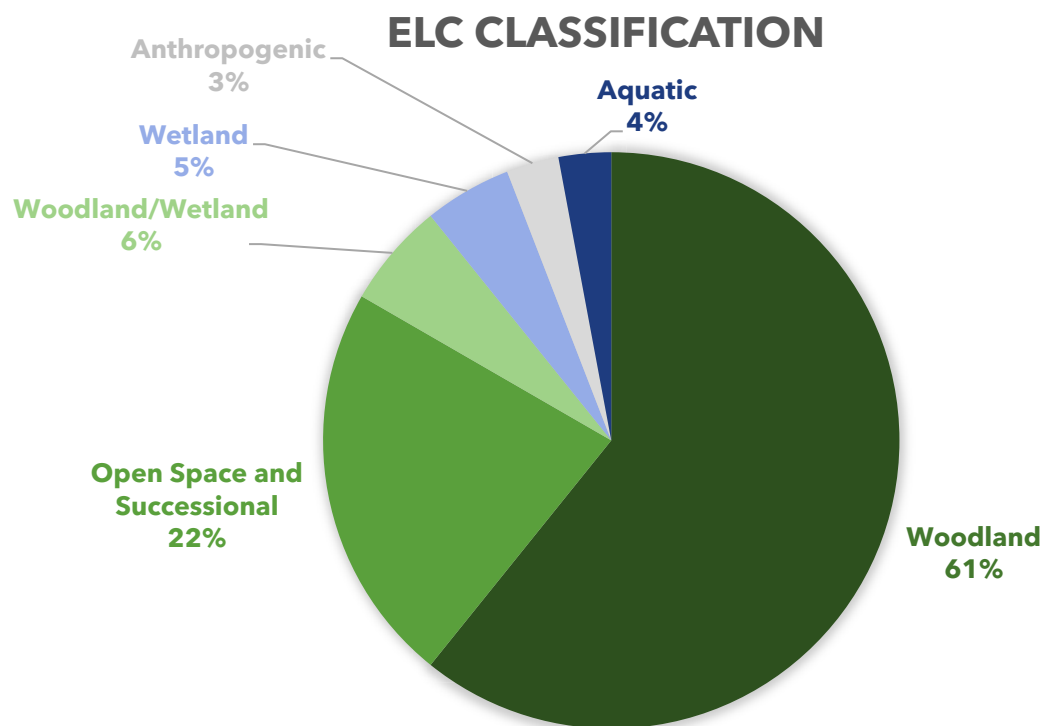
Project Number 20-1131	Date: 2021-04-22	N
---------------------------	---------------------	---

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.

**north-south**  
ENVIRONMENTAL

**DOUGAN & ASSOCIATES**





**Figure 3. Percentage of total ELC classifications for all 2020 vegetation surveys completed in the study area.**

#### 4.1.1.1. *Deciduous Forest*

A total of 156 deciduous forest polygons were identified in 2020. Dominant species are noted in **Table 1**. Deciduous forests were largely dominated by Sugar Maple (*Acer saccharum*), Black Walnut (*Juglans nigra*), Hybrid Willow (*Salix x fragilis*), and Manitoba Maple (*Acer negundo*), with other common species including American Beech (*Fagus grandifolia*), Black Cherry (*Prunus serotina*) and American Basswood (*Tilia americana*). Red Oak (*Quercus rubra*) was noted as a dominant in only 10 polygons. Lowland forests, especially on floodplains, were dominated frequently by Black Walnut and Sugar Maple, with Basswood as a common component. The sub-canopies of upland forests were generally dominated by Sugar Maple, which often occurred in the shrub layer and ground layer as well. Sub-canopies of lowland forests were frequently dominated by Manitoba Maple.

Floodplains were difficult to classify. The prevalence of sugar maple as the major dominant species on many floodplains led to their classification as lowland forest rather than swamp, as Sugar Maple is considered a tree species indicative of upland habitats. These types of floodplains were quite variable, often supporting patches of understory species more indicative of swamps. In these cases, the community was classified as having inclusions of deciduous swamp. Floodplains also frequently supported patches of Hybrid Willow and Manitoba Maple, and if these species were dominant in



areas over 0.5 ha (which is noted by ELC guidelines as the smallest area that warrants separate classification), the area was classified as swamp.

Black Walnut was a common species in disturbed Markham forests, and occurred on a variety of habitats: most often on floodplains, but frequently on disturbed upper slopes as well. Sugar Maple was often a dominant in other layers, particularly the sub-canopy, but also including the shrub and ground layers.

Ash species (*Fraxinus americana*, *F. pennsylvanica*) were recorded less commonly as a canopy dominant than other species, and almost all ash in the canopy had signs of Emerald Ash Borer (*Agilus planipennis*), a pervasive pest of southern Ontario forests. Large areas of dead ash (and/or extensive deadfall) were not often noted, probably because it was not as extensive a component of Markham forests as in some parts of southern Ontario. However, most of the larger deadfall noted in forests consisted of fallen ash. Ash was often noted in the shrub layer as seedlings in areas where dead ash had fallen and allowed in higher light levels. Small patches of upland forest surrounded by urban development were often visibly less diverse than forests that were part of larger complexes along rivers, for example.

The understory and ground layer in deciduous forests was composed of a mixture of native and non-native species. Common Buckthorn (*Rhamnus cathartica*), one of the principal non-native invasive shrubs in Canada (White et al. 1995), was the most common species (either native or non-native) noted as a dominant in the shrub layer. Dog-strangling Vine (*Vincetoxicum rossicum*) and Garlic-mustard (*Alliaria petiolata*), also highly invasive non-native species, were noted frequently but were generally patchy, though in small urban forests they were sometimes more pervasive. Native species adapted to disturbed habitats were found in most forest habitats, including Enchanter's Nightshade (*Circaea canadensis*) and Avens (*Geum*) species. Native spring-flowering species such as White Trillium (*Trillium grandiflorum*) tended to be patchy and infrequent. Generally, diversity of spring flowering species was low.

**Table 1. Most common dominant species of deciduous forest and number of polygons in which they were noted in Markham surveys.**

Upper Layer Species	Poplar Species	Sugar Maple	Black Walnut	Manitoba Maple	Hybrid Willow	Ash species	
Canopy	15	55	56	41	52	12	
Sub-canopy	8	55	24	71	20	26	
Lower Layer Species	Chokecherry	Common Buckthorn	Sugar Maple	Ash Species	Native Spring Ephemerals	Garlic-mustard	Dog-strangling Vine
Shrub Layer	46	77	18	42			
Ground Layer			22		30	36	13



Norway Maple (*Acer platanoides*), a significant non-native invasive species in much of the GTA, was rare in forest habitats, but was sometimes more prevalent in well-used parks, especially along trails and trail entrances.

#### 4.1.1.2. Mixed Forest

A total of 35 mixed forest polygons were investigated by the study team. As shown in **Table 2**, mixed forests, often on slopes and intermediate and lower terraces along floodplains, were generally dominated by Sugar Maple, Eastern White Cedar (*Thuja occidentalis*) and Eastern Hemlock (*Tsuga canadensis*). Not as many mixed forests contained Manitoba Maple as a dominant species as found in deciduous forest. A few mixed forests were dominated by White Pine (*Pinus strobus*). Common Buckthorn was often noted as one of the dominant species in the shrub and ground layers, but was less often noted as abundant than in deciduous forests. Spring ephemeral species occurred as a dominant in nearly half of the mixed forests surveyed; generally species of more flexible habitat requirements such as Virginia Waterleaf (*Hydrophyllum virginianum*) and May-apple (*Podophyllum peltatum*). Enchanter's Nightshade occurred in most mixed forest habitats.

**Table 2. Most common dominant species of mixed forest and number of polygons in which they were noted in Markham surveys.**

Upper Layer Species	Sugar Maple	White Pine	Eastern Hemlock	Eastern White Cedar	Manitoba Maple
Canopy		3	12	11	6
Sub-canopy		0	6	14	5
Lower Layer Species		Garlic-mustard	Dog-strangling Vine	Common Buckthorn	Native Spring Ephemerals
Shrub				19	
Ground		8	1	8	14

#### 4.1.1.3. Coniferous Forest

Only 17 polygons of coniferous forest were investigated by the study team, so generalizations were difficult to make. Forest dominated by Eastern White Cedar was the most common type of coniferous forest found. In forest dominated by Eastern Hemlock, another common coniferous species in Markham, deciduous species were a co-dominant, usually leading to a classification as mixed forest. Where cedar grew in the highest density, there was almost no sub-canopy, shrub layer or ground later. All polygons supported a shrub layer composed of Manitoba Maple, Common Buckthorn, mixed with cedar. The ground layer was largely dominated by non-native species in most coniferous forest, mainly Dog-strangling Vine, Garlic-mustard or Common Buckthorn.

#### 4.1.1.4. Deciduous Swamp

The canopy of deciduous swamp was generally relatively open (from approximately 35-60%) and separation of canopy and sub-canopy was indistinct, so canopy and sub-canopy are grouped



together in **Table 3**. A total of 27 deciduous swamp communities was investigated by the study team. Swamps were generally dominated by Manitoba Maple and Hybrid Willow, with a mixture of Green Ash (*Fraxinus pennsylvanica*). Most ash was affected by Emerald Ash Borer, though generally the tree canopies were still alive and the ash still standing, and there were few areas of extreme blowdown.

**Table 3. Most common dominant species of deciduous swamp and number of polygons in which they were noted in Markham surveys.**

Upper Layer Species	Hybrid Willow	Manitoba Maple	Ash Species
Canopy and Sub-canopy	13	20	12
Lower Layer Species	Manitoba Maple	Native ground layer species (e.g. Stinging Nettle, Wood Nettle, Late Goldenrod, Jewelweed, sedges)	Non-native Species (e.g. Reed Canary-grass, Forget-me-not species, Himalayan Balsam, Creeping Bent-grass)
Shrub Layer	15		
Ground Layer		24	14

The occurrence of other swamp tree species was rare, with only one report of Freeman's Maple (*Acer x freemanii*) or Silver Maple (*A. saccharinum*) as a dominant, likely because these species are dominant in swamps that are inundated with water in early spring whereas Markham floodplains bore signs of only occasional flooding. There was one occurrence of Bur Oak (*Quercus macrocarpa*) as one of the dominant species in the canopy, but the abundance of Bur Oak was not considered sufficient to describe this unit as Bur Oak swamp, which is a rare vegetation community. Common Buckthorn was rare in swamps, in only four instances reported as a dominant.

#### 4.1.1.5. Mixed and Coniferous Swamp

Eight mixed swamp communities were investigated by the study team. Dominant species are noted in **Table 4**. Eastern White Cedar was the most common species noted as a dominant. Green Ash occurred in the shrub layer as abundant seedlings, but most larger trees were affected by Emerald Ash Borer.

**Table 4. Most common dominant species of mixed swamp and number of polygons in which they were noted in Markham surveys.**

Upper Layer Species	Eastern White Cedar	Manitoba Maple	Common Buckthorn	Green Ash
Canopy and Sub-canopy	8	4		3
Shrub			4	3



The ground layer supported at least one native species in all eight polygons, with species noted similar to those in deciduous swamps.

Only four coniferous swamp polygons were investigated: two were dominated by Eastern White Cedar, one by Balsam Fir (*Abies balsamea*), and one by Sugar Maple, but with a dense understory of coniferous species. The understory was generally very sparse, but included patches of Bulblet Bladder-fern (*Cystopteris bulbifera*), as well as areas of Dog-strangling Vine and Jewelweed (*Impatiens capensis*).

#### 4.1.1.6. Cultural Plantation

A total of 26 cultural plantations were investigated by the study team. Canopies of cultural plantations were particularly variable, supporting a variety of commonly planted coniferous tree species including White Pine, Eastern White Cedar, White Spruce (*Picea glauca*), Norway Spruce (*P. abies*), Scots Pine (*Pinus sylvestris*) and European Larch (*Larix decidua*). The understories of cultural plantations were generally sparse, dominated in gaps and at the edges by non-native species such as Garlic-mustard and Dog-strangling Vine.

#### 4.1.1.7. Cultural Woodland

Cultural Woodlands were frequent in Markham, with 59 polygons investigated. They were largely dominated by non-native tree species with abundant non-natives also in the sub-canopy, shrub layer and ground layer, as shown in **Table 5**. Notably, Black Walnut was an abundant species in cultural woodland as well as deciduous forests.

**Table 5. Most common dominant species of cultural woodland and number of polygons in which they were noted in Markham surveys.**

Upper Layer Species	Sugar Maple	Black Walnut	Hybrid Willow	Manitoba Maple
Canopy and Sub-canopy	10	31	23	29
Lower Layer Species	Common Buckthorn	Non-native Species (e.g. Garlic-mustard, Smooth Brome Grass, Kentucky Bluegrass)	Native Species (e.g. Enchanter's Nightshade, Canada Goldenrod, Thicket Creeper)	
Shrub	28			
Ground		47	46	

Though native species were as frequently noted in the ground layer as non-natives, the native species were generally those characteristic of disturbed habitats.



#### 4.1.1.8. Meadow Marsh

A total of 36 meadow marsh communities were investigated by the study team (**Figure 8**). Dominant species are shown in **Table 6**. Meadow marsh was generally dominated by an open canopy (less than 25% cover) consisting of Manitoba Maple and Hybrid Willow. Scattered shrubs also occurred in the understory, generally consisting of Red-osier Dogwood (*Cornus stolonifera*). The ground layer consisted of non-native grasses, mainly Reed Canary-grass (*Phalaris arundinacea*) with occasional stands of European Reed (*Phragmites australis*). Other common ground layer species were Joe-pye Weed (*Eutrochium maculatum*) and Jewelweed. Despite the prevalence of non-native grasses, native species were generally two or more of the dominant species in all but one of the polygons investigated.

**Table 6. Most common dominant species and number of polygons in which they were noted in meadow marsh in Markham surveys.**

	Hybrid Willow	Manitoba Maple	European Reed	Reed Canary-grass
Canopy and Sub-canopy	11	16		
Ground Layer			6	20

#### 4.1.1.9. Shallow Marsh

A total of 23 shallow marsh polygons were investigated by the study team (**Figure 8**). Dominant species (**Table 7**) were similar to those in meadow marsh, except that cattail (*Typha* spp.) was the principal dominant species. The native Broadleaved Cattail (*T. latifolia*) was noted in 9 of these communities, often in conjunction with non-native Narrow-leaved Cattail (*T. angustifolia*) and the hybrid between them (*T. x glauca*).

**Table 7. Most common dominant species and number of polygons in which they were noted in meadow marsh in Markham surveys.**

	Hybrid Willow	Manitoba Maple	Cattail Species	European Reed	Reed Canary-grass
Canopy and Sub-canopy	13	7			
Ground Layer			20	5	8

### 4.1. Information from Greenway-wide Vegetation Mapping

As described in Section 3.1, ELC was determined for the balance of the lands in Markham's Greenway, as well as for a few areas outside the Greenway, where site visits were not conducted through aerial photo interpretation and consulting secondary data sources. This section describes the results of the Greenway-wide vegetation mapping.



The aerial coverage and number of polygons of each Ecoseries, as well as the percent cover within the study area as shown in **Figures 4A to 4D** (which mainly included the Greenway System), are provided in **Table 8**. Vegetation mapping obtained from all sources, including the 2020 surveys, aerial photography interpretation and the existing information obtained from sources noted in **Section 3.1**, are listed in **Table 8**. Mapped communities are shown in **Figures 4A to 4D**. The total cover of vegetation mapped in this study (including agricultural lands and anthropogenic areas such as parks and backyard areas) is 33%. Terrestrial vegetation comprises approximately 30% of the study area, with anthropogenic and agricultural ecosites occupying the largest proportion of that percentage. In terms of natural vegetation, forest occupies the largest percent of the City (4.3%). Wetlands occupy a slightly smaller percent of the City, at 3.7%. Most of the wetland cover is comprised of open communities such as meadow marsh, shallow marsh and open water. The “woodland” cover, which is a loose term used to describe all treed communities including forest, cultural woodland, treed swamp and treed fen, is 7.85%.

**Table 8. Vegetation Ecoseries and their Areas in the Greenway System in the City of Markham**

Ecoseries		Number of Polygons	Average Polygon Area (ha)	Total Area (ha)	Percent Vegetation (%)	Percent Markham (%)
<b>WETLAND</b>	<b>Wetland</b>	<b>1129</b>	<b>0.55</b>	<b>793.20</b>	<b>11.23</b>	<b>3.73</b>
<b>Marsh / Aquatic</b>		<b>800</b>	<b>0.38</b>	<b>501.51</b>	<b>7.10</b>	<b>2.36</b>
Open Water	OAO	216.00	0.80	172.34	2.44	0.81
Shallow Marsh	MAS	172.00	0.34	58.40	0.83	0.27
Meadow Marsh	MAM	382.00	0.69	264.76	3.75	1.24
Floating-leaved Shallow Aquatic	SAF	6.00	0.13	0.78	0.01	0.00
Mixed Shallow Aquatic	SAM	1.00	0.09	0.09	0.00	0.00
Submerged Shallow Aquatic	SAS	23.00	0.22	5.13	0.07	0.02
<b>Swamp / Treed Fen</b>	<b>SW / FE</b>	<b>329.00</b>	<b>0.76</b>	<b>291.70</b>	<b>4.13</b>	<b>1.37</b>
Deciduous Swamp	SWD	173.00	0.95	163.79	2.32	0.77
Coniferous Swamp	SWC	21.00	0.90	18.82	0.27	0.09
Thicket Swamp	SWT	84.00	0.63	52.91	0.75	0.25
Mixed Swamp	SWM	50.00	1.12	56.00	0.79	0.26

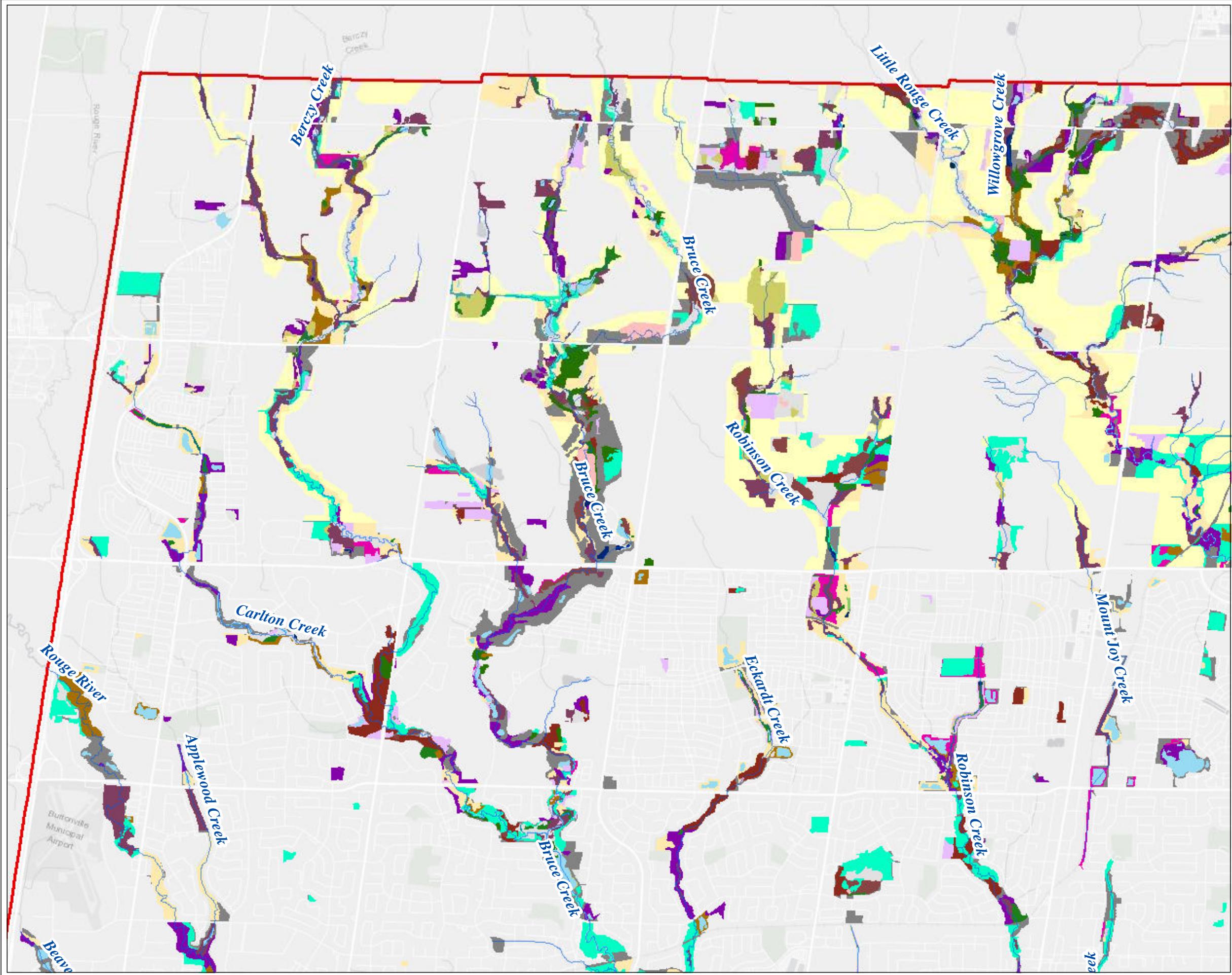


Ecoseries		Number of Polygons	Average Polygon Area (ha)	Total Area (ha)	Percent Vegetation (%)	Percent Markham (%)
Treed Fen <sup>1</sup>	FET	1.00	0.19	0.19	0.00	0.00
<b>TERRESTRIAL</b>		<b>3164.00</b>	<b>0.76</b>	<b>6270.56</b>	<b>88.77</b>	<b>29.48</b>
<b>Anthropogenic</b>	<b>Cultural</b>	<b>2261.00</b>	<b>2.31</b>	<b>5342.95</b>	<b>75.64</b>	<b>25.12</b>
Agricultural	AGR	275.00	11.66	3209.14	45.43	15.09
Cultural Meadow	CUM	542.00	1.44	781.63	11.07	3.68
Cultural Thicket	CUT	98.00	1.00	97.96	1.39	0.46
Cultural Savannah	CUS	104.00	1.24	128.83	1.82	0.61
Cultural Plantation	CUP	261.00	0.60	157.76	2.23	0.74
Cultural Woodland	CUW	308.00	0.90	277.36	3.93	1.30
Hedgerows	HR	154.00	0.46	71.49	1.01	0.34
Anthropogenic	ANTH	519.00	1.19	618.80	8.76	2.91
<b>Other</b>		<b>20.00</b>	<b>0.12</b>	<b>3.35</b>	<b>0.05</b>	<b>0.02</b>
Open Bluff	BLO	3.00	0.24	0.71	0.01	0.00
Treed Bluff	BLT	1.00	0.06	0.06	0.00	0.00
Shrub Beach / Bar	BBS	6.00	0.11	0.66	0.01	0.00
Open Beach / Bar	BBO	7.00	0.18	1.29	0.02	0.01
Open Tallgrass Prairie <sup>2</sup>	TPO	3.00	0.02	0.62	0.01	0.00
<b>Forest</b>	<b>FO</b>	<b>883.00</b>	<b>1.06</b>	<b>924.26</b>	<b>13.08</b>	<b>4.35</b>
Deciduous Forest	FOD	620.00	1.01	626.82	8.87	2.95
Coniferous Forest	FOC	110.00	0.82	90.55	1.28	0.43
Mixed Forest	FOM	153.00	1.35	206.89	2.93	0.97
<b>Total</b>		<b>4293.00</b>	<b>1.05</b>	<b>7063.77</b>	<b>100.00</b>	<b>33.21</b>

<sup>1</sup> Treed fen should be verified as this would be extremely rare in Markham

<sup>2</sup> All prairie noted in Markham has been planted; this community is not native





**Figure 4A | Markham Natural Features Inventory:**

Ecological Land Classification within the Study Area from All Sources:  
Northwest Markham

**Legend**

□ Municipality  
— Watercourses

**Ecological Land Classification**

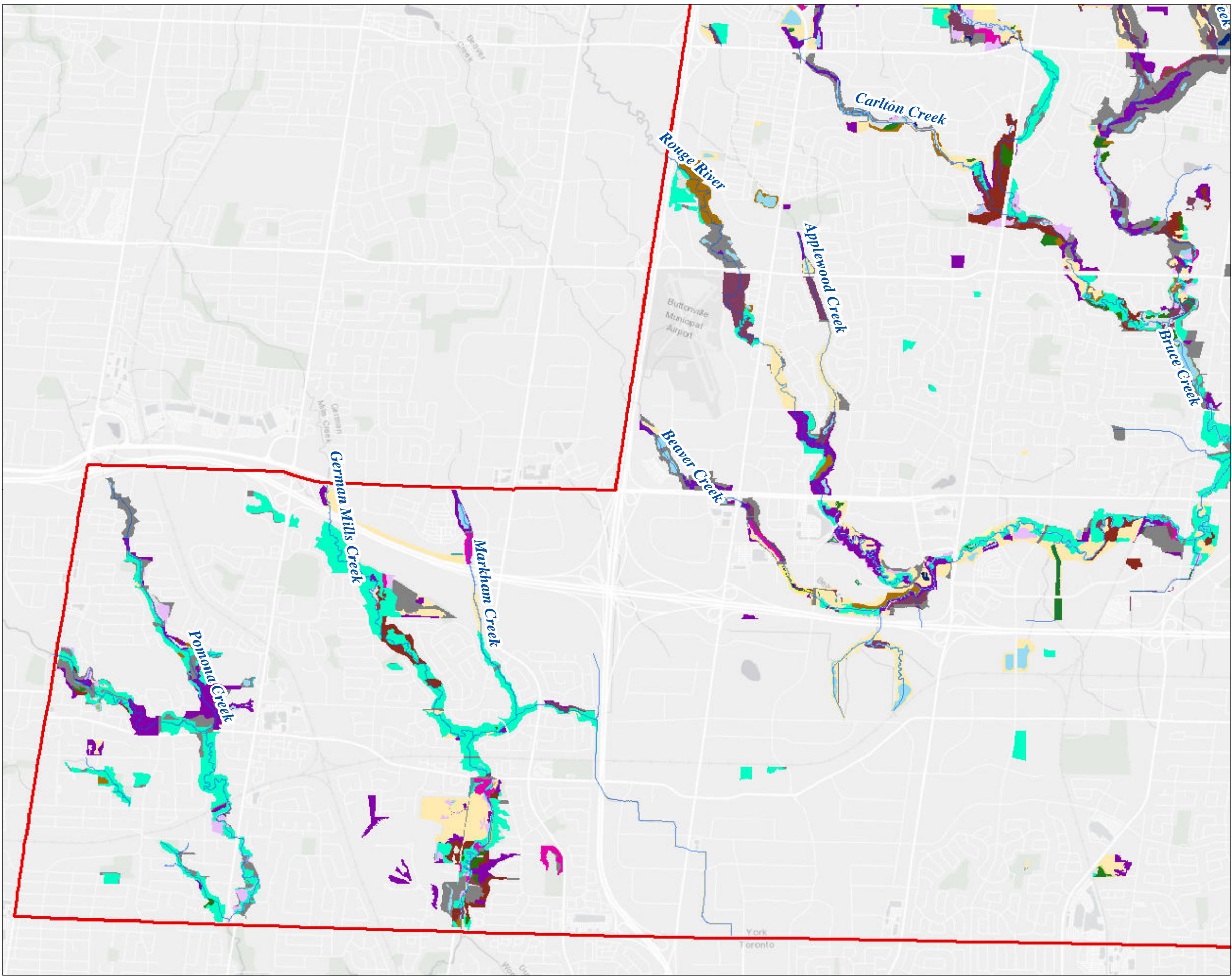
■ Agriculture	■ Meadow Marsh
■ Anthropogenic	■ Shallow Marsh
■ Open Beach	■ Open Water
■ Shrub Beach	■ Floating-leaved
■ Open Bluff	■ Shallow Aquatic
■ Tree Bluff	■ Mixed Shallow
■ Cultural Meadow	■ Aquatic
■ Cultural Plantation	■ Submerged Shallow
■ Cultural Savannah	■ Aquatic
■ Cultural Thicket	■ Coniferous Swamp
■ Cultural Woodland	■ Deciduous Swamp
■ Treed Fen	■ Mixed Swamp
■ Coniferous Forest	■ Thicket Swamp
■ Deciduous Forest	■ Open Tallgrass
■ Mixed Forest	■ Prairie
■ Hedgerow	

0 0.5 1 1.5 2 2.5 Km

Project Number: 20-1131      Date: 2021-04-22     

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





**Figure 4B | Markham Natural Features Inventory:**  
Ecological Land Classification within the Study Area from All Sources: Southwest Markham

**Legend**

□ Municipality  
— Watercourses

**Ecological Land Classification**

■ Agriculture	■ Meadow Marsh
■ Anthropogenic	■ Shallow Marsh
■ Open Beach	■ Open Water
■ Shrub Beach	■ Floating-leaved Shallow Aquatic
■ Open Bluff	■ Mixed Shallow Aquatic
■ Tree Bluff	■ Submerged Shallow Aquatic
■ Cultural Meadow	■ Coniferous Swamp
■ Cultural Plantation	■ Deciduous Swamp
■ Cultural Savannah	■ Mixed Swamp
■ Cultural Thicket	■ Thicket Swamp
■ Cultural Woodland	■ Open Tallgrass Prairie
■ Treed Fen	
■ Coniferous Forest	
■ Deciduous Forest	
■ Mixed Forest	
■ Hedgerow	

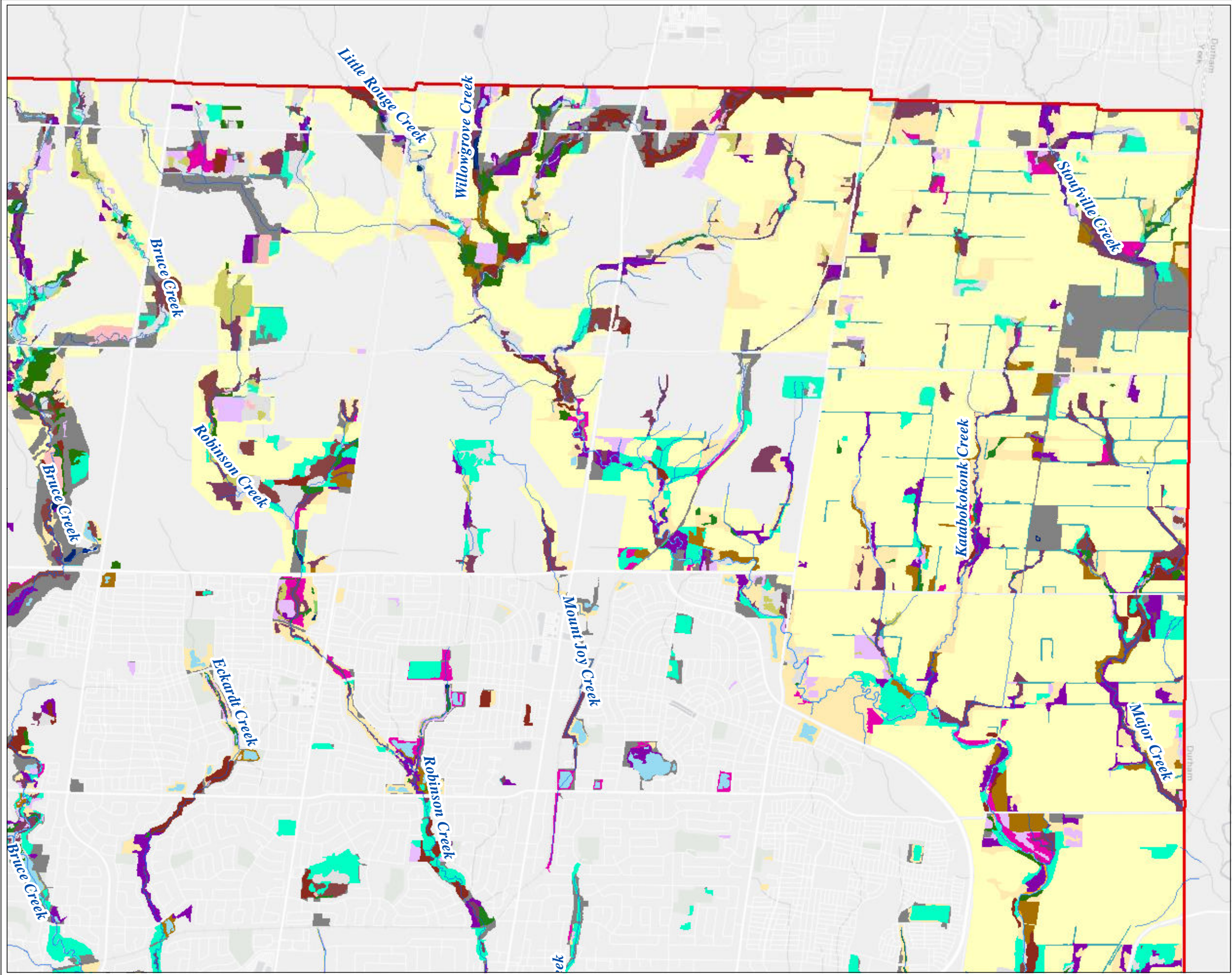


Project Number 20-1131	Date: 2021-04-22	
---------------------------	---------------------	--

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.







**Figure 4C | Markham Natural Features Inventory:**

Ecological Land Classification within the Study Area from All Sources: Northeast Markham

**Legend**

□ Municipality

— Watercourses

**Ecological Land Classification**

Agriculture	Meadow Marsh
Anthropogenic	Shallow Marsh
Open Beach	Open Water
Shrub Beach	Floating-leaved
Open Bluff	Shallow Aquatic
Tree Bluff	Mixed Shallow Aquatic
Cultural Meadow	Submerged Shallow Aquatic
Cultural Plantation	Coniferous Swamp
Cultural Savannah	Deciduous Swamp
Cultural Thicket	Mixed Swamp
Cultural Woodland	Thicket Swamp
Treed Fen	Open Tallgrass Prairie
Coniferous Forest	
Deciduous Forest	
Mixed Forest	
Hedgerow	

0 0.5 1 1.5 2 2.5 Km

Project Number 20-1131

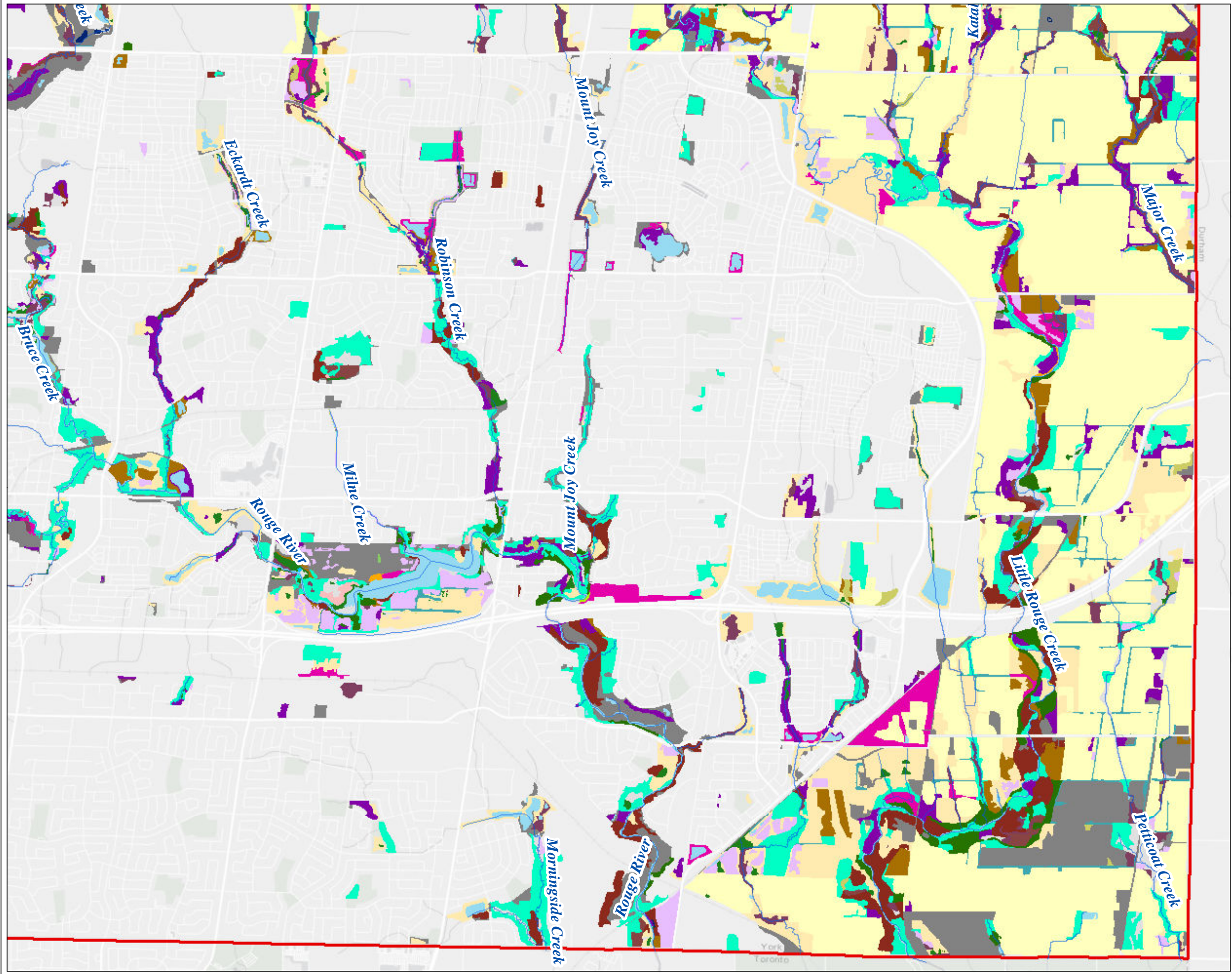
Date: 2021-04-22

Map Produced by North South Environmental (NSE) Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE. Data Provided by: North South Environmental Inc.

**north-south ENVIRONMENTAL**

**DOUGAN & ASSOCIATES**





**Figure 4D | Markham Natural Features Inventory:**

Ecological Land Classification within the Study Area from All Sources: Southeast Markham

**Legend**

□ Municipality

— Watercourses

**Ecological Land Classification**

■ Agriculture	■ Meadow Marsh
■ Anthropogenic	■ Shallow Marsh
■ Open Beach	■ Open Water
■ Shrub Beach	■ Floating-leaved Shallow Aquatic
■ Open Bluff	■ Mixed Shallow Aquatic
■ Tree Bluff	■ Submerged Shallow Aquatic
■ Cultural Meadow	■ Coniferous Swamp
■ Cultural Plantation	■ Deciduous Swamp
■ Cultural Savannah	■ Mixed Swamp
■ Cultural Thicket	■ Thicket Swamp
■ Cultural Woodland	■ Open Tallgrass Prairie
■ Treed Fen	
■ Coniferous Forest	
■ Deciduous Forest	
■ Mixed Forest	
■ Hedgerow	

0 0.5 1 1.5 2 2.5 Km

Project Number 20-1131 Date: 2021-04-22

Map Produced by North South Environmental (NSE) Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE. Data Provided by: North South Environmental Inc.

**north-south ENVIRONMENTAL**

**DOUGAN & ASSOCIATES**



## 4.2. Flora and Floristics

A total of 478 species of flora were identified in the detailed botanical surveys, with an additional 43 identified to genus only. Of the 478 species, 319 (67%) were native species and 159 (33%) were non-native and/or introduced species.

Areas of biodiversity hotspots (according to results obtained during 2020 detailed botanical surveys) were determined according to the following criteria:

- Numbers of species noted, as illustrated in **Figure 5A**; using a natural breakdown of species numbers, areas with the highest diversity tended to have between approximately 48 and 109 species; and
- Numbers of Regionally and locally rare species noted (**Figure 5B**), with areas of highest diversity having between 9 and 24 species.

The highest diversity of native plant species was noted largely in the eastern part of the study area, but there were other areas of high biodiversity as well throughout Markham (**Figure 5A**), notably the Raymerville Woodlot (actually a mosaic of forest and swamp), and Morningside Creek (a tributary of the Rouge River) near Eastvale Drive and Steeles Avenue East, both in a highly urban area. Additional areas of high biodiversity have been noted in Markham, for example the Rouge River in Markham Centre, and Robinson Swamp Provincially Significant Wetland; but additional surveys would be needed to provide a comprehensive picture of high biodiversity throughout the City.

**Table 9** provides a comparison of the vegetation quality and number of significant species in Markham's communities. Floristic quality (as measured by the Floristic Quality Analysis, described in Section 3.6) was highest in deciduous and mixed forest communities. The quality of mixed swamps was also high. Cultural woodland communities supported an unusually high FQI, likely because they were extensive and occurred on many types of terrain.

Deciduous forests also supported the highest number of regionally significant species. Wetlands supported high numbers of regionally significant species for their size: wetlands only occupied 11% of the landscape but several open and wooded wetland community types supported between 11 and 21 significant species. Cultural woodlands supported 18 regionally significant species, because of their wide extent and their occurrence in a variety of microclimatic locations.

**Table 9. Ecosite Summaries of Species Recorded During Detailed Botanical Surveys**

Ecosite	Total Species	Number of Native Species	Number of Introduced Species	Number of Significant Species*	FQI Native spp.
BLO	23	13 (57%)	10 (43%)	1	7.21
BOO1	10	7 (70%)	3 (30%)	2	9.45



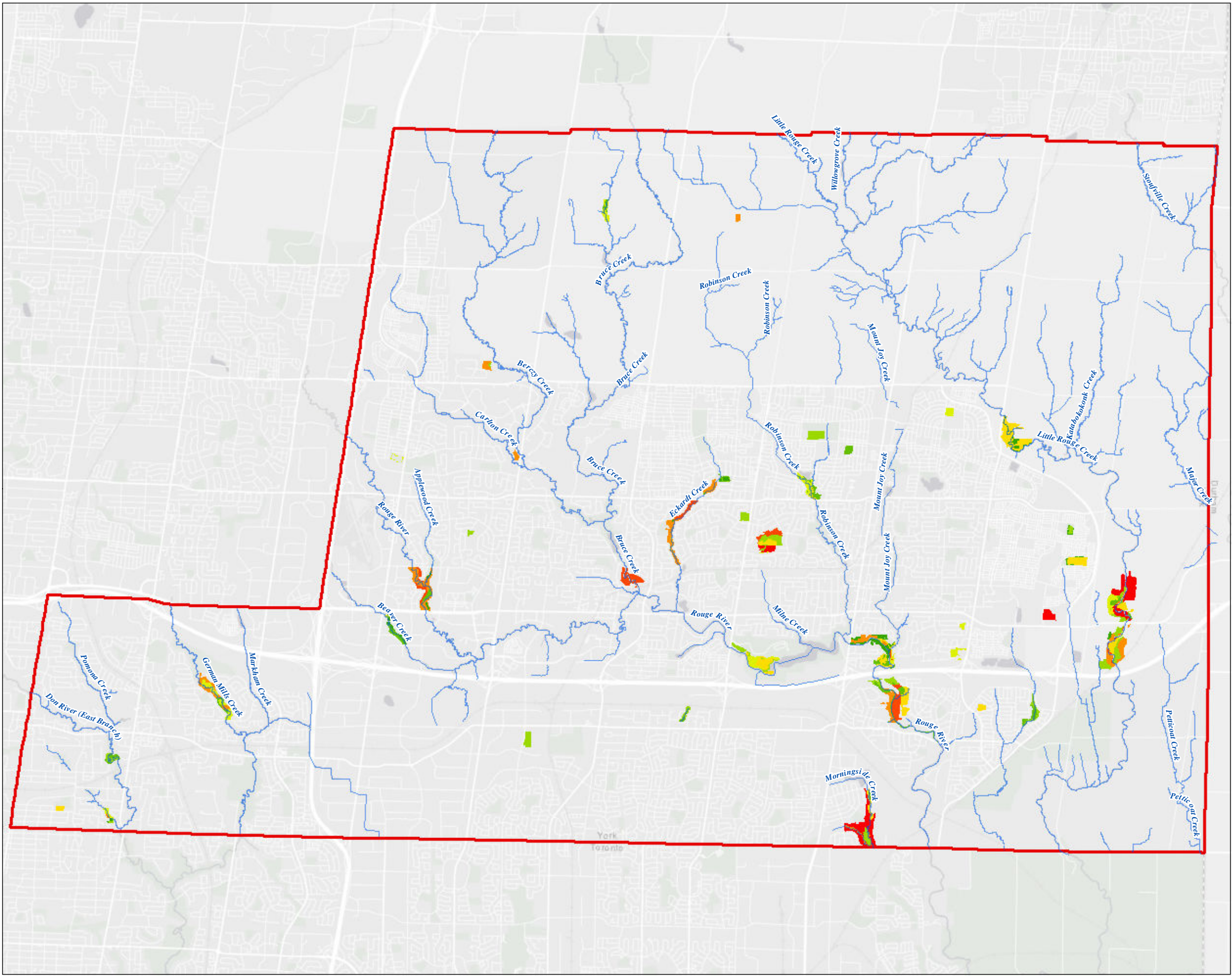
<b>Ecosite</b>	<b>Total Species</b>	<b>Number of Native Species</b>	<b>Number of Introduced Species</b>	<b>Number of Significant Species*</b>	<b>FQI Native spp.</b>
CUM	42	23 (57%)	17 (43%)	3	14.39
CUM1	81	41 (51%)	40 (49%)	3	20.30
CUP3	31	20 (65%)	11 (35%)	1	16.10
CUS	45	29 (64%)	16 (36%)	1	18.76
CUS1	42	28 (67%)	14 (33%)	3	16.25
CUT	27	12 (44%)	15 (56%)	0	6.93
CUW	112	76 (68%)	36 (32%)	4	30.97
CUW1	163	110 (67%)	53 (33%)	18	41.09
FOC1	15	12 (80%)	3 (20%)	1	9.53
FOC2	18	17 (94%)	1 (6%)	0	17.71
FOC3	8	6 (75%)	2 (25%)	0	10.21
FOC4	49	38 (78%)	11 (22%)	3	26.60
FOD	66	45 (68%)	21 (32%)	4	27.58
FOD3	20	13 (65%)	7 (35%)	1	9.15
FOD4	48	32 (67%)	16 (33%)	3	20.15
FOD5	181	138 (76%)	43 (24%)	21	53.80
FOD6	114	85 (75%)	29 (25%)	11	40.46
FOD7	176	120 (68%)	56 (32%)	16	44.46
FOM	52	40 (77%)	12 (23%)	3	22.93
FOM3	12	11 (92%)	1 (8%)	0	14.77
FOM4	57	46 (81%)	11 (19%)	5	27.28
FOM5	12	8 (67%)	4 (33%)	1	11.67
FOM6	107	90 (84%)	17 (16%)	6	44.17
FOM7	72	55 (76%)	17 (24%)	5	31.15



Ecosite	Total Species	Number of Native Species	Number of Introduced Species	Number of Significant Species*	FQI Native spp.
MAM	34	18 (53%)	16 (47%)	1	11.08
MAM2	168	109 (65%)	59 (35%)	18	39.18
MAS2	86	66 (77%)	20 (23%)	11	29.67
OAO	16	11 (69%)	5 (31%)	1	11.76
SWC1	30	23 (73%)	7 (27%)	2	14.28
SWC3	48	35 (73%)	13 (27%)	6	26.20
SWD2	25	22 (88%)	3 (12%)	2	19.61
SWD3	77	55 (71%)	22 (29%)	4	28.86
SWD4	121	87 (72%)	34 (28%)	14	38.27
SWM1	131	99 (76%)	32 (24%)	11	43.72
SWT	19	15 (79%)	4 (21%)	0	12.14
SWT2	71	51 (72%)	20 (28%)	5	26.47

\*Significant species: S1-S3, TRCA (L1-L3), GTA (R, R1), RM York (R, R1-9), Species at Risk (SC, THR, END), full species status ranking in **Appendix 1**





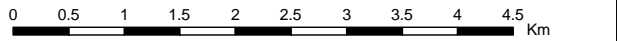
**Figure 5A | Markham Natural Features Inventory:**  
Distribution of Native Flora Biodiversity Hotspots Determined from Detailed Botanical Surveys

**Legend**

- Markham Boundary
- Watercourses

**Native Species Occurrence**

- 1 - 10
- 11 - 20
- 21 - 28
- 29 - 36
- 37 - 47
- 48 - 62
- 63 - 79
- 80 - 109



Project Number 20-1131	Date: 2021-04-22	
---------------------------	---------------------	--

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





### 4.3. Significant Flora

Three provincially significant species were recorded (**Table 10**). Their distribution is shown in **Figure 5B**. Diversity of significant species is concentrated along the Little Rouge River. Butternut was the most encountered provincially significant species. This species is endangered because of a canker, and all specimens recorded were badly cankered. Large Toothwort (*Cardamine maxima*) was noted in several forest polygons in one location in the Little Rouge Valley. Black Ash (*Fraxinus nigra*) has recently been evaluated as a threatened species according to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), but has not been given official status according to Canada's Species at Risk Act or Ontario's Endangered Species Act. It was found at two wetland sites (shallow marsh and deciduous swamp).

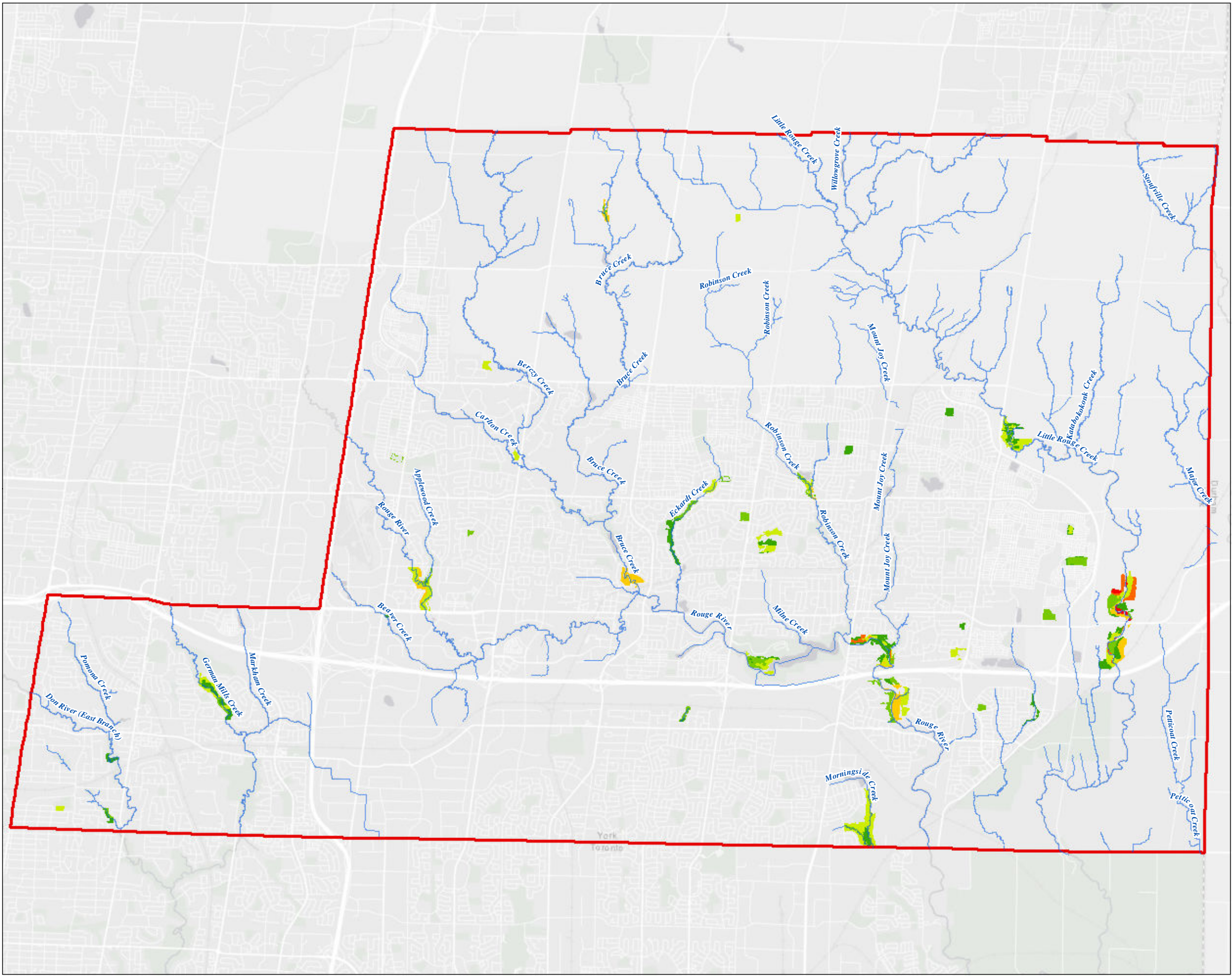
Seventy-three regionally and/or locally significant species were recorded by the study team: including 43 species rare in York Region (R, R1-R9), 35 species rare in the GTA (R, R1), and 47 species of conservation concern in the TRCA (L1-L3) watershed. Most of these are common in Ontario, but have become rare in York Region and/or in the TRCA watershed as urbanization of these areas has continued. Thirty-nine of these species are associated with wetland and riparian habitats. Thirty-four are species of forest habitat.

### 4.4. Significant Vegetation Communities

Two provincially significant vegetation communities have been documented within Markham. Three polygons are mapped as Tallgrass Prairie by TRCA. Tallgrass Prairie is a provincially and globally significant vegetation community. All tallgrass prairies in Markham have been planted. These communities were not visited by the study team. They were documented by TRCA as a mixture of native and non-native grasses.

Over 20 communities were reported to be dominated by Black Walnut, and were classified as Fresh - Moist Black Walnut Lowland Deciduous Forest Type, which is provincially rare with a status of S2S3. However, this community was generally highly disturbed, and did not appear to represent good examples of this vegetation type.





**Figure 5B | Markham Natural Features Inventory:**  
Distribution of Significant Flora Biodiversity Hotspots Determined from Detailed Botanical surveys

**Legend**

□ Markham Boundary  
— Watercourses

**Significant Species Occurences**

- 2
- 3 - 4
- 5 - 8
- 9 - 12
- 13 - 16
- 17 - 24

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 Km

Project Number 20-1131	Date: 2021-04-23	N
---------------------------	---------------------	---

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





**Table 10. Rare species including Species at Risk (THR, END) and S1-S3 for all sites and communities.**

Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	TRCA
<i>Cardamine maxima</i>	Large Toothwort	---	G5	NNR	---	S3	L4
<i>Fraxinus nigra</i>	Black Ash	THR	G5	N5	---	S4	L4
<i>Juglans cinerea</i>	Butternut	END	G4	N3N4	END	S2?	L4

L1-L3: species of regional conservation concern

**Table 11. Regionally and/or locally significant species for GTA (R, R1), TRCA (L1-L3), and RM York (R, R1-9).**

Scientific Name	Common Name	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA
<i>Acer nigrum</i>	Black Maple	G5	NNR		S4?		R4	L4
<i>Agrostis perennans</i>	Upland Bentgrass	G5	N5		S4?	R	R3	L3
<i>Alisma subcordatum</i>	Southern Water-plantain	G5	N5		S4?			L3
<i>Alnus incana</i>	Speckled Alder	G5	N5		S5			L3
<i>Anemone americana</i>	Round-lobed Hepatica	G5	NNR		S5	R	R5	L2
<i>Anemone quinquefolia</i>	Wood Anemone	G5	N5		S5	U	R3	L4
<i>Angelica atropurpurea</i>	Great Angelica	G5	N5		S5	R	R9	L3
<i>Aralia racemosa</i>	American Spikenard	G4G5	N5		S5	U	U	L3
<i>Bolboschoenus fluviatilis</i>	River Bulrush	G5	N5		S4S5	R	R3	L3
<i>Bromus latiglumis</i>	Broad-glumed Brome	G5	N5		S4	U	R5	L4
<i>Cardamine concatenata</i>	Cut-leaved Toothwort	G5	N5		S5			L3
<i>Carex albursina</i>	White Bear Sedge	G5	N5		S5	U	U	L3
<i>Carex cephaloidea</i>	Thin-leaved Sedge	G5	N5		S4	U	R9	L4
<i>Carex flava</i>	Yellow Sedge	G5	N5		S5	U	U	L3
<i>Carex grayi</i>	Gray's Sedge	G4	NNR		S4	R	R2	L3
<i>Carex interior</i>	Inland Sedge	G5	N5		S5			L3



Scientific Name	Common Name	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA
<i>Carex laevivaginata</i>	Smooth-cone Sedge	G5	N4		S4	R	R9	L3
<i>Carex laxiculmis</i>	Spreading Sedge	G5	N4		S4	R	R4	
<i>Carex leptalea</i>	Bristle-stalked Sedge	G5	N5		S5	U	U	L3
<i>Carex lurida</i>	Sallow Sedge	G5	N5		S4S5	R1	R2	L3
<i>Carex plantaginea</i>	Plantain-leaved Sedge	G5	N5		S5		U	L3
<i>Caulophyllum thalictroides</i>	Blue Cohosh	G5	N5		S5	R	R	L3
<i>Chelone glabra</i>	White Turtlehead	G5	N5		S5	U	U	L3
<i>Chrysosplenium americanum</i>	American Golden-saxifrage	G5	N5		S4	R	R6	L3
<i>Dichanthelium implicatum</i>	Slender-stemmed Panicgrass	G5	N5		S5	R	R3	L4
<i>Elymus riparius</i>	Eastern Riverbank Wildrye	G5	N4		S4	R	R5	L4
<i>Elymus villosus</i>	Hairy Wildrye	G5	N4		S4	R	R3	L2
<i>Epilobium coloratum</i>	Purple-veined Willowherb	G5	N5		S5	R	R6	L5
<i>Equisetum fluviatile</i>	Water Horsetail	G5	N5		S5			L3
<i>Equisetum pratense</i>	Meadow Horsetail	G5	N5		S5	R	R8	L3
<i>Euonymus obovatus</i>	Running Strawberry Bush	G5	N5		S4			L3
<i>Floerkea proserpinacoides</i>	False Mermaid	G5	N4	NAR	S4	R	R1	L2
<i>Geranium maculatum</i>	Spotted Geranium	G5	N5		S5	U	R2	L4
<i>Glyceria septentrionalis</i>	Eastern Mannagrass	G5	NNR		S4	R	U	L3
<i>Hackelia virginiana</i>	Virginia Stickseed	G5	N5		S5	U	R8	L5
<i>Heracleum maximum</i>	Cow-parsnip	G5	N5		S5	R	R9	L5



Scientific Name	Common Name	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA
<i>Hydrophyllum canadense</i>	Bluntleaf Waterleaf	G5	N4		S4	R	R5	L3
<i>Ilex verticillata</i>	Black Holly	G5	N5		S5			L3
<i>Iris versicolor</i>	Harlequin Blue Flag	G5	N5		S5			L3
<i>Juglans cinerea</i>	Butternut	G4	N3N4	END	S2?			L3
<i>Juglans nigra</i>	Black Walnut	G5	N4		S4?		R	L5
<i>Leersia virginica</i>	Virginia Cutgrass	G5	N4N5		S4	R	R4	L4
<i>Lobelia siphilitica</i>	Great Blue Lobelia	G5	NNR		S5	U	U	L3
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	G5	N5		S5			L3
<i>Lonicera villosa</i>	Mountain Fly Honeysuckle	G5	N5		S5	R	R1	
<i>Menispermum canadense</i>	Canada Moonseed	G5	N4N5		S4	U	R5	L3
<i>Muhlenbergia frondosa</i>	Wirestem Muhly	G5	NNR		S4	R	R2	L4
<i>Nuphar variegata</i>	Variegated Pond-lily	G5T5	N5		S5	U	U	L3
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	G5	N4N5		S4?	R	R1	L5
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	G5	N5		S5	R	R3	L4
<i>Physalis heterophylla</i>	Clammy Ground-cherry	G5	N4		S4	R	R7	L5
<i>Physalis virginiana</i>	Virginia Ground-cherry	G5	NNR		SU	R		LU
<i>Phytolacca americana</i>	Common Pokeweed	G5	N4		S4	R	R1	
<i>Pilea fontana</i>	Springs Clearweed	G5	N4		S4	R	U	L4
<i>Pontederia cordata</i>	Pickrel Weed	G5	N5		S5	R	R3	L2
<i>Potamogeton foliosus</i>	Leafy Pondweed	G5	N5		S5	R	U	L4
<i>Potamogeton natans</i>	Floating Pondweed	G5	N5		S5	U	U	L3
<i>Quercus alba</i>	White Oak	G5	N5		S5		R6	L3
<i>Ribes triste</i>	Swamp Red Currant	G5	N5		S5	U	U	L3



Scientific Name	Common Name	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA
<i>Rudbeckia laciniata</i>	Cut-leaved Coneflower	G5	N5		S5	U	R4	L4
<i>Rumex britannica</i>	Water Dock	G5	N5		S5	U		L3
<i>Solidago juncea</i>	Early Goldenrod	G5	N5		S5	U	R6	L4
<i>Solidago patula</i>	Round-leaved Goldenrod	G5	N5		S4	R	R5	L3
<i>Sparganium eurycarpum</i>	Broad-fruited Burreed	G5	N5		S5	U	U	L3
<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>	Old Field Aster	G5T5	N5		S5	R	R3	L2
<i>Taxus canadensis</i>	Canadian Yew	G5	N5		S4			L3
<i>Toxicodendron radicans</i> var. <i>rydbergii</i>	Western Poison Ivy	G5	N5		S5		R6	L5
<i>Triosteum aurantiacum</i>	Orange-fruited Horse-gentian	G5	N5		S4S5	R	R9	L3
<i>Ulmus rubra</i>	Slippery Elm	G5	N5		S5		U	L3
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum	G5	N5		S5			L3
<i>Viburnum opulus</i> ssp. <i>trilobum</i>	Highbush Cranberry	GNR	NNR		S5			L3
<i>Zizia aurea</i>	Golden Alexanders	G5	N5		S5	R	R1	L3

#### 4.5. Wildlife

As shown in **Table 12**, 103 wildlife species were noted during field surveys in 2020. Bird species were much more diverse than any other group.



**Table 12. Total fauna species per type**

Fauna Type	Total Species
Bird	75
Amphibian	7
Reptile	4
Mammal	12
Butterflies	4
Damselfly	1
<b>Total</b>	<b>103</b>

#### 4.5.1. Amphibians

Seven amphibian species were identified during field surveys, six of which were observed during Nocturnal Animal Calling Surveys (NACS) (**Table 13**). An additional species, the Eastern Red-Backed Salamander (*Plethodon cinereus*), was observed under debris during an ELC survey.

Most surveys of calling amphibians recorded only a few individuals at each station. The only species for which full choruses were heard was Green Frog (*Rana clamitans*), which was heard at full chorus at five locations. This species is highly adaptable. It can breed in ponds with either permanent or temporary standing water, and was often noted in human-made ponds. No amphibians were observed at 18 (49%) of the 37 NACS station sites. Stations that had no observed amphibians during the first visit, no standing water, or lack of appropriate habitat, were not included in the second round of visits.

**Table 13. Breeding Amphibians identified during NACS.**

Common Name	Scientific Name	G Rank	SARA	COSEWIC	ESA	S Rank	Area Sensitivity	TRCA
American Toad	<i>Anaxyrus americanus</i>	G5	---	---	---	S5	---	L4
American Bullfrog	<i>Lithobates catesbeianus</i>	G5	---	---	---	S4	AS	L2
Green Frog	<i>Lithobates clamitans</i>	G5	---	---	---	S5	---	L4
Northern Leopard Frog	<i>Lithobates pipiens</i>	G5	---	NAR	NAR	S5	---	L3
Wood Frog	<i>Lithobates sylvaticus</i>	G5	---	---	---	S5	---	L2
Spring Peeper	<i>Pseudacris crucifer</i>	G5	---	---	---	S5	---	L2
Gray Treefrog	<i>Hyla versicolor</i>	G5				S5		L2

Potential amphibian breeding habitat was occasionally noted during vegetation or bird surveys, particularly in woodlands, that was not surveyed in amphibian surveys. Gray Treefrog was noted at



two stations, but it was not mapped as it was heard at a distance and so the location of the breeding habitat was not certain. Amphibian breeding habitat was concentrated in the northern and eastern parts of Markham, with additional concentrations on Toogood Pond and Milne Park (**Figure 5**).

### 4.5.2. Reptiles

Four reptile species were identified during field surveys, 3 of which, the Midland Painted Turtle (*Chrysemys picta marginata*), Pond Slider (*Trachemys scripta*), and Snapping Turtle (*Chelydra serpentina*), were observed during reptile surveys. Additionally, an Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) was observed during an ELC survey (**Table 14**). TRCA has also recorded Dekay's Brownsnake, in 2003 and 2010, and Northern Red-bellied Snake, several times between 2003 and 2013. Turtles were observed basking in Toogood Pond and Milne Park in spring, and were likely overwintering there.

Evidence of nesting turtles and eggs, both intact and predated, was also observed and recorded.

**Table 14. Reptile species identified during field surveys.**

Common Name	Scientific Name	G Rank	SARA	COSEWIC	ESA	S Rank	Area Sensitivity	TRCA
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>	G5T5	---	---	---	S5	---	L4
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	G5T5	---	SC	---	S4	---	L3
Pond Slider	<i>Trachemys scripta</i>	G5	---	---	---	SNA	---	L+
Snapping Turtle	<i>Chelydra serpentina</i>	G5	SC	SC	SC	S3	---	L3

### 4.5.3. Birds

A total of 77 bird species were observed during all surveys, including Breeding Bird Surveys, vegetation surveys, and incidentals. Of the 77 species, there was evidence of breeding for 75: plus one migrant (Blackpoll Warbler) and one flyover (Ring-billed Gull).

#### 4.5.3.1. Breeding Bird Surveys

Seventy-five species of birds from 1221 identified individuals were observed during Breeding Bird Surveys (point counts and area searches). Of the 75 species observed, 13 species were confirmed (C) breeding and 32 species were probable (PR) breeding (**Appendix 4**). Others were considered possible breeding species.



#### 4.5.3.2. Species at Risk Birds

Six Species at Risk (SAR) birds were observed during all surveys (**Table 15**). Three species are dependent on forest habitat (Canada Warbler, Eastern Wood-pewee and Wood Thrush), and two are dependent on open successional habitat (Barn Swallow, which is also dependent largely on farm buildings for nest sites, and Eastern Meadowlark). Common Nighthawk was observed displaying in late April, and so was exhibiting territorial behaviour, but this species begins nesting in mid-May and so may not have nested. The Canada Warbler could have been a late migrant, as this species is sometimes noted as transient in June, but it was in suitable breeding habitat at a suitable time of year so was recorded as a possible breeding species. Wood Thrush and Eastern Wood-pewee exhibited territorial behaviour and so were considered probable breeding species. Eastern Meadowlark was observed only at one location in Markham.

**Table 15. Species at Risk Bird Species**

Common Name	Scientific Name	Resident/Migrant	G RANK	SARA Status	COSEWIC	ESA Status	S Rank	Area Sensitivity	TRCA
Canada Warbler	<i>Cardellina canadensis</i>	Resident	G5	THR	THR	SC	S4B	AS	L2
Common Nighthawk	<i>Chordeiles minor</i>	Resident	G5	THR	SC	SC	S4B	---	L3
Eastern Wood-Pewee	<i>Contopus virens</i>	Resident	G5	SC	SC	SC	S4B	---	L4
Barn Swallow	<i>Hirundo rustica</i>	Resident	G5	THR	THR	THR	S4B	---	L4
Wood Thrush	<i>Hylocichla mustelina</i>	Resident	G5	THR	THR	SC	S4B	---	L3
Eastern Meadowlark	<i>Sturnella magna</i>	Resident	G5	THR	THR	THR	S4B	AS	L3

#### 4.5.4. Mammals

Twelve species of mammals were identified during field surveys. Targeted surveys for mammals were not completed, but signs and sightings were recorded whenever they were encountered.

There were no species at risk, rare (S1-S3), or area sensitive species observed. One species, Hairy-tailed Mole (*Parascalops breweri*), is listed as locally rare (L3) within the TRCA watershed (**Appendix 4**).

#### 4.5.5. Odonates and Lepidopterans

Targeted surveys for dragonflies, damselflies, butterflies and moths were not conducted. However, five species were noted in incidental surveys. These included four butterflies: Black Swallowtail (*Papilio polyxenes*), Cabbage White (*Pieris rapae*), Eastern Comma (*Polygonia comma*), Monarch (*Danaus plexippus*) and one damselfly: Ebony Jewelwing (*Calopteryx maculata*). None is considered



rare in Ontario except Monarch, a species listed as Special Concern in Ontario. This species was noted nectaring on a variety of flowers in open areas of Markham, especially along the Rouge River.

#### 4.5.6. Significant Wildlife

Thirty-six significant wildlife species were recorded during field surveys, including the following categories (some of which overlap): six bird Species at Risk (SAR), two turtle SAR species, 16 area-sensitive species (15 birds as well as American Bullfrog) and 23 TRCA L1-3 locally rare species, of which five were frogs, two were turtles, one was a mammal and 15 were birds. One insect SAR was also noted (Monarch). Significant species for which locations were readily available, i.e. those recorded in 2020 surveys as well as 2014 SWS surveys by the study team, are listed in **Table 16**, and distribution of significant wildlife in all areas where information was available throughout the Greenway System, is shown on **Figure 6**. Significant species were generally concentrated in the northern and eastern parts of the study area, but with significant concentrations at Milne Park and other discrete locations as well, especially German Mills Creek. Morningside Creek, a tributary of the Rouge River near Eastvale and Steeles Avenue, was a particular concentration area for significant bird species; an unusual finding in such a highly urban surrounding. There may be other areas of hotspots for which information on location was not available, so they could not be mapped in this study.

**Table 16. Significant wildlife in Markham's Greenway System: Species at Risk (SAR), Area Sensitive species, and species of concern in the TRCA watershed (L1-3).**




Type	Common Name	Scientific Name	G Rank	SARA Status	COSEWIC	ESA	S Rank	Area Sensitivity	TRCA
Bird	Cooper's Hawk	<i>Accipiter cooperii</i>	G5	---	NAR	NAR	S4	AS	L4
Bird	Great Blue Heron	<i>Ardea herodias</i>	G5	---	---	---	S4	---	L3
Bird	Canada Warbler	<i>Cardellina canadensis</i>	G5	THR	THR	SC	S4B	AS	L2
Bird	Common Nighthawk	<i>Chordeiles minor</i>	G5	THR	SC	---	S4B	---	L3
Bird	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	G5	---	---	---	S4B	---	L3
Bird	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	G5	---	---	---	S5B	---	L3
Bird	Eastern Wood-Pewee	<i>Contopus virens</i>	G5	SC	SC	SC	S4B	---	L4
Bird	Hairy Woodpecker	<i>Dryobates villosus</i>	G5	---	---	---	S5	AS	L4
Bird	Pileated Woodpecker	<i>Dryocopus pileatus</i>	G5	---	---	---	S5	AS	L3
Bird	Alder Flycatcher	<i>Empidonax alnorum</i>	G5	---	---	---	S5B	AS	L4
Bird	Least Flycatcher	<i>Empidonax minimus</i>	G5	---	---	---	S4B	AS	L4
Bird	Mourning Warbler	<i>Geothlypis philadelphia</i>	G5	---	---	---	S4B	---	L3






Type	Common Name	Scientific Name	G Rank	SARA Status	COSEWIC	ESA	S Rank	Area Sensitivity	TRCA
Bird	Barn Swallow	<i>Hirundo rustica</i>	G5	THR	THR	THR	S4B	---	L4
Bird	Wood Thrush	<i>Hylocichla mustelina</i>	G5	THR	THR	SC	S4B	---	L3
Bird	Wild Turkey	<i>Meleagris gallopavo</i>	G5	---	---	---	S5	---	L3
Bird	Savannah Sparrow	<i>Passerculus sandwichensis</i>	G5	---	---	---	S4B	AS	L4
Bird	Scarlet Tanager	<i>Piranga olivacea</i>	G5	---	---	---	S4B	AS	L3
Bird	Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	G5	---	---	---	S4B	AS	L4
Bird	Virginia Rail	<i>Rallus limicola</i>	G5	---	---	---	S5B	---	L3
Bird	Magnolia Warbler	<i>Setophaga magnolia</i>	G5	---	---	---	S5B	AS	L3
Bird	Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	G5	---	---	---	S5B	---	L3
Bird	Pine Warbler	<i>Setophaga pinus</i>	G5	---	---	---	S5B	AS	L4
Bird	American Redstart	<i>Setophaga ruticilla</i>	G5	---	---	---	S5B	AS	L4
Bird	Red-breasted Nuthatch	<i>Sitta canadensis</i>	G5	---	---	---	S5	AS	L4
Bird	White-breasted Nuthatch	<i>Sitta carolinensis</i>	G5	---	---	---	S5	AS	L4
Bird	Clay-colored Sparrow	<i>Spizella pallida</i>	G5	---	---	---	S4B	---	L3
Bird	Eastern Meadowlark	<i>Sturnella magna</i>	G5	THR	THR	THR	S4B	AS	L3
Bird	Brown Thrasher	<i>Toxostoma rufum</i>	G5	---	---	---	S4B	---	L3
Amphibian	American Bullfrog	<i>Lithobates catesbeianus</i>	G5	---	---	---	S4	AS	L2
Amphibian	Northern Leopard Frog	<i>Lithobates pipiens</i>	G5	---	NAR	NAR	S5	---	L3
Amphibian	Wood Frog	<i>Lithobates sylvaticus</i>	G5	---	---	---	S5	---	L2
Amphibian	Spring Peeper	<i>Pseudacris crucifer</i>	G5	---	---	---	S5	---	L2
Amphibian	Gray Treefrog	<i>Hyla versicolor</i>	G5	---	---	---	S5	---	L2
Reptile	Snapping Turtle	<i>Chelydra serpentina</i>	G5	SC	SC	SC	S4	---	L3
Reptile	Midland Painted Turtle	<i>Chrysemy picta marginata</i>	G5T5	---	SC	---	S4	---	L3
Mammal	Hairy-tailed Mole	<i>Parascalops breweri</i>	G5	---	---	---	S4	---	L3
Insect	Monarch	<i>Danaus plexippus</i>	G4	SC	END	SC	S2N, S4B		





**Legend**

-  Markham Boundary
-  Markham Greenway System (2014)
-  Watercourses



**Amphibians : Significant Rankings**

-  S3, L2
-  L2
-  L3


**Reptiles: Significant Rankings**

-  S3, L3
-  L3


**Birds: Significant Rankings**

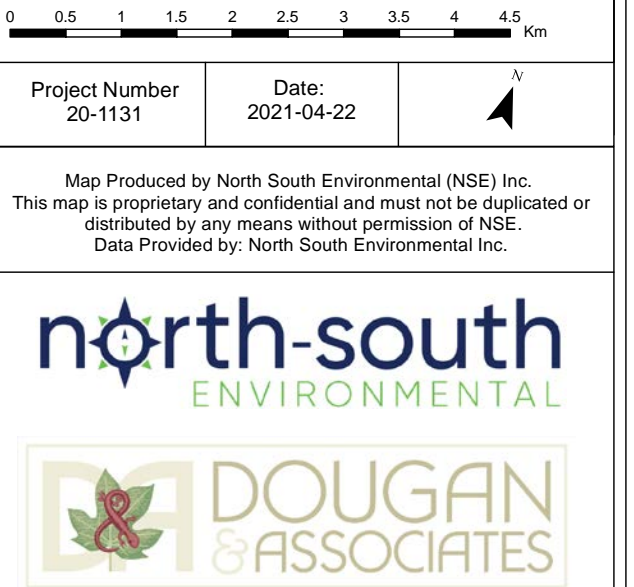
-  L3
-  L2

**Mammals: Significant Rankings**

-  L3

**Butterflies: Significant Rankings**

-  S2





## 5. Condition

### 5.1. Overall health, Condition and Ecological Integrity

In general, condition was perceived by the study team as higher than was expected of urban habitats in the Greater Toronto Area. There were many communities that were largely dominated by native species. Upland forest communities were most frequently dominated by Sugar Maple, unlike, for example, in the City of Toronto, where forests, especially in ravines, are frequently dominated by invasive non-natives such as Norway Maple. Trails (both formal marked trails and informal trails created by users) were frequent in Markham and impacts such as trampling were frequently observed near trails.

The following sections summarize disturbances that were observed by the study team, **Figure 7** shows areas of abundant or dominant invasive species, and **Figure 8** shows areas of high levels of the most significant disturbances observed: tracks and trails, dumping and recreational use. Encroachment, also a significant impact adjacent to residential development (see Section 5.1.19), is not mapped as it was not always recorded, since it did not have a dedicated field in Survey 123 (i.e. it was an incidental observation).

#### 5.1.1. Tree Removal

Cut stumps and other signs of tree removal were recorded as “logging” in the data entry application as this is the term used by the ELC manual. However, tree removal primarily appeared to be related to removal of individual trees where they created a hazard. Tree cutting was recorded because it can have profound affects on a forest community by creating higher levels of light and allowing penetration of drying winds. There were 38 observations of recent logging (within 30 years), out of 440 communities where disturbance was recorded. **Table 17** summarizes the number of instances where logging within the past 30 years was observed. Logging intensity and extent were generally observed as being light and local. Most recent logging was associated with cutting of hazard trees along trails, especially ash trees that are affected by Emerald Ash Borer. As could be expected, most recent logging was observed in deciduous forest.

**Table 17. Number of instances of logging within the past 30 years noted in vegetation communities in Markham**

<b>Vegetation Ecosite</b>	<b>Number of Observations</b>
Cultural Meadow	5
Cultural Plantation	1
Cultural Thicket	4
Cultural Woodland	1
Coniferous Forest	3
Deciduous Forest	18
Mixed forest	3



Vegetation Ecosite	Number of Observations
Shallow Marsh	3

### 5.1.2. Maple Sugar Harvest

Signs of maple sugar harvest (e.g. taps on maple trees, tubing strung between trees, and presence of containers for collecting sap) would have been recorded if present because sugar harvesting can be a source of disturbance related to soil trampling and clearing of pathways. There were no observations of maple sugar harvest by the study team.

### 5.1.3. Canopy Gaps

Gaps in woodlands can be a sign of disease or extensive logging disturbance. As noted above, loss of canopy trees can allow increased light and penetration, which can be accompanied by increases in non-native invasive species and drying of soils. Large canopy gaps were observed in two forest communities: one in a lowland forest and one in a deciduous swamp. Intermediate canopy gaps were noted in 52 communities. Most observations of intermediate canopy gaps were recorded in lowland forest (FOD7), with 36 observations. Canopy gaps were likely a result of death of ash due to Emerald Ash Borer, but since ash trees were a relatively small component of Markham forests, and were in early stages of decline, there were few instances of large gaps recorded.

### 5.1.4. Livestock Use

Livestock are an important cause of disturbance to vegetation, as cattle browse and graze intensively, trample roots and compact soils. There was only one instance of historic livestock grazing observed, in a cultural woodland community, located south of Major Mackenzie Drive East and Ninth Line

### 5.1.5. Invasive Non-native Species

The abundance and pervasiveness of non-native invasive species were recorded because they can out-compete native species, depriving other species of light and nutrients, and invasion by non-native species can be accompanied by a decrease in diversity. Individual species were not recorded; the measure recorded the perceived frequency of the most invasive species. Though non-native species were a frequent component of vegetation communities investigated in Markham, they were perceived as dominant or abundant in a little over half (57%) of the 440 polygons where this type of disturbance was recorded. Observations of “abundant” or “dominant” invasive species were recorded in 52% of forest communities, 51% of swamp communities and 46% of marsh communities, as shown in **Table 18**. Areas of abundant and dominant invasive species are shown in **Figure 7**. Observations of “abundant” or “dominant” invasive species were recorded in 68% of cultural communities, as would be expected, as these communities are characteristically dominated by non-native species in southern Ontario. Non-native invasive species were particularly concentrated along portions of the Rouge



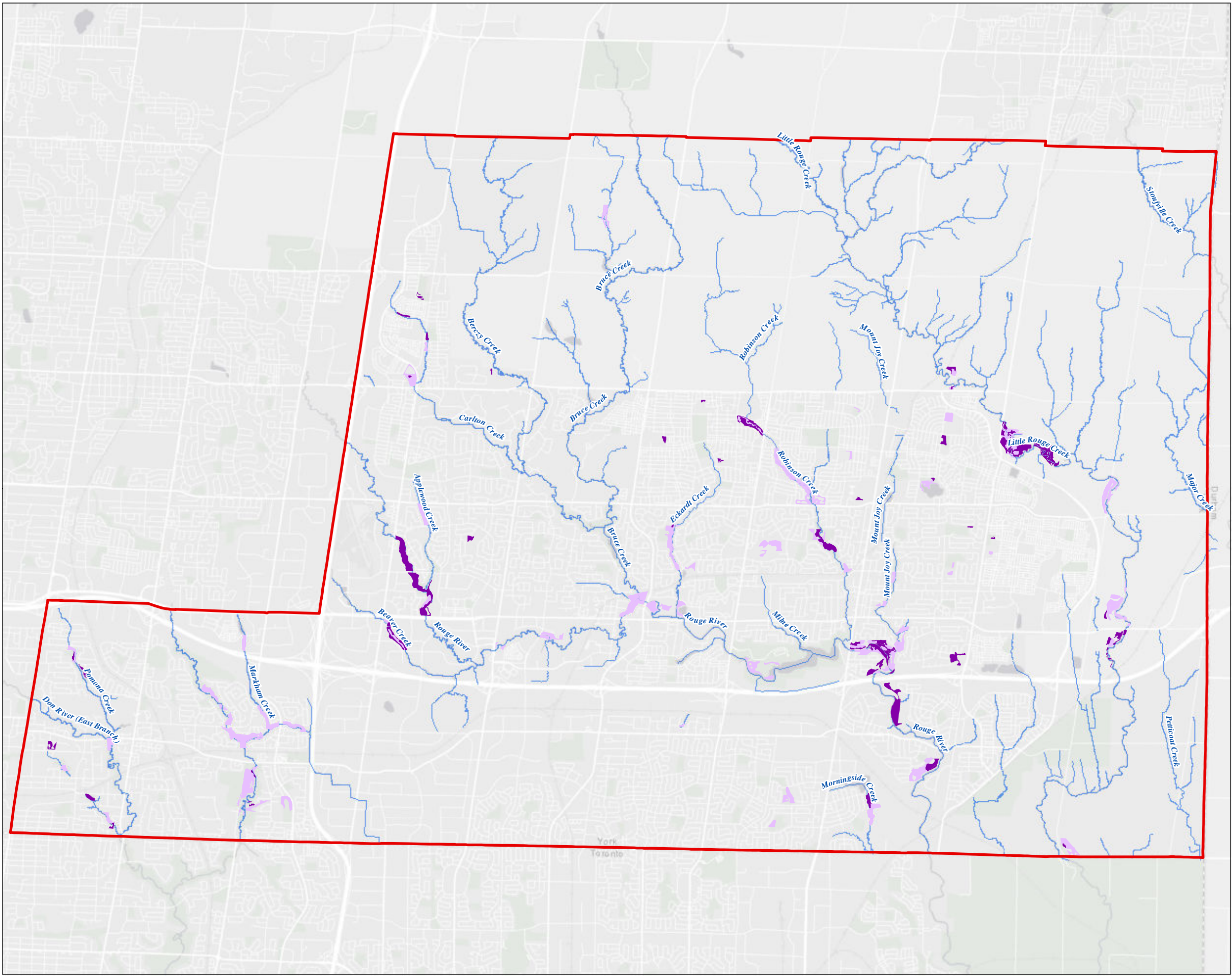
River, especially in high use areas, in the upper portion of the Little Rouge River, and along Berczy Creek.

**Table 18. Occurrences where abundant or dominant non-native invasive species were observed in Markham vegetation communities.**

<b>Vegetation Community</b>	<b>Total Number of Communities Investigated</b>	<b>Number of polygons where occasional or no invasive species were noted</b>	<b>Number of polygons where dominant or abundant invasive species were noted</b>
Deciduous Forest	140	62	78
Coniferous Forest	15	7	8
Mixed Forest	33	21	12
Swamp	39	19	20
Marsh	54	29	25
Cultural Communities	147	47	100

The most commonly recorded invasive species were Hybrid Willow, Common Buckthorn, Dog-strangling Vine and Garlic-mustard. Other commonly recorded species were Burning Bush (*Euonymus* spp.) and White Poplar (*Populus alba*). Surprisingly, other non-native invasive species that are extremely prevalent in other parts of the GTA such as Norway Maple, Black Alder and Glossy Buckthorn were infrequent in Markham.





**Figure 7 | Markham Natural Features Inventory:**  
Invasive Species Distribution Observed During 2020 ELC Investigations

- Legend**
- Markham Boundary
  - Watercourses
  - Invasive Species**
    - Abundant
    - Dominant

00.511.522.533.544.5Km

Project Number  
20-1131

Date:  
2021-04-22

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





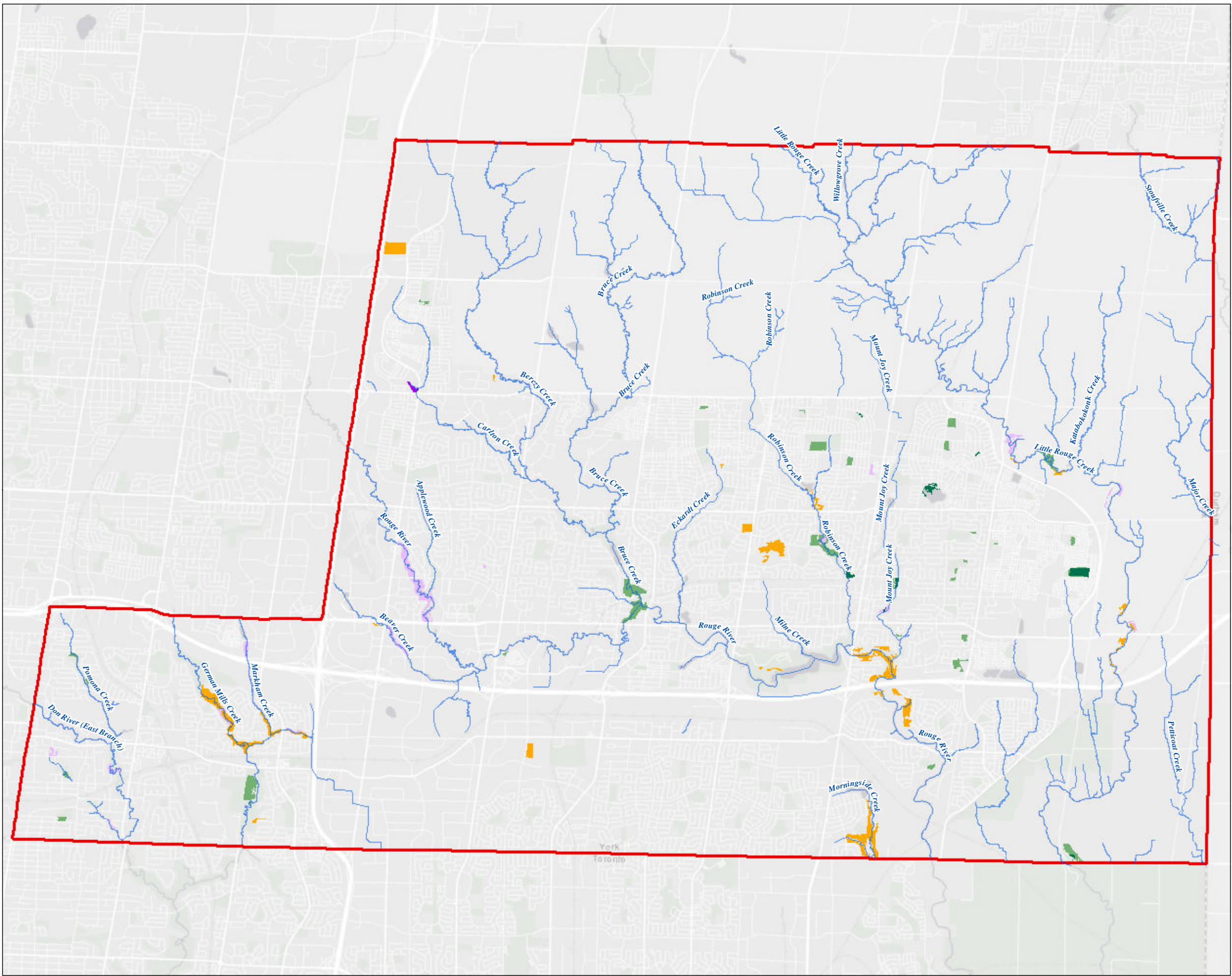
### 5.1.6. Planting

Planting was recorded as it is generally accompanied by large-scale disturbance, or can be an indication of previous cultural origins for a community. Planting was reported as abundant to dominant in 26 polygons, all but 3 of which were cultural communities.

### 5.1.7. Tracks and Trails

Tracks and trails were recorded as they generally indicated the intensity of recreational use in an area. Formal trails were not differentiated from informal trails as a well-marked trail was usually accompanied by the same level of disturbance, whether it was a wide formal or informal trail. Tracks and trails were reported as well-marked, or tracks or roads, in 96 polygons, of which 48 polygons had extensive and widespread trails. Trails were reported as local and faint in 90 polygons. No trails were reported in 222 polygons. Areas where well-marked trails, or tracks or roads, were observed are shown in **Figure 8**.





**Figure 8 | Markham Natural Features Inventory:**  
Records of Moderate and High Levels of Disturbances Recorded during 2020 ELC Investigations

- Legend**
- Markham Boundary
  - Watercourses
  - Recreation**
    - Moderate
    - Heavy
  - Dumping**
    - Moderate
    - Heavy
  - Tracks and Trails**
    - Well Marked
    - Tracks or Roads

00.511.52.533.544.5Km

Project Number20-1131

Date:2021-04-22

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





### 5.1.8. Dumping

Dumping is an indicator of disturbance as it is associated with compaction of soils and potential for introduction of non-native species. It was indicated by piles of dead leaves, building debris, litter and compost piles. Dumping was recorded as heavy or moderate in 39 polygons, and light in 274. There were 127 polygons where no dumping was recorded. Areas where heavy or moderate dumping was recorded are shown in **Figure 8**.

### 5.1.9. Earth Displacement

Earth displacement was recorded if signs of site alteration were noted such as excavation or piles of soil. These are important indicators of disturbance as site alteration can compact soils, promoting the spread of non-native species. Very few instances of earth displacement were recorded. Moderate earth displacement was recorded in 9 polygons, with no instances of heavy displacement recorded. Light displacement was recorded in 8 polygons.

### 5.1.10. Recreational Use

Recreational use was generally recorded separately from tracks and trails. Signs of recreational use are an indicator of disturbance because they indicate areas of soil disturbance that can trample vegetation and promote the spread of non-native species and are areas where there is potential for disruption of breeding in wildlife species as well. Recreational use documented party spots, trampling, vegetation removal, BMX bike jumps and other signs of human presence. Heavy or moderate recreational use was recorded in 63 polygons, while light recreational use was reported in 23 polygons. No recreational use was reported in 188 polygons. Areas where moderate to heavy recreational use was noted are shown in **Figure 8**.

### 5.1.11. Noise

Noise is a significant disturbance as it can alter the ability of wildlife species to broadcast calls, important for advertising territory and fitness for reproduction. Bird nesting density has been shown to be reduced adjacent to major highways, and frogs may alter their calls in areas with high noise levels. Intense noise levels were generally only reported in polygons in close proximity to roads (particularly Highway 407). These totaled 109 polygons. Slight or no noise was recorded in 377 polygons.

### 5.1.12. Disease

Disease (which included pests) is an important factor in determining vegetation communities, particularly forests, because there are several diseases that cause widespread tree death in southern Ontario forests, increasing the potential for drying winds and increased light levels, and promoting the growth of non-native invasive species. Diseases reported incidentally during Markham surveys included Emerald Ash Borer (the most prevalent disease), Beech Bark Disease (which is caused by a



combination of an introduced beech scale insect (*Cryptococcus fagisuga*) from Europe, coupled with a nectria fungus), and Dutch Elm Disease (*Ophiostoma ulmi* and *Ophiostoma novo-ulmi*).

Disease was recorded as heavy or moderate in 49 polygons, with light or none in 391.

### 5.1.13. Windthrow

Windthrow is used to describe areas where trees have been blown down, usually in a discrete patch, by strong winds. Windthrow can be an indicator of a variety of often interacting disturbances such as tree death or morbidity and changes in soil conditions so they are less stable. Moderate windthrow was noted in 31 polygons. Light or no windthrow was noted in 409. Windthrow was not noted as heavy in any polygons in Markham.

### 5.1.14. Browse

Deer browse (by White-tailed Deer; *Odocoileus virginianus*) has been highlighted as an indicator of disturbance as the presence of large numbers of deer can be associated with soil trampling and suppression of vulnerable plant species, which in turn provide opportunities for non-native, invasive plant species. In areas with unusually large numbers of deer, especially in winter, a “browse line” can become visible as deer remove the lower levels of trees and shrubs which are within their reach. Visible browsing was noted in 30 polygons. Of these, it was noted as moderate only in two, with light browsing in the remainder. Heavy browsing was not noted.

### 5.1.15. Beaver Activity

Beavers are a source of change in habitat and increase in diversity, damming up streams which then flood, and causing areas of forest to succeed to swamp. Beavers tend to abandon flooded areas after a few years as the watercourses accumulate silt and these areas then return back to forest. This type of disturbance is often reduced in urban environments because it can lead to property damage. Beaver (*Castor canadensis*) activity was noted in a total of 18 polygons (all adjacent to watercourses), but was only moderate in two of those. No heavy beaver activity was recorded.

### 5.1.16. Flooding

Flooding is largely a natural disturbance, that can maintain wetlands in areas where, for example, it is of long enough duration, sufficient depth and occurs in certain seasons. Flooding duration and depth can change due to upstream human influences. Heavy or moderate flooding was recorded in 36 polygons, most of which were wetlands adjacent to watercourses, as would be expected. Flooding was reported in five forest and cultural communities.

### 5.1.17. Fire

Fire was previously a natural disturbance (or an indigenous-created one) that maintained open habitat that promoted habitat for certain shade-intolerant tree species such as oak, created forest openings and removed woody debris. However, impacts of fires are much reduced in southern Ontario as they



tend to cause damage to human property. Fire impacts were reported as “light” in one forest polygon in Markham, but no other evidence of fire was recorded.

### 5.1.18. Ice Damage

Ice damage is a natural disturbance that can maintain unvegetated areas on shorelines and allow colonization by certain rare ephemeral species that germinate in the fall only in these conditions. Ice damage was reported in one polygon (an open beach, which was likely kept unvegetated by ice scour as well as erosion by water).

### 5.1.19. Other Disturbances

Other disturbances were recorded during the course of surveys if they were noted by the investigator and did not fall under the fields dedicated to the disturbances described above. **Table 19** summarizes the other disturbances noted in Markham, with the number of times they were recorded. The most common disturbance recorded was encroachment on the natural area from the adjacent residences, which varied from planting of horticultural species, cutting shrubs and other vegetation, dumping (particularly compost piles but also including building debris) and mowing.

**Table 19. Additional disturbances noted during investigations in Markham, and the number of polygons in which they were observed.**

Type of Disturbance	Number of Polygons Noted
Encroachment (mowing, planting, cutting, dumping adjacent to residences)	135
Party Spots (encampments, structures, bike jumps, fire pits)	12
Hazard Tree Cutting (generally ash infected by Emerald Ash Borer)	12

## 6. Trends in Ecological Health and Condition (Comparison with 1991 Inventory results)

Health and condition were reported very generally in the 1992 report, so comparison of specific types of impact are difficult to make. The extent of natural vegetation and cultural vegetation was described in detail, and this is compared in Section 5.2.2.1. However, there are general comments in the 1992 report regarding vegetation that can be used to compare the composition in 1991 to the composition of vegetation in the present.



Comparison of vegetation with 1991 observations is complicated by the fact that in 1991, the classification of vegetation was not yet standardized. It was based on the observer describing vegetation as they saw it (Bakowsky 2021, pers. comm.). Generally, the principles were similar: the observer named the vegetation type by the dominant species, in decreasing order of dominance. This would apply to both open and treed vegetation. For example, sometimes for a treed vegetation type, the observer might break it down into layers (e.g. red maple - balsam poplar/spicebush/sensitive fern vegetation type); but sometimes the community was described by naming only the trees (Bakowsky 2021, pers. comm.). Standard vegetation protocols were introduced in 1998 (Lee et al. 1998). The classification of some communities may not always be comparable, particularly swamps and forests. The "Lowland Forest" category in the 1998 manual is often used to classify floodplain communities that are indeterminant between swamp and forest, so that this classification may have replaced some areas mapped as swamp in 1991.

## 6.1. Wetland Description

Palustrine vegetation (the broad term used to describe wetlands) noted the following (Page 4-1, Gore and Storrie 1992):

*"Fairly extensive marshes cattail marshes occur at Toogood Pond and Milne Park, while elsewhere they are of smaller size and local on the table lands and valley bottoms. Sites with less water, but with wet or saturated soils, typically support marsh dominated by grasses and herbs. [Wasył Bakowsky (2021, pers. comm.), who conducted the surveys of vegetation in Markham in 1991, notes that the grass was almost always the non-native species of Reed Canary-grass]. This is the most common marsh type in Markham, occupying extensive areas along riverbanks, floodplains and terraces, and the natural tributary drains of agricultural lands." ... "Deciduous swamps occur in areas with high water tables and springtime surface ponding. Characteristic species include Crack Willow [now considered a hybrid of Crack Willow with a variety of other non-native willow tree species], Manitoba Maple, white elm, and Silver Maple [now considered likely a hybrid between Silver Maple and Red Maple: known as Freeman's Maple]. Similar topographic situations may be dominated by coniferous species, primarily White Cedar, or mixtures of this species and deciduous species."*

The prevalence of meadow marsh (marsh dominated by grasses and herbs) still applies to the current natural vegetation composition. Cattail marsh still occupies small areas, with larger areas at Toogood Pond and Milne Park. Grasses and herbs still dominate saturated soils along river edges, mainly the non-native species Reed Canary-grass in 2020.

Swamps are largely dominated by the same species described in the 1992 report. The exception to this is that the 2020 study team found very few communities dominated by the hybrid Freeman's Maple (formerly identified as Silver Maple). As noted above, in recent surveys, Silver Maple was noted as a dominant in only one polygon. In addition, there is no mention of Black Walnut, found in 2020 as a common associate of these species on floodplains. The prevalence of Black Walnut appears to have increased in most vegetation communities throughout Markham.



## 6.2. Terrestrial Vegetation

Terrestrial vegetation described in 1991 included cultural vegetation, which was described as occurring on naturally regenerating old fields which develop on abandoned agricultural land and pastures. Old fields were dominated by grasses and herbs, with a high percentage of non-native species, and this is still the case. Cultural plantations were described as dominated by conifers such as White Pine, Red Pine (*Pinus resinosa*) and Scots Pine, with occasional deciduous species such as Black Locust (*Robinia pseudoacacia*), whereas in the 2020 field work the most common species observed were White Spruce, White Pine, Scots Pine and Norway Spruce. There were few areas of extensive invasive non-native species noted in 1991. Bakowsky (2021, pers. comm.) remembers seeing only one patch of very young Common Buckthorn seedlings in a disturbed area along a creek. Few areas of European Reed or Dog-strangling Vine were present in 1991. He noted that the most common invasives were species of cultural meadow such as Yellow Bedstraw (*Galium verum*).

Cultural vegetation was considered distinct from successional vegetation, which was used to classify species on eroding slopes, gravel and sand bars and regularly flooded banks. These communities would likely be classified as thicket swamp (SWT) in the current ELC protocols. Only two of these communities were noted of this type in Markham in 2020. Vegetation previously classified as successional on floodplains has likely now succeeded to lowland forest dominated by Black Walnut, Manitoba Maple and Hybrid Willow, with abundant Common Buckthorn.

It was noted in 1992 that *"successional deciduous forests are widespread in Markham and are dominated by shade-intolerant species such as aspen, ash, White Elm and Manitoba Maple. In some instances, particularly along stream slopes, successional coniferous forests dominated by White Cedar are found"*. Though Manitoba Maple is still common in successional forests, there were few areas dominated by ash or aspen. Again, there is no mention of Black Walnut in 1991, which was ubiquitous in successional forests in 2020. Bakowsky (2021 pers. comm.) stated that Black Walnut was certainly present in 1991, and was noted as fairly widespread, but was not dominant in any areas. White Elm has become in 2020 a minor element of successional forests, and elms are generally small trees eventually killed off by successive waves of Dutch Elm Disease.

The description of mature deciduous forests in Gore and Storrie (1992) read: *"Mature forests are dominated by mature trees, and generally support an understory of forest species, with few introduced species present...Mature deciduous forests are dominated by shade-tolerant sugar maple and beech, and typically contain a number of spring ephemeral species."* Bakowsky (2021, pers comm.) particularly remembers the native Pubescent Sedge (*Carex hirtifolia*) as abundant in almost all upland forests, ascribing this to the moisture-retentive clay-loam soils. In 2020 surveys, Sugar Maple was observed as the principal dominant in the canopy, sub-canopy and sometimes the shrub and ground layers as well. American Beech, Black Cherry were common components. Black Walnut was frequently a component of deciduous forest. However, in most areas except the high-quality forest along the Little Rouge River at the eastern edge of the study area, the shrub layer was frequently dominated by Common Buckthorn. Spring ephemerals were patchy and infrequent, and the ground was often



dominated by non-native invasives such as Garlic-mustard, Dog-strangling Vine, and weedy native species such as Enchanter's Nightshade. Pubescent Sedge was noted occasionally (particularly in the eastern part of the study area along the Little Rouge River) but was never observed as a dominant or abundant species.

The description of mature coniferous forests noted: *"Mature coniferous forests may be variously dominated by white pine, eastern hemlock and white cedar. The understory vegetation is generally sparse in this community type, and often contains species of more northern floristic affinity. Coniferous forests may be found on north and east-facing slopes. Mature forests of both coniferous and deciduous species are also present in Markham. Other deciduous trees present in this type (in addition to sugar maple and beech) include white birch, yellow birch, black cherry and basswood."* In 2020 surveys, the vegetation in mature coniferous forests was very similar, with some of the highest-quality examples along the Little Rouge River at the eastern edge of the study area. The understory remained sparse. Fewer non-native species were noted in these areas than in other parts of the study area. White Birch (*Betula papyrifera*) was noted only rarely (possibly because it is a short-lived species and may have died out since the surveys in 1992), but Yellow Birch (*Betula alleghaniensis*) was noted occasionally in 2020, and Basswood and Black Cherry were relatively common.

### 6.3. Comparison of Vegetation Areas

**Table 20** provides a comparison of the areas of different vegetation types recorded in 1991 and 2020. The area of "natural" vegetation (roughly, vegetation that is not anthropogenic or agricultural land) within Markham has increased slightly since 1991, from 13.7% to 14.9%. The area of open water measured in 2020 is much larger than the open water area measured in 1991, probably mainly because watercourses were mapped as lines in the past, rather than polygons (Bakowsky 2021, pers. comm.) The area of shallow marsh has increased. It is also possible that the area of open water in watercourses has increased, because of increased runoff from urban areas. The reason for this is not clear, but it is possible that stormwater treatment facilities contribute to this total. The area of meadow marsh is similar in 1991 and 2020.

Areas of deciduous, coniferous and mixed swamp have decreased from 2020 to 1991. As noted above, this may be due to differences in classification between those years. However, it is also possible that floodplains have become drier due to climate change (more intense but less lengthy flooding events, higher temperatures), and increased growth of shrubs (mainly Common Buckthorn) and trees that create increased evapotranspiration of moisture from soils.



**Table 20. Comparison of 1991 and 2020 extent of vegetation types (based on all data sources)**

Vegetation Type	1998 Equivalent	Area (ha)		Percent of Vegetation		Percent of Markham	
		1991	2020	1991	2020	1991	2020
<b>PALUSTRINE</b>	<b>Wetland</b>	<b>833.87</b>	<b>793.01</b>	<b>28.76</b>	<b>25.07</b>	<b>3.93</b>	<b>3.73</b>
<b>Marsh</b>	<b>MA</b>	<b>360.54</b>	<b>554.41</b>	<b>12.43</b>	<b>17.53</b>	<b>1.70</b>	<b>2.61</b>
Open Water	OAO, SA (S, M, F))	40.86	178.34	1.41	2.52	0.19	0.84
Cattail	Shallow Marsh MAS	11.10	58.41	0.38	0.83	0.05	0.27
Grass-Herb	Meadow Marsh MAM	268.60	264.76	9.26	3.75	1.27	1.24
Shrub	Thicket Swamp SWT	39.98	52.91	1.38	0.75	0.19	0.29
<b>Swamp</b>	<b>SW</b>	<b>473.33</b>	<b>238.60</b>	<b>16.32</b>	<b>7.54</b>	<b>2.23</b>	<b>1.12</b>
Deciduous	Deciduous Swamp SWD	234.92	163.79	8.10	2.32	1.11	0.77
Coniferous	Coniferous Swamp SWC	74.91	18.82	2.58	0.27	0.35	0.09
Mixed Coniferous-Deciduous	Mixed Swamp SWM	163.50	56.00	5.64	0.79	0.77	0.26
<b>TERRESTRIAL</b>		<b>2065.62</b>	<b>2369.74</b>	<b>71.24</b>	<b>74.93</b>	<b>9.74</b>	<b>11.14</b>
<b>Anthropogenic</b>	<b>Cultural</b>	<b>1487.58</b>	<b>1166.17</b>	<b>51.30</b>	<b>36.87</b>	<b>7.02</b>	<b>5.48</b>
Old Field	Cultural Meadow CUM	1075.65	781.63	37.10	11.07	5.07	3.68
Shrub-rich Old Field	Cultural Thicket, Cultural Savannah CUT, CUS	299.95	226.78	10.34	3.21	1.41	1.07
Plantation	Cultural Plantation CUP	111.98	157.76	3.86	2.23	0.53	0.74
<b>Successional</b>		<b>242.29</b>	<b>279.31</b>	<b>8.36</b>	<b>8.83</b>	<b>1.14</b>	<b>1.31</b>
Gravel Bar	Open Beach BBO	0.98	1.29	0.03	0.018	0	0.006
Shrub Thicket	Shrub Beach BBS	7.58	0.66	0.26	0.0094	0.04	0.003
Successional Woodland	Cultural Woodland CUW	233.73	277.36	8.06	3.93	1.10	1.30
<b>Mature Forest</b>	<b>FO</b>	<b>335.75</b>	<b>924.26</b>	<b>11.58</b>	<b>29.22</b>	<b>1.58</b>	<b>4.35</b>
Deciduous	Deciduous Forest FOD	153.77	626.82	5.30	8.87	0.73	2.95
Coniferous	Coniferous Forest FOC	53.08	90.56	1.83	1.28	0.25	0.43



Vegetation Type	1998 Equivalent	Area (ha)		Percent of Vegetation		Percent of Markham	
		1991	2020	1991	2020	1991	2020
Mixed Coniferous-Deciduous	Mixed Forest FOM	128.90	206.89	4.45	2.93	0.61	0.97
<b>Total</b>		<b>2899.49</b>	<b>3162.76</b>	<b>100</b>	<b>100</b>	<b>13.70</b>	<b>14.87</b>

Areas of cultural meadow, cultural thicket/cultural savannah decreased from 1991 to 2020, while cultural woodland and cultural plantation increased, as might be expected as early-successional areas grown over by woody species. Mature forest increased, mainly due to a large increase in deciduous forest because of growth of woody species in previously open areas, but also due to classification of floodplain areas as lowland forest in 2020, rather than swamp as in 1991, when the category of lowland forest was not widely used.

## 6.4. Comparison of Biodiversity

### 6.4.1. Plant Biodiversity

A total of 506 plant species were listed in 1991. Slightly fewer (479) species were found in 2020, likely because the inventories were highly scoped to fewer sites. The number of native species in 1992 was 365 (72%), while the number of native species in 2020 was 350 (67%), a slight decline that may not be significant. Twenty-five species rare in York Region were found in 1992, while 43 were found in 2020 (though rare species in 1991 and 2020 were not all the same, as the status was revised in 2000, as well as several times subsequently).

The number of plant species found in 1991 was similar to the number found in 2020 (20 more species were found in 1991, likely because of the larger area searched). Numbers of natives and non-natives were similar and numbers of significant species of York Region were higher. Species listed as rare in York Region in 1991 were different from those found in 2020; partly because the distribution of some species has been re-evaluated since 1991 and additional species are now considered rare.

Areas of high biodiversity were mapped in the 1991 studies, as high biodiversity of plants and animals was one of the criteria for designation of Locally Significant Areas (LSAs). LSAs are discussed in Section 6.5. Areas of high biodiversity are mapped in **Figures 5A and 5B** according to numbers of species and according to concentrations of regionally and locally significant species recorded in 2020. However, biodiversity mapping could only be conducted in areas surveyed by the study team for which species data were available (in Detailed Botany sites), and these areas did not include all LSAs. Additional surveys would need to be conducted to provide a City-wide analysis.



## 6.4.2. Animal Biodiversity

### 6.4.2.1. Birds

The number of bird species noted in 2020 was slightly lower than in 1992: 77 were noted (for which breeding evidence was available) in 1992 while 75 were noted in the current surveys (**Appendix 4** shows the species recorded in both years). Great Blue Heron was included in this list (in both 1991 and 2020): though no definitive breeding evidence was obtained such as nests, juvenile herons were observed, and it is possible they were breeding somewhere in Markham.

**Table 21** provides a summary of the breakdown of the guilds (suites of habitat preferences) of birds seen in both years. Guild analysis was conducted as part of the 1992 report, so the same classifications were used. For species that were recorded only in 2020, guild classification was applied through interpretation of habitat requirements shown in Appendix G of the Significant Wildlife Habitat Technical Guide (MNR 2000), and the personal experience of the study team. Guild classification for each species is shown in **Appendix 4**.

**Table 21. Comparison of Guilds Recorded in Markham in 1991 and 2020.**

Habitat Guild	Number of Species	
	1991	2020
Forest edge or interior near wetlands	10	5
Open areas near wetlands	3	2
Open marsh	4	4
Sandy banks near water	3	2
Cliff ledges or bridges near water	1	1
Forest interior	2	9
Forest edge or interior	20	18
Forest edge or successional	25	29
Open areas	5	3
Anthropogenic	4	2
Total	<b>77</b>	<b>75</b>

Birds noted in 2020 included more generalist species of forest edge and successional habitats, and more species of forest interior habitats, than in 1991. Notable forest interior birds recorded only in 2020 were Scarlet Tanager, Common Raven, Canada Warbler, Magnolia Warbler and Pine Warbler. Canada Warbler and Pine Warbler could have been late migrants as they tend to be seen sporadically in southern Ontario in early June, during the breeding bird season window, but generally move on after a short time. The other species were noted more than once during the breeding season, indicating probable breeding. Some of the forest and late-successional birds seen only in 2020 included several for which range expansions have been seen since 1991, including Red-bellied Woodpecker, Common Raven, Orchard Oriole and Blue-gray Gnatcatcher. The list also included species of mid-to late-successional habitats that had not been recorded previously, such as Clay-



coloured Sparrow, Field Sparrow, American Redstart and Blue-gray gnatcatcher, probably reflecting the advance of succession in the 20 years since the first survey.

Birds seen only in 1991 included several waterfowl species that nest in successional habitats near wetlands. The five species of forest edge and interior near wetlands noted in 1991, which were not noted in 2020, were Carolina Wren, Green-winged Teal, Northern Waterthrush, Osprey and Wood Duck. Birds of anthropogenic habitats recorded only in 1991 were Rock Pigeon (which may have been missed as it is primarily a species of urban buildings), Purple Martin and Chimney Swift, which have undergone steep population declines in recent years (Cadman et al. 2005).

#### 6.4.2.2. *Amphibians*

Six species of frogs were recorded in both 1991 and 2020 (**Table 22**), with some species only recorded in one of those years. Wetland breeding amphibians were noted in both years, including Bullfrog, Green Frog and Northern Leopard Frog, which breed in human-made lakes and ponds in Markham. Woodland-breeding amphibians were recorded in both years, including Gray Treefrog (on only one occasion), and Wood Frog. However, Spring Peeper was not recorded in 1991. Evening surveys were not conducted in 1991, probably explaining why Spring Peeper was not recorded in that year. Since amphibian surveys were conducted on three occasions in 2020, including the calling time for Gray Treefrog, it is puzzling that Gray Treefrogs were not observed more often in 2020. The most recent record for this species was in 2014, during surveys by Natural Resource Solutions Inc (NRSI).

The record of Eastern Red-backed Salamander is the only one for Markham in records obtained for this study. This salamander is an inconspicuous species that is generally found under decaying logs. While incidental searches would have been conducted for this species in 1991, it is possible that it was overlooked. It was not recorded in other surveys by TRCA and consultants in Markham between 2000 and 2014. However, this species is particularly dependent on large woody debris over 35 cm dbh in closed canopy forests (Strojny and Hunter 2010), so it may have become more widespread as forest cover has matured in Markham, especially as large ash die and fall.

**Table 22. Amphibians noted in 1991 and 2020**

Species	1991	2020
American Toad	Y	Y
Spring Peeper	N	Y
Gray Treefrog	Y	Y
Bullfrog	Y	Y
Green Frog	Y	Y
Wood Frog	Y	Y
Northern Leopard Frog	Y	Y
Eastern Red-backed Salamander	N	Y



### *Reptiles*

The only reptile species noted in 1991 was Eastern Gartersnake, while three species of turtles were also noted in 2020. However, there were dedicated surveys for turtles in 2020, which were not conducted in 1991.

### *Mammals*

The suite of mammal species recorded in 1991 was similar to those recorded in 2020, consisting of urban-adapted species often recorded in surveys of urban habitat.

## **6.5. Locally Significant Areas**

The 1991 report included a description of 13 Locally Significant Areas (LSAs). Boundaries are shown in **Figure 9**. Differences in survey effort do not allow comparisons of species lists, as surveys may not have been conducted in 2020 because of the focus on areas for which information was scarce and over 10 years old. However, qualitative comparisons are shown in **Table 23**. Where comparison could be made, several broad differences between past and present LSA quality:

- 96.5% of the LSAs are encompassed by the Greenway System. The largest portions not included in the Greenway occur along the Rouge River and Little Rouge River, within the Highway 407 corridor. Most other differences are due to slightly different mapping of boundaries due to differences in recent ortho-rectified aerial photography.
- Communities noted within LSAs in 2020 were largely still extant, though with an increase in non-native species presence; especially noted was Common Buckthorn as a dominant in the shrub layer;
- In several areas, lowland forest was classified where previously swamps had been recorded. It is possible that this was because of differences in classification, as lowland forest was not an explicit category in previous classification schemes. However, it is also possible that increased evapotranspiration due to tree growth and reduced flooding have resulted in a decrease in soil moisture along floodplains, with a change from swamp to lowland forest.
- Evidence of human disturbance has increased in some areas, such as dumping, encroachment and trails; and
- Conversion of some marsh communities to stormwater facilities has resulted in increase in non-native species and increase in disturbance.



**Table 23. Comparison of Locally Significant Areas of Markham in 1991 and 2020**

LSA #	Locally Significant Area	1991	2020
1	Toogood Pond	This area is extensive and contains a diversity of biological communities and associated plants and animals. Most of this area consists of mixed coniferous-deciduous swamp, old field and open-water marsh. There is also a relatively large cattail marsh here. 8 types of vegetation documented: 4 palustrine and 4 terrestrial types.	15 Ecoseries documented in recent surveys; 8 wetland and 7 terrestrial types (4 cultural). Mixed swamp and several deciduous swamps noted; loss of organic soil (exposed tree roots) reported in mixed swamp; many non-native species noted. Encompassed by Greenway System.
2	Milne Park	One of the largest natural areas in Markham, with extensive cattail marshes, open water marsh, and high-quality swamps. Large areas of upland forests and coniferous plantations contribute further to habitat diversity. 6 types of palustrine vegetation and 8 types of terrestrial vegetation documented.	Mixed swamps dominated by native species reported; diversity and high-quality vegetation documented in wetland evaluations. 2020 surveys indicated 16 vegetation ecoseries, including 7 wetland and 10 terrestrial (including 5 cultural) types. Rare communities include 1 beach and 1 tallgrass prairie unit. MNRF Wetland Evaluation notes the Milne Park wetlands are in generally good condition. There is some issue with stormwater runoff directly into some of the wetlands. The aquatic community in Milne Lake has been negatively impacted on by the introduced Common Carp. The invasive plants, European Alder ( <i>Alnus glutinosa</i> ), Purple Loosestrife ( <i>Lythrum salicaria</i> ), True Forget-me-not ( <i>Myosotis scorpioides</i> ) and introduced buckthorns ( <i>Rhamnus cathartica</i> , <i>Rhamnus</i>



LSA #	Locally Significant Area	1991	2020
			<i>frangula</i> ) occur in some of the wetlands. Encompassed by Greenway System.
3A	Little Rouge River South	One of the largest continuous natural areas in Markham, with extensive, high-quality examples of mature, terrestrial forests, floodplain and seepage slope, swamps and extensive old-field and shrub-rich old field. Nice beds of submerged aquatic vegetation along portions of the river. 5 types of palustrine vegetation and 10 types of terrestrial vegetation make it the most diverse area in Markham with the best wildlife habitat in Markham.	This area was noted in 2020 as still one of the largest, most continuous and highest-quality areas of Markham. The northern part of this area is still surrounded by farmland and there are few impacts of excessive use, trails, or encroachment, and few non-native species. High diversity of vegetation types with 7 wetland and 11 terrestrial ecoseries noted (6 cultural); rare ecoseries include beach and bluff.  Small area within the Highway 407 corridor outside Greenway System.
3B	Little Rouge River North	Extensive area that contains a diversity of biological communities noted, with 5 types of palustrine vegetation and 8 types of terrestrial vegetation. The vegetation along most of the valley consists of old-field and grass-herb marsh. Deciduous swamp, shrub-rich old field and successional deciduous forest are also prevalent.	Wide variety of forest, swamp and cultural types present; encompassed by Greenway System.
4	German Mills Creek	Extensive area of high-quality, mature, "spectacular" mixed coniferous-deciduous forest along the valley slopes and mature	7 terrestrial ecoseries (4 cultural) and 4 wetland ecoseries; several instances of encroachment and disturbance noted including wooden



LSA #	Locally Significant Area	1991	2020
		deciduous forest on the tableland; 4 types of palustrine vegetation and 6 types of terrestrial vegetation are represented	structure, mowing and litter, hazard tree removal drainage pipe from a backyard draining into creek. Encompassed by Greenway System.
5	Warden Hemlock Woods	Plant communities of high quality including best example of mature mixed coniferous deciduous forest in Markham and excellent examples of deciduous swamp and floodplain mixed coniferous-deciduous swamp composed of white cedar and white ash; 3 types of palustrine vegetation and 6 types of terrestrial vegetation present.	5 wetland and 7 terrestrial (4 cultural) ecoseries recorded; Hemlock - Sugar Maple mixed forest and mixed swamp described as good quality in 2020 - Common buckthorn noted as one of the dominants in the shrub layer of both communities; report that a portion of deciduous swamp was destroyed by construction; largely encompassed by Greenway System except for small portions between the two creeks and a narrow tongue of vegetation that extended west are outside the Greenway System.
6	Robinson Creek Headwater Swamp	Natural vegetation consists mostly of swamps, grass-herb marsh, and old-field vegetation. Although much of this vegetation is disturbed, there are a number of areas which were probably never grazed, and high-quality vegetation is present here. 4 types of palustrine vegetation and 4 types of terrestrial vegetation.	Not studied in 2020 but there is recent data from the Subwatershed Study and TRCA; 6 wetland and 9 terrestrial (6 cultural) communities recorded with Black Ash, Eastern White Cedar and Swamp Maple-dominated swamp reported, but no information on dominants in lower layers, meadow is still mapped but some of the meadow has succeeded to more treed communities including



LSA #	Locally Significant Area	1991	2020
			cultural savannah and woodland. Encompassed by Greenway System.
7	Milnesville Swamp	Excellent example of mature deciduous swamp, dominated by extremely massive specimens of silver maple. The northern and southern sections of this natural area consists of deciduous swamp. The area between these is dominated by old-field, grass-herb marsh, and shrub-rich old field. Number of communities is not reported.	3 wetland and 4 terrestrial (3 cultural) ecoseries noted; swamp dominated by Silver Maple, meadow marsh dominated by Reed Canary-grass and cultural communities in varying states of succession catalogued within this area by TRCA and the Subwatershed Study but recent field work not specifically noted. Encompassed by Greenway System.
8	Robinson Creek	This area contains high quality mixed coniferous-deciduous swamp on seepage slopes and along the floodplain, and deciduous swamps along the floodplains. There are coniferous plantations on the tableland adjacent to either side of the creek, and a small but good-quality cattail marsh occurs along the floodplain. Number of communities is not reported.	2 wetland and 4 terrestrial (2 cultural) ecoseries noted, with several lowland forest communities recorded (including deciduous and cedar-hardwood) but swamp communities not recorded; non-native invasive species reported as occasional to dominant in polygons studied in 2020; extensive trails and dumping in some areas, Common Buckthorn reported as a dominant in both the shrub layer and ground later of many communities; cattail shallow marsh reported to be a stormwater management facility with abundant invasives and other disturbances. Encompassed by Greenway System.

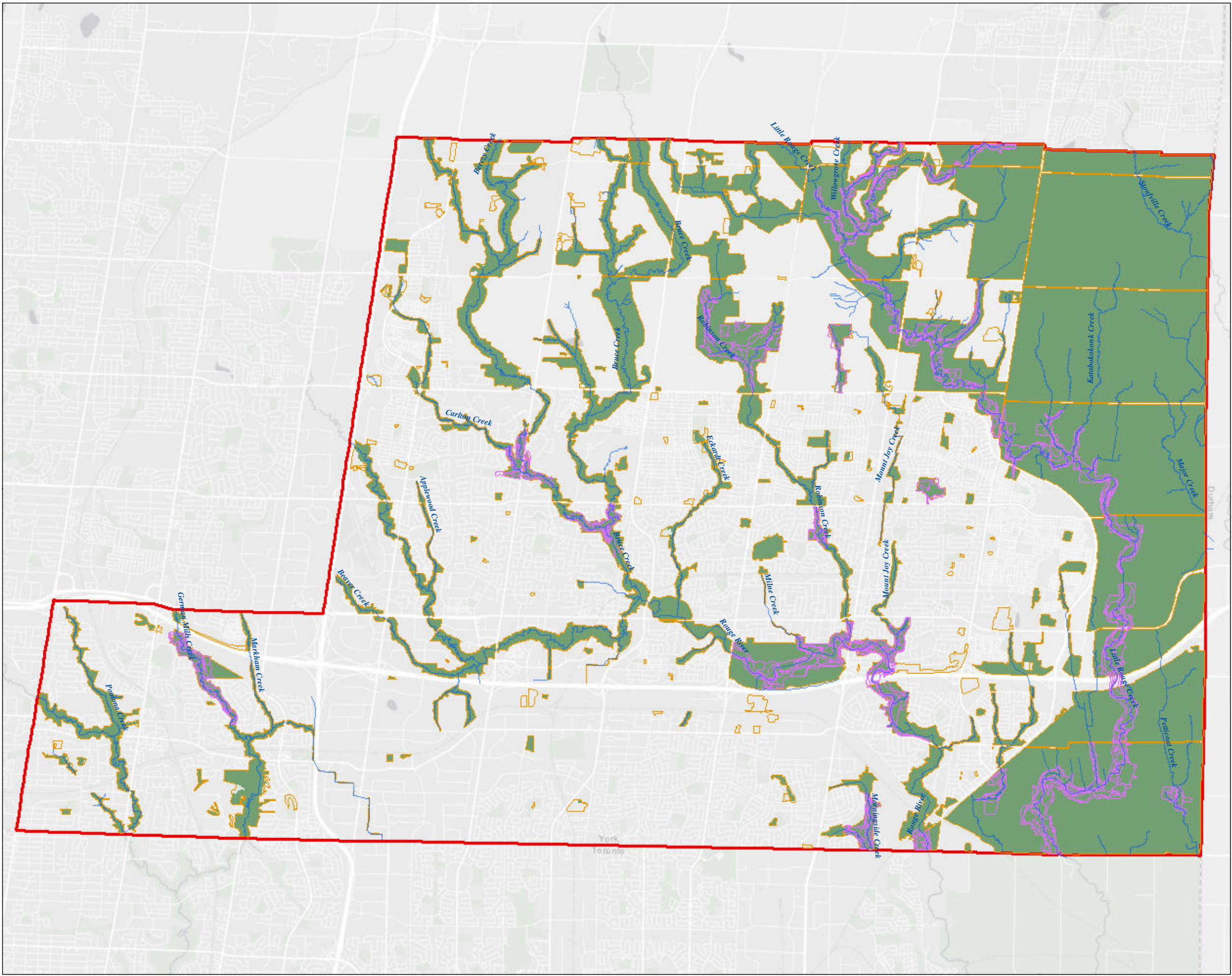


LSA #	Locally Significant Area	1991	2020
9	Rouge River Markham	High-quality examples of mature deciduous forest on tableland and mature mixed coniferous – deciduous slope forest; 4 types of palustrine vegetation and 8 types of terrestrial vegetation present.	No recent field data but ELC mapping shows a variety of forest and swamp types; encompassed by Greenway System except along Highway 407 corridor and a small area along east edge north of Highway 407.
10	Morningside Creek	Exceptional example of mature mixed coniferous-deciduous forest and floodplain, and interfluvial tableland forest. High-quality deciduous swamps are found along the floodplains	3 wetland and 4 terrestrial (3 cultural) ecoseries recorded, which include mixed forest dominated by native species (including White Ash); community classifications include lowland forest but no swamp communities; quality not recorded. Encompassed by Greenway System.
11	Rouge River South	An excellent example of mixed coniferous-deciduous swamp on a seepage slope, and mature deciduous, coniferous and mixed deciduous-coniferous forest on the slope and toe of the west bank; old-field vegetation occurs between the swamps and the river.	5 wetland and 6 terrestrial (four cultural) ecoseries recorded, including white cedar-hardwood mixed swamp, and fresh-moist white cedar – sugar maple mixed forest. Encompassed by Greenway System.
12	Box Grove Forest	The largest stand of mature deciduous forest in Markham is found here. It is of excellent quality, showing little evidence of human disturbance. Mixed coniferous-deciduous and deciduous swamp occur to the north and along the creek floodplain; a	3 wetland and 7 terrestrial (including 4 cultural) ecoseries; several lowland forests and deciduous swamp described but no mixed swamps recorded; non-native species reported as abundant to dominant in forest communities; Common Buckthorn and ash species reported



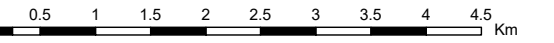
LSA #	Locally Significant Area	1991	2020
		large area of successional deciduous forest occurs in the northwestern section.	as one of the dominants in the understory in several communities; dumping, tracks and trails recorded as light; moderate recreation impacts in mixed forest. Encompassed by Greenway System.
13	Petticoat Creek Swamp	A high-quality deciduous swamp is found here. There is also mature deciduous forest, successional forests and shrub-rich old-field present	Forest and swamp mapped in recent ELC but no detailed data available. Encompassed by Greenway System.





**Figure 9 | Markham Natural Features Inventory:**  
Locally Significant Areas Mapped in 1991  
Relative to Markham's Greenway System

- Legend**
- Markham Boundary
  - Locally Significant Areas
  - Study Area
  - Markham Greenway System (2014)
  - Watercourses



Project Number 20-1131	Date: 2021-04-22	
---------------------------	---------------------	--

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or  
distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





## 7. Evaluation of the Greenway System

### 7.1. Comparison with Federal, Provincial and Municipal Standards

The third edition of Environment Canada's "How Much Habitat is Enough" provides some standards by which the amount of habitat protected by the Greenway System can be assessed. Guidelines for assessing Significant Woodlands, Significant Valleylands and Significant Wildlife Habitat provide an assessment of whether the Greenway System incorporates some or all of the features that are of highest priority for protection in the Provincial context.

#### 7.1.1. Federal Standards

**Table 24** provides guidelines for the type and amount of habitat that should be protected according to Environment Canada's "How Much Habitat is Enough?", according to the amount of habitat that remains and proximity of watercourses, wetlands and terrestrial vegetation. These guidelines are meant to apply to non-urban watersheds (Environment Canada 2013), and so are not directly applicable at a city-wide scale in a highly urbanized landscape like Markham, but they provide valuable principles for protection. Reviewing these benchmarks within the remaining rural landscape can be done as future development proceeds (as was done in the Markham Future Urban Area Subwatershed Study) and can be a useful step to understand the potential strengths and threats to the Greenway System. Most of Markham is within the Rouge River watershed.

**Table 24. Wetland, Riparian, Forest and Grassland Guidelines Recommended by Environment Canada 2013**

Habitat	Natural Heritage Network
The greater of a) 10% of each major watershed and 6% of each subwatershed or b) 40% of the historic watershed wetland coverage, should be protected and restored	This extent of watershed protection is not possible in Markham's most urban areas, but the eastern part of the watershed is still agricultural, and these principles can provide guidance
Particular wetland functions can be achieved by rehabilitating wetlands in key locations, such as headwater areas, floodplains and coastal wetlands	Naturally-vegetated headwaters and floodplains are largely protected within the Greenway System
Protection Zones should protect the wetlands from stressors. Recommended widths should consider sensitivities of the wetland and the species that depend upon it, as well as local environmental conditions, vegetative structure of	Wetlands along watercourses are bordered by forests, meadows and successional areas within the Greenway System. In some cases, development along forest edges is encroaching on forest function, and this will have indirect effects on wetland function.



Habitat	Natural Heritage Network
the Protection Zone, and nature of the changes in adjacent land uses.	Markham's policies require inclusion of wetlands as Key Natural Heritage Features.
Wetlands that are in close proximity to each other, based on their functions, or that are in close proximity to other natural heritage features, should be given a high priority in terms of landscape planning	Wetlands in close proximity along watercourses are protected within the Greenway System
Capture the full range of wetland types, areas and hydroperiods that occurred historically within the watershed. Swamps and marshes of sufficient size to support habitat heterogeneity are particularly important, as are extensive swamps with minimum edge and maximum interior habitat to support area-sensitive species	All of the swamps and marshes identified as the largest, most diverse and highest quality in 1991 have been protected within Markham's Greenway System. Several wetlands with high interior-to-edge ratios are included, such as Toogood Pond and Milne Park.
Focus on restoring marshes and swamps	All marshes and swamps identified in the 1992 Natural Features Study are included in Markham's Greenway System.
Riparian Habitat	
Both sides of streams should have a minimum 30-m-wide naturally vegetated riparian area to provide and protect aquatic habitat. The provision of highly functional wildlife habitat may require total vegetated riparian widths greater than 30 m	Larger, high quality streams (the Rouge River and Little Rouge River) have a naturally vegetated riparian area that is wider than 60 m for most of their length. In many cases, riparian corridors extend further than 30 m from streams. Many smaller tributaries and streams in the western part of Markham have riparian habitat that extends less than 30 m
75% of stream length should be naturally vegetated	The Greenway System protects streams in a naturally vegetated corridor
Urbanizing watersheds should maintain less than 10% impervious land cover in order to preserve the abundance and biodiversity of aquatic species	Urbanized parts of Markham are well over 10% impervious. It is likely not possible to maintain less than 10% impervious cover in the urbanizing areas of Markham even in watersheds within the Greenway System.



Habitat	Natural Heritage Network
	However, increase in impervious cover is being limited within the Greenway System in less urbanized parts of Markham, especially along the Little Rouge River.
Forest Habitat	
30% forest cover at the watershed scale is the minimum forest cover threshold.	Overall, Markham has 7.85% forest cover; the legacy of farming and subsequent urbanization precludes restoration of this minimum forest cover.
A watershed or other land unit should have at least one, and preferably several, 200 ha forest patches (measured as forest area that is more than 100 m from an edge)	Forest patches of that size are not found in Markham. The largest patch of natural habitat in the Greenway System is over 600 ha (located in northeast Markham surrounding the Little Rouge Creek and Reesor Road), and though this patch contains agricultural land, there may be context for creating forest patches of this size.
To be of maximum use to species such as forest breeding birds that are intolerant of edge habitat, forest patches should be circular or square in shape	Forest patches that are circular or square in shape occur along the Little Rouge River and Rouge River, as well as sporadically in the western part of Markham. The Greenway System agglomerates several patches with the ultimate goal of restoring well-configured forest patches in Markham
The proportion of the watershed that is forest cover and 100 m or further from the forest edge should be greater than 10%	The legacy of urbanization in Markham has meant that this proportion of forest cover is not achieved in Markham
To be of maximum use to species such as forest birds and other wildlife that require large areas of forest habitat, forest patches should be within two km of one another or other supporting habitat features. "Big Woods" areas, representing concentrations of smaller forest patches as well as larger forest patches, should be a cornerstone of	The Greenway System protects linkages of forest patches within two km of each other and supporting habitat features, with several nodes that encompass potential "big woods" areas



Habitat	Natural Heritage Network
protection and enhancement within each watershed or land unit	
Connectivity width will vary depending on the objectives of the project and the attributes of the forest nodes that will be connected. Corridors designed to facilitate species movement should be a minimum of 50 to 100 m in width. Corridors designed to accommodate breeding habitat for specialist species need to meet the habitat requirements of those target species and account for the effects of the intervening lands (the matrix)	Over 99% of the Greenway System is connected by corridors over 60 m in width. Connectivity within the Greenway System is greatest in the eastern part of the Rouge and Little Rouge watersheds, with corridors over 200 m wide; corridors in the western watersheds and western portion of Rouge watershed are primarily narrower than this.
Watershed forest cover should be representative of the full diversity of naturally occurring forest communities found within the ecoregion. This should include components of mature and old growth forest	All forest types identified by the 1992 Markham Natural Features study, which likely included a broad cross-section of historic vegetation communities present on the landscape during the agricultural period, are found in the vegetation mapping in the 2020 natural features study.
Grassland Habitats	
Focus on restoring and creating grassland habitat in existing and potential grassland landscapes	Large areas of grassland persist along the Rouge River and Little Rouge River; enhancement areas in the Greenway System promote the persistence of grasslands in the short term
Maintain, restore and create native grassland patches to their historic extent and type at a county, municipal and/or watershed scale considering past presence and current conditions	Opportunities persist in the eastern part of the Little Rouge watershed to restore some grassland habitat
Grassland habitat patches should be clustered or aggregated, and any intervening land cover should be open or semi-open in order to be permeable to species movement.	Grassland patches are clustered in the eastern part of the Greenway where agricultural land persists



Habitat	Natural Heritage Network
Maintain and create small and large grassland patches in existing and potential local grassland landscapes, with an average grassland patch area of greater than or equal to 50 ha and at least one 100 ha patch.	The large areas within the Greenway System create opportunities for grassland restoration though this must be balanced with the fact that most of the Markham watersheds were forested prior to settlement; grasslands likely occurred as small openings
Some grassland habitat should be located adjacent to hedgerows, riparian and wetland habitats for species that require different habitat types in close proximity	Grassland patches occur in a primarily agricultural landscape where there is a mosaic of different habitats.

### 7.1.2. Provincial Standards

Natural heritage features of provincial significance are set out in the Provincial Policy Statement. Guidelines and criteria for determining features of provincial significance are set out in the Natural Heritage Reference Manual (MNR 2010), the Greenbelt Plan Technical Papers, and the Oak Ridges Moraine Technical Papers. Since determination and mapping of Significant Woodlands is a municipal task, the Region of York's Significant Woodland criteria interact with provincial guidance. Other supporting documents include the Ecoregion Schedules for determining Significant Wildlife Habitat (MNR 2015), as well as guidance in the Significant Wildlife Habitat Technical Guide (MNR 2000). Many areas within the Greenway System meet the criteria for significant areas, including Significant Woodlands, Significant Valleylands, and Significant Wildlife Habitat. Provincially Significant Wetlands have been mapped by MNRF within the City of Markham (**Figure 8**). **Table 25** provides a summary of provincially significant features within the City of Markham, as well as the amount of habitat for features that have been mapped.

**Table 25. Provincially Significant Features within the City of Markham**

Feature	Area	Comment
Significant Wetlands	510 ha	Mapped by the Ontario Ministry of Natural Resources and Forestry; <b>Figure 8</b> . 98% are mapped within the Greenway System
Significant Woodlands	1313 ha	Mapped on the basis of aerial photography; 94% of Woodlands in Markham that may qualify as significant woodlands on the basis of preliminary significant



Feature	Area	Comment
		woodland mapping (using GIS analysis only) are encompassed by the Greenway System
Significant Valleylands	Not Mapped	Not Mapped; however all large river valleys are encompassed by the Greenway System.
Significant ANSIs	Candidate Life Science ANSI: 72.24 ha	Mapped by the Ontario Ministry of Natural Resources and Forestry; all encompassed by the Greenway System
Significant Wildlife Habitat	Not Mapped	<p>The following types of SWH were noted in the Greenway System in Markham surveys, though habitat is not mapped:</p> <ul style="list-style-type: none"> <li>• Turtle wintering areas (Toogood Pond, Milne Park)</li> <li>• Rare vegetation communities (Tallgrass Prairie)</li> <li>• Woodland Raptor Nesting Habitat</li> <li>• Seeps and Springs</li> <li>• Amphibian breeding habitat (wetlands)</li> <li>• Area-sensitive breeding bird habitat</li> <li>• Marsh breeding bird habitat</li> <li>• Habitat for special concern and rare wildlife species</li> <li>• Background information indicates there are other types of SWH within the Greenway System as well, such as Waterfowl Stopover and Staging Areas (Aquatic),</li> <li>• The Greenway likely supports SWH for bat maternity roost habitat and reptile hibernacula</li> </ul>

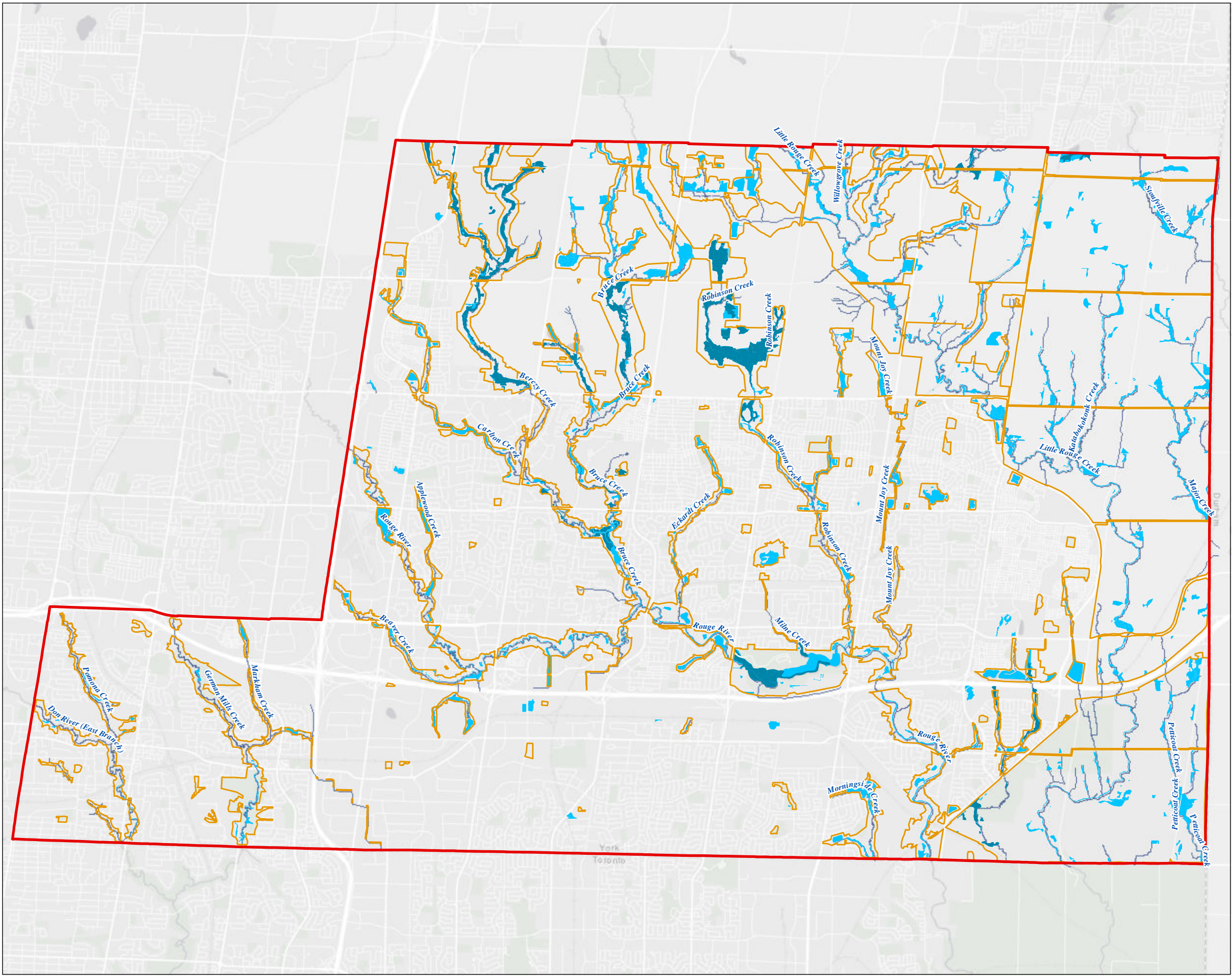
Despite amphibian surveys that surveyed the same habitat multiple times, no Significant Wildlife Habitat for breeding woodland amphibians was noted. Amphibian breeding habitat for wetland species mainly met the criteria for SWH because they provided breeding habitat for American Bullfrog, but the numbers of species and individuals was not sufficient to indicate SWH for other wetland amphibian species.



#### *7.1.2.1. Provincially Significant Wetlands*

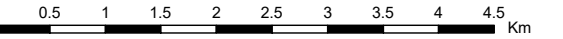
The following wetlands have been evaluated as Provincially Significant by MNRF, according to the Ontario Wetland Evaluation System protocols for southern Ontario. They are shown in relation to Markham's wetland cover and the Greenway System in **Figure 10**. A brief summary of the wetland significance as described by MNRF is provided below. MNRF has recently mapped additional wetlands in the City of Markham, and this mapping is provided in Appendix 5.





**Figure 10 | Markham Natural Features Inventory:**  
Wetland Cover and Provincially Significant Wetlands Relative to Markham's Greenway System

- Legend**
- Markham Boundary
  - Markham Greenway System (2014)
  - Watercourses
  - Wetlands (Ecological Land Classification)
  - Provincially Significant Wetlands (LIO)



Project Number 20-1131	Date: 2021-04-22	
---------------------------	---------------------	--

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





- Bruce & Berczy Creek Wetland Complex
  - The wetland complex captures the diversity of wetland types along the Bruce and Berczy Creeks. It consists largely of riverine wetlands with scattered isolated wetlands, and a few palustrine wetlands mostly on clay loams. The creeks support coldwater Rainbow Trout (*Oncorhynchus mykiss*) and Redside Dace (*Clinostomus elongatus*) habitat maintained by numerous seeps. The dominant wetland vegetation forms are deciduous swamps and graminoid marshes followed by herbaceous marshes, cattail marshes, coniferous swamps, and, and the occasional thicket swamps and open water aquatic communities. The wetlands support a diversity of 40 vegetation communities, as well as 456 plant species and 87 breeding bird species in the wetlands and adjacent lands.
- Cedar Grove Wetland Complex
  - The wetland complex captures the diversity of wetland types along the entire section of a major tributary of the Little Rouge Creek. It consists entirely of palustrine wetlands, all of which occur on loams. The dominant wetland vegetation forms are deciduous swamps followed by narrow-leaved emergent marshes. Less frequent are thicket swamps, cattail marshes, herbaceous marshes, and free-floating open water marshes. The wetlands support a diversity of 67 vegetation communities (37 vegetation forms), as well as 552 plant species, 75 breeding bird species, 45 dragonfly and damselfly species, and 17 reptiles and amphibians in the wetlands and adjacent lands.
- Little Rouge Creek at Stouffville Wetland Complex
  - The wetland complex captures the diversity of wetland types along the upper portion of Little Rouge River. It largely consists of groundwater-fed palustrine and riverine wetlands on loams with the dominant vegetation deciduous swamp and narrow-leaved emergent marsh followed by conifer swamp, robust emergent marsh, ground cover marsh, tall shrub swamp, and unvegetated open water.
- Milne Park Wetland Complex
  - The wetland complex captures the diversity of wetland types along this mid-section of the Rouge River watershed. It consists largely of riverine wetlands on bottomland clay loams. The dominant wetland vegetation forms are submergent open water marshes, followed by a conifer-dominated swamp, cattail or robust-emergent marshes, deciduous swamps and graminoid or narrowleaved emergent marshes. The wetlands and adjacent lands support 8 different vegetation communities, as well as 272 plant species, 38 breeding bird species and a warmwater fisheries.
- Unionville Marsh Wetland Complex
  - The wetland complex captures the diversity of wetland types along this mid-section of the Rouge River watershed. It consists of palustrine and riverine wetlands, largely on loam soils. The dominant wetland vegetation forms are robust-emergent marshes, followed by narrow-leaved emergent (graminoid) marshes, ground cover (herbaceous)



marshes, deciduous swamps, tall shrub (thicket) swamps, submerged open water marshes, and free-floating open water marshes.

Two additional wetlands have been evaluated by MNRF as locally significant:

- Greensborough Wetland Complex
  - The wetland complex captures the diversity of wetland types in the Greensborough neighbourhood. It supports 7 vegetation communities on clay loams. The dominant wetland vegetation forms are deciduous swamps, followed by a thicket swamp and a robust emergent marsh.
- Milnesville Wetland Complex
  - The wetland complex includes three individual wetlands, consisting of deciduous swamp, thicket swamp and shallow marsh, dominated largely by native species, including the marsh which was dominated by native cattail. The marsh does not contain significant amounts of open water.

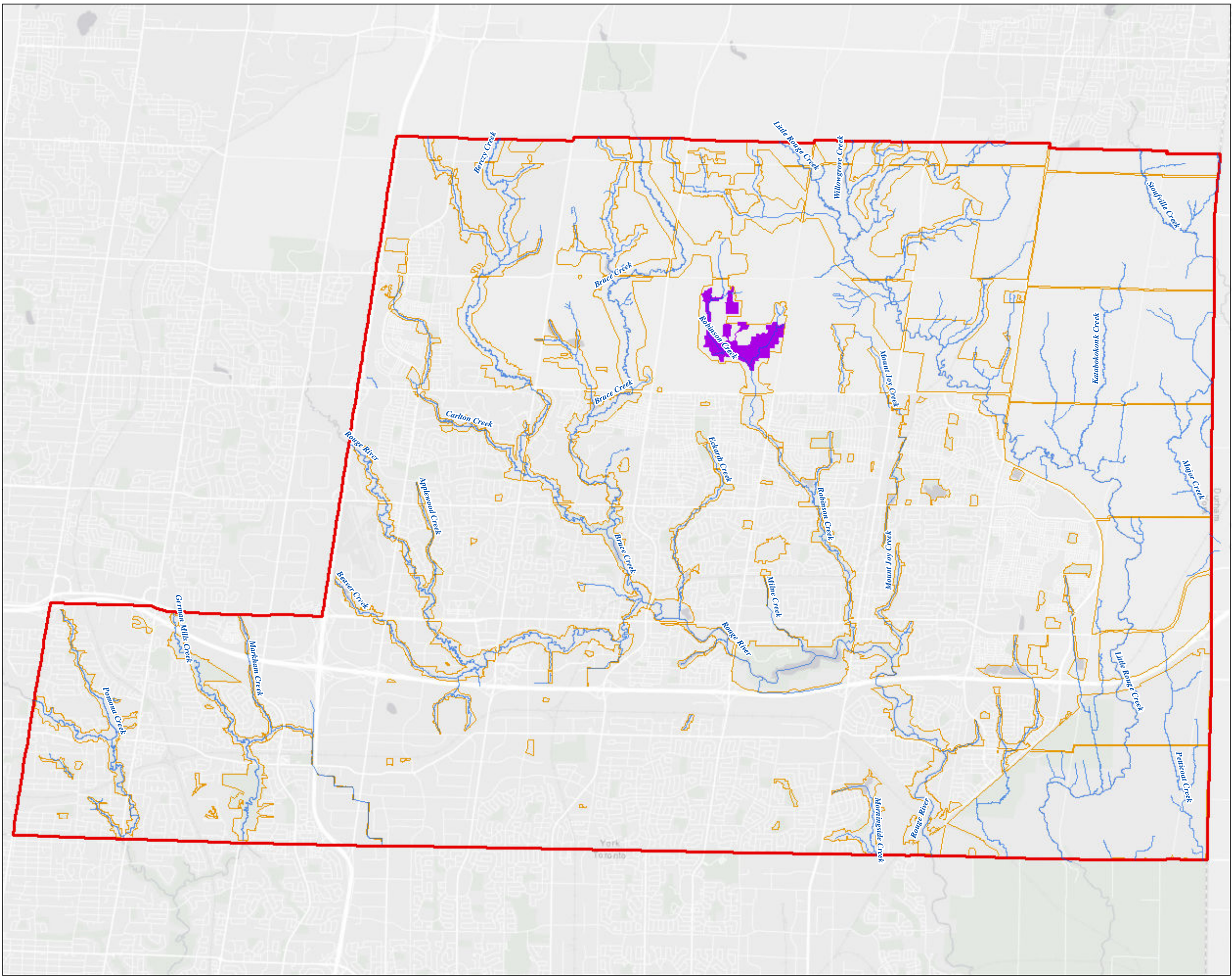
#### *7.1.2.2. Areas of Natural and Scientific Interest (ANSIs)*

ANSI's (Areas of Natural and Scientific Interest) are polygon features that represent lands and waters containing important natural landscapes or features that are important for natural heritage, protection, appreciation, scientific study or education. One Candidate Life Science ANSI is situated in Markham: the Robinson Swamp. It is shown in **Figure 11**. ANSIs are selected by MNRF using an established approach. Life Science ANSIs are selected to encompass the most intact vegetation communities that best represent significant landform/vegetation associations in a given Ecodistrict using the following five criteria: representation, condition, diversity, other ecological considerations (e.g., ecological and hydrological functions, connectivity, size, shape, proximity to other important areas), and special features (e.g., populations of species at risk, rare habitats).

#### *7.1.2.3. Significant Woodlands*

Significant Woodlands are protected by the Provincial Policy Statement. Significant woodland mapping is a municipal responsibility, and is based on the application of significant woodland definitions in the York Region and Markham Official plans and confirmed through an Environmental Impact Studies. The City of Markham has previously mapped woodlands using sources such as York Region's woodland mapping, TRCA mapping and Markham mapping. Woodland cover (a term used to encompass all wooded communities, including swamps, cultural woodlands and forests) is shown for the study area in **Figure 12**. Additional areas of woodlands occur outside the study area, but they have not been recently mapped.





**Figure 11 | Markham Natural Features Inventory:**  
Candidate ANSIs Relative to Markham's Greenway System

- Legend**
- Markham
  - Markham Greenway System
  - Candidate ANSI: Life
  - Watercourses

00.511.522.533.544.5

Km

Project Number 20-1131	Date: 2021-04-22	<div>N</div>
---------------------------	---------------------	--------------

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





### 7.1.3. Municipal Standards

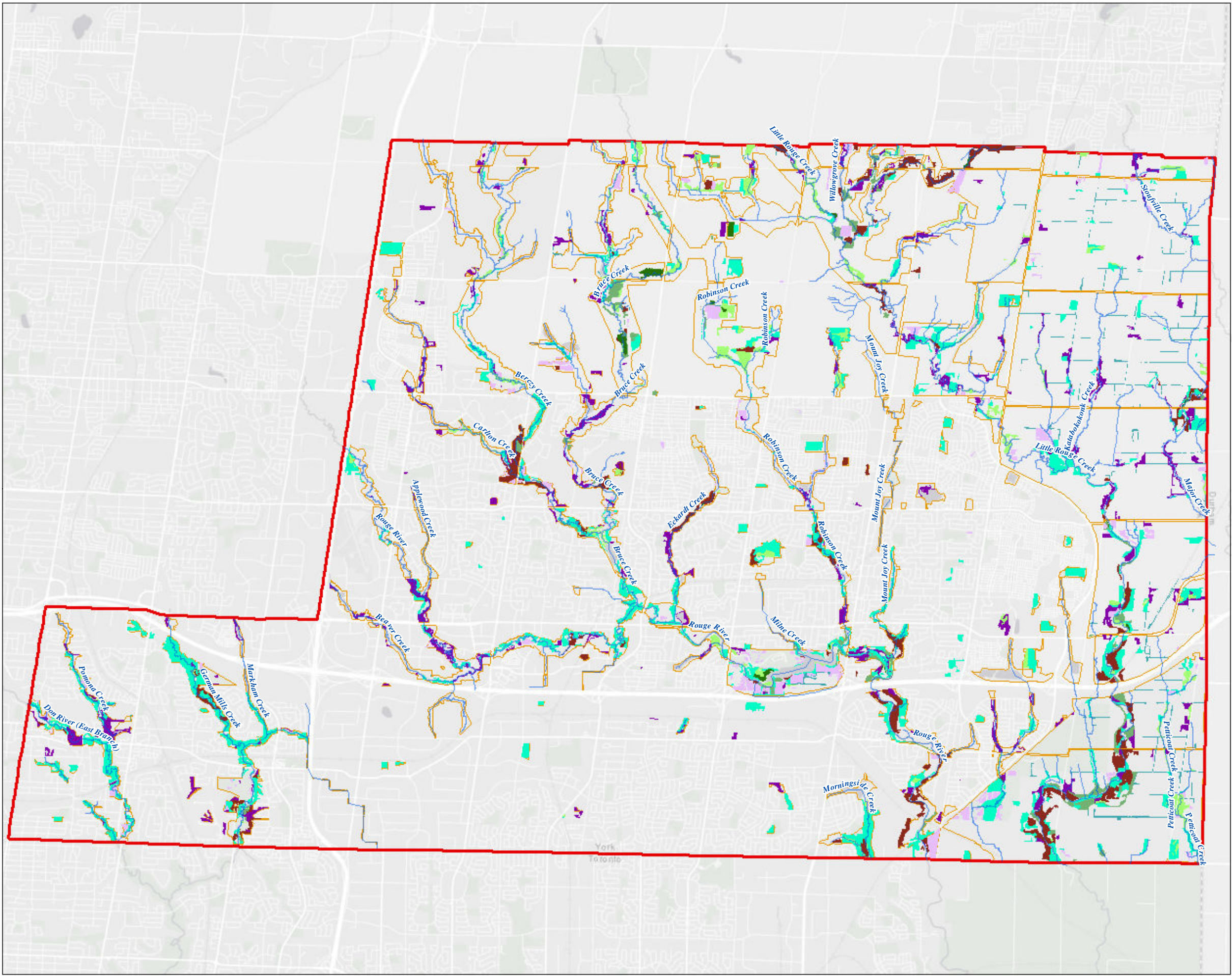
#### 7.1.3.1. *Markham's Greenway Criteria*

The City of Markham's Official Plan policies state that the Greenway should encompass a) natural heritage and hydrologic features; b) vegetation protection zones associated with the features identified in 3.1.2.1a); and c) hazardous lands and hazardous sites.

Key hydrologic features include wetlands, lakes and their littoral zones, permanent streams and intermittent streams, and seepage areas and springs. These features continue to form the core of the Greenway System.

Key natural heritage features include the habitat of endangered and threatened species, and habitat of special concern species including provincially rare species as provided for in the Greenbelt Plan and Oak Ridges Moraine Conservation Plan, fish habitat, wetlands, Life Science Areas of Natural and Scientific Interest, significant valleylands, significant woodlands, significant wildlife habitat, and sand barrens, savannahs and tallgrass prairies. **Table 26** indicates that of the habitat types documented in the City (excluding anthropogenic habitat such as manicured and mowed areas), 97% occur within the Greenway. This includes 95% of wetlands (98% of Provincially Significant Wetlands), 97% of woodlands, and 93% of cultural communities (with the caveat that there may be cultural vegetation outside the Greenway System that is not mapped). Large amounts of agricultural lands remain within the Greenway (associated with the Greenbelt Plan). These habitats provide habitat for the majority of endangered, threatened and special concern species, significant wildlife habitat, and provincially rare species in Markham.





**Figure 12 | Markham Natural Features Inventory:**  
Woodland Cover Relative to Markham's Greenway System

**Legend**

- Markham Boundary
- Markham Greenway System (2014)
- Watercourses

**Wooded Area (Ecological Land Classification)**

- Tree Bluff
- Cultural Plantation
- Cultural Woodland
- Treed Fen
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Hedgerow
- Coniferous Swamp
- Deciduous Swamp

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 Km

Project Number 20-1131	Date: 2021-04-22	N
---------------------------	---------------------	---

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.





**Table 26. Areas of vegetation ecoseries within and outside the Greenway (note that the analysis for areas outside the Greenway System is approximate as current vegetation mapping was not available, so the analysis relied on older sources of data)**

<b>Vegetation Type</b>	<b>Area within Greenway (ha)</b>	<b>Area Outside Greenway (Ha)</b>
<b>Marsh</b>		
Open Water and Aquatic (OAO, SA (S,M, F))	170.52	7.82
Shallow Marsh (MAS)	58.40	1.52
Meadow Marsh (MAM)	238.71	26.05
Thicket Swamp (SWT)	51.56	1.35
Treed Fen (FET)	0.19	0
<b>Swamp</b>		
Deciduous Swamp (SWD)	161.44	2.34
Coniferous Swamp (SWC)	18.82	0
Mixed Swamp (SWM)	54.62	1.38
<b>Cultural</b>		
Cultural Meadow (CUM)	722.50	59.13
Cultural Thicket/ Cultural Savannah (CUT, CUS)	208.81	17.97
Cultural Plantation (CUP)	155.62	2.14
Cultural Woodland (CUW)	258.50	18.86
<b>Beach/Bar and Bluff</b>		
Gravel Beach/Bar (BBO)	1.29	0
Shrub Beach (BBS)	0.66	0
Open Bluff (BLO)	0.44	0.27
Treed Bluff (BLT)	0.06	0
<b>Mature Forest</b>		
Deciduous (FOD)	605.43	21.39
Coniferous (FOC)	90.33	0.23
Mixed Coniferous-Deciduous (FOM)	204.99	1.89
<b>Anthropogenic</b>		
Agriculture (AGR)	3195.71	unknown
Hedgerow	70.53	unknown
Prairie (TPO) (Planted)	0.62	0

## 8. Connectivity

The Greenway System consists of a mosaic of woodlands, successional habitat and wetlands, connected by riparian habitat along watercourses. Over 78% of the Greenway System habitat patches



are linked by corridors that are a minimum of 50 m wide, as recommended by Environment Canada (2013), and 62% of habitat patches are linked by corridors 100 m wide. There are approximately 41 patches that are not linked making up roughly 103.5 ha or 1.5 % of the Greenway. The protection of larger nodes of habitat, and connections between nodes, as well as the width of the riparian areas, has been critically important to the protection of biodiversity. However, one of the bird guilds that appears to be declining is those species that breed along open riparian corridors. Protection of additional areas along watercourses would provide additional habitat for these species.

Corridor function could also be improved by ensuring that buffers are implemented adjacent to habitat areas, and along watercourses, increasing the width of corridors and providing additional successional areas and space for breeding birds; as well as other less well-studied organisms that provide a foundation for the ecosystem such as small mammals and insects.

East-west connections are also important for connectivity. Individual linear north-south corridors along creeks and rivers that encompass much of Markham's natural heritage were somewhat connected in the past by farmland. While farmland did not provide a sufficient linkage for the full range of movement of animals and plants, in spring, soils were moist and there were many depressions that would provide habitat for small, sedentary species that needed to cross to other watercourses, especially from those that are narrow and have low diversity. The growth of crops in the summer provided cover for wildlife movement. As urban habitat surrounds north-south corridors, the connection between the corridors is severely impaired as there is little potential for movement of animals across the extensive roads and impervious landscape. East - west linkages are critical for providing connectivity between corridors and avoiding species loss as riparian corridors become more isolated. East-west connections are rare in Markham, but occur in the central part of the watershed along the Rouge River, through Milne Park.

The City has established a major east-west linkage north of Elgin Mills Road identified as Natural Heritage Network Enhancement Lands - Core Linkage Enhancements in the Official Plan 2014. This linkage is intended to provide wildlife corridors and mitigate the reduction in connectivity among natural features as agricultural land are urbanized.

The connectivity of Markham's Greenway System to the natural heritage systems of neighbouring municipalities should continue be considered in policies for maintenance and enhancement of the Greenway System.

## 9. Areas of Ecological Importance

The importance of Little Rouge River and the Rouge River corridors cannot be overstated. The Little Rouge River corridor, in particular, is still largely surrounded by farmland, which affords greater connectivity between habitat than urban development. The habitat nodes along these watercourses are larger than elsewhere in Markham, and more diverse. These two corridors are also important from the perspective of aquatic and riparian habitat. Policies on methods of protecting and improving



water quality and preventing erosion in these systems should be expanded to ensure the long term health of these corridors. Other areas of exceptional diversity and quality include Morningside Creek in the southern part of the City.

Wetlands harbour high diversity in relation to their size, and each additional wetland that can be brought into the Greenway System contributes to biodiversity. However, all parts of the Greenway System contribute to the biodiversity of the system as a whole.

Areas of Local Significance (as described in Section 6.5) continue to harbour special features, some of which have been degraded by encroachment from adjacent residential development, use of wetland features as stormwater treatment facilities, and non-native species invasion.

## 10. Long-Term Monitoring Framework

More regular monitoring of natural areas would help the City to ensure the long-term health and sustainability of natural areas. Monitoring can be used to evaluate the results of future management strategies including any efforts to manage invasive species and undesirable disturbances and encroachment. A long-term monitoring framework, conducted every five years, should contain the following elements:

1. Rigorous monitoring of non-native invasive species should be conducted at selected locations as part of a scientifically-designed invasive species management plan (See Section 11.2).
2. Compliance monitoring should continue to be conducted to monitor the after-effects of development: including compliance with recommendations of development agreements and adherence to municipal policies. Monitoring should particularly include:
  - o Aerial photo monitoring to determine whether buffers have been respected, by developers during construction and, following occupation, by neighbouring residents, and determine the most severe areas of impacts of encroachment from neighbouring development, particularly residential development. Where impacts are taking place, consideration should be given to managing the edge impacts by constructing fences, screening natural vegetation, or educating landowners.
  - o Monitoring on the ground to determine the impacts of people on natural areas, including monitoring user-created trails, unauthorized bicycle and vehicle impacts, off-leash dogs, dumping, party spots and associated trampling and vegetation destruction.
3. Effectiveness Monitoring should be conducted to determine the efficacy of mitigation measures. A long-term biological monitoring program should be designed to monitor biodiversity within a selection of small and large sites, including, for example,
  - a. diversity of native spring ephemerals, tree cover and other measures of forest and wetland change,
  - b. biodiversity within areas that have been identified as hotspots of flora biodiversity in this study and in the 1992 study;
  - c. breeding birds, and



- d. woodland-breeding amphibians in sites where they were found. Additional effort should be made to find and monitor new amphibian monitoring sites to determine if there is additional diversity of species, especially woodland breeding amphibians, within the Greenway System. Citizen Science monitoring databases may help in collection of new data, but it must be acknowledged that there are some difficulties with using these databases for monitoring: the methods used to find species may not be consistent, the documentation of species and conditions may not include enough information for comparison, and skills of observers may not be consistent. However, if guidance is provided on documentation and survey methods, valuable information can be derived from these sources.
4. Monitoring of road crossings within the Greenway System should be conducted to determine whether there is evidence of road-kill, particularly of amphibians and reptiles. This monitoring entails night-time patrolling of roads and identification of road-killed animals, so it should be done by experienced individuals. Should high levels of mortality be observed at road crossings, consideration should be given to facilitating the crossing and implementing crossing structures to reduce mortality.

A framework for reporting monitoring results, and for the City to review monitoring results, should be implemented. The framework should include thresholds used as indicators of problems, with a rigorous plan of next steps that need to be implemented, should monitoring indicate that the Greenway System is not functioning as required.

## 11. Conclusions and Recommendations

### 11.1. Conclusions

Natural vegetation in Markham is largely centred around watercourses, as it was in 1992. Biodiversity of fauna and flora in Markham has remained similar to what was reported in 1992, with similar numbers of species reported. The less-developed eastern part of the study area along Little Rouge River is responsible for approximately 60% of the habitat areas recorded. Similar to the findings in the 1992 study, forests are largely dominated by Sugar Maple and Eastern White Cedar, with little forest dominated by shade-intolerant species such as oak. Swamps are largely dominated by non-native species (Hybrid Willow and Manitoba Maple), while marshes are limited, mainly dominated by the non-native species Reed Canary-grass, as in 1992. One change in forest composition appears to have occurred since 1992: Black Walnut is a common component of forest in 2020, but was not common in 1992. This species was widely planted by farmers, likely in the 1960s and 1970s, and so may have increased in size to the point where it became dominant only in recent years. However, this species is also spread by Grey Squirrel (*Sciurus carolinensis*) (BhaduriHauck 2015), which may be more abundant than in 1992 as it is well adapted to urban areas.



All significant areas (e.g. Provincially Significant Wetlands and Candidate ANSIs, Locally Significant Areas) identified in the 1992 study have remained undeveloped, though some areas show impacts of trails, encroachment, dumping and stormwater development.

Fewer farms occur adjacent to Markham's watercourses than in the past, and there were few farming-related disturbances were noted within the Greenway System such as livestock grazing and fuel-wood logging. However, non-native invasive species have become much more prevalent since the 1992 study. However, there continue to be areas where vegetation quality is very high, particularly along Little Rouge River on the eastern side of Markham, along Morningside Creek (a tributary of the Rouge River) in the southeastern part of Markham. Some of the invasive tree species reported in other parts of the GTA have not invaded Markham to the same degree, most notably Norway Maple, Black Alder, European Birch and Glossy Buckthorn. However, some of the invasive ground-layer species (Common Buckthorn, Dog-strangling Vine and Garlic-mustard) are common and widespread, though they have not become as pervasive as they are within the GTA.

Most of the wetlands and woodlands, and the habitat for significant species that they support, are protected within the Greenway System. Grasslands largely occur within the eastern part of the Greenway System, within the Rouge River Urban Park.

## **11.2. Recommendations**

### **11.2.1. Inclusion of Areas and Adjustments in the Greenway System**

The Greenway System encompasses approximately 33 percent of the land base in Markham, comprised of Natural Heritage Network lands, Natural Heritage Network Enhancement Lands, Rouge Watershed Protection Area lands, Oak Ridges Moraine Conservation Plan Area lands, Greenbelt Plan Area lands and certain naturalized stormwater management facilities as identified in Markham's Official Plan (2014).

It is recommended that the City review the natural heritage data provided in the study against the City's current database, particularly the ELC and wetland data (including MNRF's recent wetland mapping provided in Appendix 5) and determine where adjustments to the Greenway System should be considered in the next review of the Official Plan. Opportunities should particularly be sought to incorporate all wetlands outside the Greenway System into the System, including those mapped by MNRF in Appendix 5. If possible, opportunities should be explored to link isolated portions of the Greenway System. For example, the isolated evaluated wetlands at Milnesville Swamp could be connected to the northeast with the Mount Joy Creek and Little Rouge Creek corridors. East-west linkages should be created where opportunities exist. For example, there is a major east-west connection north of Elgin Mills Road in the north between the Bruce Creek, Berczy Creek, Robinson Creek and Little Rouge River. The City should continue to support and actively implement the major east-west ecological corridor identified as Natural Heritage Network Enhancement Lands: Core linkage Enhancements in the Official Plan 2014.



It is also recommended that the City consider a policy protection framework for the most significant areas of successional lands remaining in the City, as successional habitat is associated with additional faunal diversity, especially of open- or thicket-nesting bird species that are declining due to habitat loss. Criteria would need to be developed and protection of successional areas would need to be balanced against other municipal priorities for growth management. In addition, it would need to be recognized that maintenance of successional areas may be inappropriate in many successional areas as prior to settlement, most of Markham was likely forested, with few areas remaining naturally open unless maintained by fire or indigenous people. Maintenance of successional vegetation may be prohibitively labour-intensive in the long term. The management of successional areas may be most appropriate as interim management (for example, to remove non-native invasive shrubs) prior to their succession to forest. With this in mind, successional areas could include areas strategically located to contribute to forest function, such as larger buffers and stormwater management areas. Criteria within the Ecoregion Schedules for Ecoregion 6E and 7E may provide guidance on successional areas to consider, such as grassland areas of 30 ha or larger and thickets of 10 ha or larger. The City should review opportunities where these lands could support locations identified in the Official Plan for natural heritage core area and/or core linkage enhancement lands. The City should also review where successional lands overlap the Greenway System and adjacent tablelands and explore feasible options to expand the Greenway System to include successional lands. It is recognized that Markham experiences high growth pressures and that successional landscapes are not identified as significant by the Province, but with Markham's generally low forest cover, successional lands can play a vital role in enhancing overall natural heritage function and contributing to biodiversity over time.

### **11.2.2. Management of Biodiversity Hotspots**

It is recommended that the City prioritize formal identification, monitoring and management of sites of high biological diversity to maintain their integrity. The City should consider maintaining a data base on biodiversity hot spots through acceptance of EIS and other environmental studies.

### **11.2.3. Non-native invasive Species Management Plan for the City of Markham**

The City of Markham has an ongoing partnership program with TRCA to manage certain invasive species. Currently, noxious weeds such as Giant Hogweed, Poison Ivy and Wild Parsnip are managed in high-risk areas and a pilot project to control Dog strangling vine has been undertaken over the past two years through the release of a biological control agent. The City should review the data obtained through this study and determine if any changes or enhancements to the management programs including locations would be warranted. A non-native invasive species management plan should include the following elements:

- Monitoring for non-native species that are highly invasive in other parts of the GTA, but are not commonly found in Markham, such as Norway Maple, Black Alder, European Birch and Glossy



Buckthorn. Priorities should be developed for management of these species before they become more pervasive.

- Management of highly invasive species such as Common Buckthorn, Garlic-mustard and Dog-strangling Vine, in the areas of highest quality and areas with a high concentration of significant species where habitat is potentially threatened by non-native species.
- Particular attention should be paid to invasive species that are presented in isolated patches and to begin replacing the dominant buckthorn understory in the woodlands with appropriate native equivalents to protect the future health of these systems.

#### **11.2.4. Edge Management and Encroachment Plan**

The study team identified many occurrences of encroachment of private uses onto public lands including mowing, cutting and dumping. Edge management should be considered in the areas where encroachment is threatening natural features and ecological function. Edge management could include, for example:

- Fencing adjacent to areas of encroachment;
- Planting of species that screen natural areas from physical edge effects such as Eastern White Cedar and dense shrubs;
- Providing information to landowners that back on to natural areas, to inform them of the sensitivity of the natural heritage beyond their boundaries; and
- Enforcement where landowners have altered the landscape behind their boundaries, placed pipes to conduct swimming pool water into the natural system, constructed sheds and other structures, etc.

Minimizing trails in the Greenway system and revising trail strategies to limit the impacts of future trails is strongly advised. Where development is occurring adjacent to natural areas, trails should be planned outside of the buffers, or at a minimum, at the outermost extent of the buffers where there are space constraints.

Where new development is proposed, the impacts of encroachment and degradation due to edge effects should be rigorously considered, and scientific rationale required for reduction in buffer widths. The current standards with regards to buffers to natural features should be considered as the minimum requirement and it is recommended that policy be developed to encourage the expansion of the buffers where possible. It is recommended that the City develop enforcement tools to manage encroachment and edge effects on city-owned natural areas.

#### **11.2.5. Long-term Monitoring Framework**

Monitoring program are a significant tool to ensure the long-term health and sustainability of natural areas. Overuse, trampling and invasive species can quickly damage the integrity of natural areas. Ongoing monitoring should ensure problems and impacts can be identified early and addressed quickly creating a cost-effective management system for protected public spaces. A long-term



monitoring plan that includes compliance and effectiveness monitoring should be developed as noted in Section 10.

### **11.2.6. Improve Connections across Roads**

Markham has numerous existing and planned road crossings across the Greenway System. Road-kill was not surveyed in this study, but animal movement is highly constrained in Markham to follow linear corridors along watercourses, and is likely to become more constrained as urbanization proceeds, as farmland is developed. Roads will become busier. Animal movement across roads will certainly increase. Road-kill is a major impact of roads, particularly for amphibians (Puky 2005) and small to medium sized mammals, but also for birds (e.g. Forman and Alexander 1998).

Where road upgrades are required, these opportunities could be used to increase the safety of road crossings for animal species. As noted in Section 10, selected major road crossings across the Greenway System should be monitored to provide a baseline for road mortality. Opportunities should be sought for future road crossings to incorporate span bridges, crossing structures and oversized culverts where feasible. It is recommended that the City work with the conservation authorities and transportation agencies to review priorities and opportunities to address road mortality and provide for wildlife crossing where necessary.

### **11.2.7. Restoration of Natural Cover**

The City should continue efforts to restore natural heritage features to increase natural cover. The focus of the City and TRCA has been on woodland and wetland restoration. Woodland restoration should build upon existing forest patches to increase both size and shape of woodland patches to support birds/species that rely on interior forest habitat. As noted above, grassland restoration is recommended where grasslands could be retained to enhance diversity of adjacent habitat, though likely as an interim measure, as maintenance of grasslands may only occur with dedicated resources. Wetland restoration should focus on low-lying areas that can most easily be converted into wetlands and on expanding existing wetlands. Many wetlands in Markham have a fringe of wet soils that are periodically ploughed on drier years that could easily be restored back to wetland.

Amphibian habitat restoration should be incorporated to future improvement efforts to try and address the low numbers of calling amphibians.

### **11.2.8. Review of Targets**

The City of Markham should review existing natural heritage targets established by senior levels of government and determine appropriate local targets to ensure the continued protection and enhancement of natural features.



## 12. References

- BhaduriHauck, S. Toxic plant profile: Black Walnut. University of Maryland Extension notes accessed March 2021. <https://extension.umd.edu/learn/toxic-plant-profile-black-walnut>.
- Bakowsky, Wasyl. 2021. Personal Communication. Natural Heritage Information Centre, Peterborough, Ontario.
- Beacon Environmental Limited. 2017. Natural Environment Report/ Environmental Impact Study in support of a Master Environmental Servicing Plan 4134 16<sup>th</sup> Avenue.
- Bird Studies Canada. 2009. Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. Bird Studies Canada, Environment Canada, and United States Environmental Protection Agency.
- Cadman, M., Sutherland, D., and Beck, G. 2007. Atlas of the Breeding Birds of Ontario: 2001-2005. Bird Studies Canada. 728pp.
- City of Markham. 2014. Markham Official Plan April 9, 2018 Office Consolidation.
- Crins, W. J., Gray, P. A., Uhlig, P. W. C., and Wester, M. C. 2009. The ecosystems of Ontario, Part 1: ecozones and ecoregions. MNR Technical Report. 76pp.
- Dillon Consulting. 2020. Environmental Impact Study for a portion of the property located at 10192 Ninth Line, City of Markham.
- Environment Canada Ontario Forest Bird Monitoring Program, 2018 protocols
- Environment Canada. 2013. How much habitat is enough? Third Edition. Environment Canada, Toronto, Ontario.
- Forman, R.T. and L.E. Alexander. 2012. Roads and Their Major Ecological Effects. Annual Review of Ecology and Systematics, Vol. 29 (1998), pp. 207-231+C2.
- Gore and Storrie Limited. 1992. 1991 Inventory results: Phase 1 Background Report (published 1992). Report for the City of Markham. In association with Hough Stansbury Woodland Limited, Lehman & Associates, and Garrod Associates.
- Gore and Storrie Limited. 1993. Phase 2 Implementation Report. Report for the City of Markham. In association with Hough Stansbury Woodland Limited, Lehman & Associates, and Garrod Associates.
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry



of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

North-South Environmental Inc. 2016. Natural Heritage and Hydrologic Study – Milliken Secondary Plan Area.

Oldham, M. J., Bakowsky, W. D., and Sutherland, D. A. 1995. Floristic quality assessment system for southern Ontario. Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. 69pp.

Oldham, M.J. 2017. List of the Vascular Plants of Ontario's Carolinian Zone. Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario.

Ontario Breeding Bird Atlas. 2001. Guide for Participants. Atlas Management Board, Federation of Ontario Naturalists, Don Mills.

Ontario Ministry of Natural Resources (MNR). 2000. Significant Wildlife Habitat Technical Guide. Ontario Ministry of Natural Resources, Peterborough, Ontario.

Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. 248pp.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario.

Puky, M. 2005. Amphibian road kills: a global perspective. Wildlife Impacts and Conservation Solutions. Accessed March 2021 at <https://escholarship.org/uc/item/7j7546qv>.

Savanta A GEI Company & Beacon Environmental Limited. 2019. Angus Glen MESP Re-Submission Letter Warden Nursery, Angus Glen Block, North Markham Future Urban Area.

Strojny, C., and Hunter, M. 2010. Log diameter influences detection of eastern red-backed salamanders (*Plethodon cinereus*) in harvest gaps, but not in closed-canopy forest conditions. Herpetological Conservation and Biology. 5. 80-85pp.

Varga, S., Leadbeater, D., Webber, J., Kaiser, J., Crins, B., Kamstra, J., Banville, D., Ashley, E., Miller, G., Kingsley, C., Jacobsen, C., Mewa, K., Tebby, L., Mosley, E., and Zajc, E. 2005. The Distribution and Status of the Vascular Plants of the Greater Toronto Area. Ontario Ministry of Natural Resources, Aurora, ON. 103 pp

Voss, E.G., and Reznicek A. A. 2012. Field manual of Michigan flora. The University of Michigan Press, Ann Arbor, Michigan. 990pp.



## **APPENDIX 1** | Species Status Ranks and Field Survey Information



Appendix page



## Species Status Ranks

### G Rank      Global Conservation Rank

- GX**      Presumed Extinct (species) – Not located despite intensive searches and virtually no likelihood of rediscovery.
- Presumed Collapsed (ecosystems, i.e., ecological communities and systems) – Collapsed throughout its range, due to loss of key dominant and characteristic taxa and/or elimination of the sites and ecological processes on which the type depends
- GH**      Possibly Extinct (species) or Possibly Collapsed (ecosystems) – Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or collapsed throughout its range.
- G1**      Critically Imperiled – At very high risk of extinction or collapse due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- G2**      Imperiled – At high risk of extinction or collapse due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- G3**      Vulnerable – At moderate risk of extinction or collapse due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- G4**      Apparently Secure – At fairly low risk of extinction or collapse due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- G5**      Secure – At very low risk of extinction or collapse due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.



## **S Rank      Provincial Rank**

- S1      Critically Imperiled in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
- S2      Imperiled in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.
- S3      Vulnerable in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4      Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors. S5 Secure—Common, widespread, and abundant in Ontario.
- SX      Presumed Extirpated – Species or community is believed to be extirpated from Ontario.
- SH      Possibly Extirpated – Species or community occurred historically in Ontario and there is some possibility that it may be rediscovered.
- SNR      Unranked—Conservation status in Ontario not yet assessed
- SU      Unrankable—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA      Not Applicable –A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

## **COSEWIC (Committee on the Status of Endangered Wildlife in Canada):**

- END      Endangered – A wildlife species facing imminent extirpation or extinction.
- THR      Threatened – A wildlife species likely to become endangered if limiting factors are not reversed.
- SC      Special Concern – A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
- NAR      Not At Risk – A wildlife species that has been evaluated and found to be not a risk of extinction given the current circumstances.



### **SARA Species at Risk Act - Schedules (1), (2), (3)**

- END    Endangered – A species that is facing imminent extirpation or extinction.
- THR    Threatened – A species that is likely to be endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
- SC    Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

### **ESA Endangered Species Act**

- END    Endangered – Lives in the wild in Ontario but is facing imminent extinction or extirpation.
- THR    Threatened – Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
- SC    Special Concern – lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.

### **TRCA (Toronto Region Conservation Authority)**

From: Toronto and Region Conservation. 2007. Terrestrial Natural Heritage System Strategy.

L rank (Local Rank) – A rank assigned by TRCA to a species, vegetation community, or habitat patch which describes its rank and level of conservation concern in the TRCA Region. Local rank of L1 to L3 is a species of concern, according to the TRCA methodology.

Rank level of conservation concern of flora and fauna in TRCA Region (TRCA 2007)

- L5    Generally secure; may be a conservation concern in a few specific situations. Contributes to natural cover. Able to withstand high levels of disturbance, generally secure throughout the jurisdiction, including the urban matrix.
- L4    Of concern in urban matrix; generally secure in rural matrix; able to withstand some disturbance.
- L3    Of concern regionally; generally secure in natural matrix; able to withstand minor disturbance.
- L2    Of concern regionally; probably rare in TRCA jurisdiction; generally occur in high-quality natural areas, in natural matrix; unable to withstand disturbance.



- L1 Of concern regionally; almost certainly rare in TRCA jurisdiction; generally occur in high-quality natural areas, in natural matrix; unable to withstand disturbance.
- LX Extirpated from the TRCA region with remote chance of rediscovery. Presumably highly sensitive. Not scored.
- LH Hybrid between two native species. Usually not scored unless highly stable and behaves like a species.
- L+ Exotic. Not native to TRCA jurisdiction. Includes hybrids between a native species and an exotic. Not scored.
- L+? Origin uncertain or disputed, (i.e. may or may not be native). Not scored.

### **Greater Toronto Area (GTA) Rank - City of Toronto Plant List**

From: Varga, S., Leadbeater, D., Webber, J., Kaiser, J., Crins, B., Kamstra, J., Banville, D., Ashley, E., Miller, G., Kingsley, C., Jacobsen, C., Mewa, K., Tebby, L., Mosley, E., and Zajc, E. 2000. The Distribution and Status of the Vascular Plants of the Greater Toronto Area. Ontario Ministry of Natural Resources, Aurora, ON. 103 pp.

"Plant rarity is based on the number of locations for a native plant species" and also takes into account native species restricted to specialized rare habitats. For the Greater Toronto Area column, "A species is considered rare in the Greater Toronto Area if it is rare or uncommon in a least four of... Halton, Peel, Toronto, York, and Durham".

Codes are defined as follows:

- X Present
- U Uncommon native species
- R Rare native species
- R# Number of stations for a rare native species
- E Extirpated native species
- + or I Introduced species
- X+ Introduced in municipality
- SR Sight record
- LR Literature record



### RM York - Local Status

From: Varga, S., Leadbeater, D., Webber, J., Kaiser, J., Crins, B., Kamstra, J., Banville, D., Ashley, E., Miller, G., Kingsley, C., Jacobsen, C., Mewa, K., Tebby, L., Mosley, E., and Zajc, E. 2000. The Distribution and Status of the Vascular Plants of the Greater Toronto Area. Ontario Ministry of Natural Resources, Aurora, ON. 103 pp

U      Uncommon

R1-R10 Rarity Status (1-10 denotes number of stations at which a locally rare species is found ) (Varga et al. 2000).



**Table A1-1. Ecological Land Classification (ELC), Disturbance Assessment, and Detailed Botanical Survey.**

Survey Date	Surveyor 1	Surveyor 2	Polygon ID	Survey Type
May-27-20	Christina Myrdal	Summer Graham	1.29, 1.30, 1.31, 1.67, 2.12, 2.13	ELC, Disturbance Assessment
May-29-20	Sarah Mainguy		1.02, 1.65, 1. 73	ELC, Disturbance Assessment, Detailed Botany
June-01-20	Sarah Mainguy		1.19, 1.58, 1.64	ELC, Disturbance Assessment, Detailed Botany
June-02-20	Mary Anne Young	Other	1.03, 1.04, 1.05, 1.06, 1.07, 1.08, 1.16, 2.02	ELC, Disturbance Assessment
June-03-20	Christina Myrdal	Summer Graham	2.11	ELC, Disturbance Assessment
June-04-20	Carl-Adam Wegenschimmel	Other	1.09, 1.10, 1.17, 1.74, 1.76, 2.03	ELC
June-04-20	Grace Pitman		1.58, 1.59, 1.91	ELC, Disturbance Assessment, Detailed Botany
June-05-20	Grace Pitman		1.54, 1.55, 1.56	ELC, Disturbance Assessment, Detailed Botany
June-08-20	Christina Myrdal	Summer Graham	1.34, 1.37, 1.39, 1.81	ELC, Disturbance Assessment
June-11-20	Christina Myrdal	Summer Graham	1.35, 1.36, 1.40, 1.41, 1.42	ELC, Disturbance Assessment
June-11-20	Sarah Mainguy		1.71, 1.070	ELC, Disturbance Assessment, Detailed Botany
June-12-20	Grace Pitman		1.63	ELC, Disturbance Assessment
June-12-20	Heather Schibli	Other	1.11, 1.12, 1.13, 1.18	ELC, Disturbance Assessment
June-12-20	Grace Pitman		1.47, 1.63, 1.64, 1.83, 1.84	ELC, Disturbance Assessment, Detailed Botany
June-12-20	Heather Schibli	Other	1.98	ELC, Disturbance Assessment
June-12-20	Sarah Mainguy		1.070, 1.45, 1.71	ELC, Disturbance Assessment, Detailed Botany
June-18-20	Mary Anne Young	Other	1.22, 1.96, 1.97, 1.14, 1.23	ELC, Disturbance Assessment
June-19-20	Grace Pitman		1.48, 1.49, 1.87, 1.88, 1.89, 1.90	ELC, Disturbance Assessment, Detailed Botany
June-19-20	Mary Anne Young	Other	1.14	ELC, Disturbance Assessment
June-25-20	Christina Myrdal	Summer Graham	1.15	ELC, Disturbance Assessment
June-25-20	Grace Pitman		1.85, 1.86, 1.93, 1.94, 1.95	ELC, Disturbance Assessment
June-26-20	Sarah Mainguy		1.62	ELC, Disturbance Assessment, Detailed Botany



Survey Date	Surveyor 1	Surveyor 2	Polygon ID	Survey Type
July-02-20	Izabela Van Amelsvoort		1.21, 1.50, 1.53, 1.72	ELC, Disturbance Assessment
July-17-20	Sarah Mainguy		1.70	ELC, Disturbance Assessment, Detailed Botany
July-24-20	Izabela Van Amelsvoort		1.43, 1.44, 1.46	ELC, Disturbance Assessment
July-24-20	Sarah Mainguy		1.70, 1.71, 2.71	ELC, Disturbance Assessment, Detailed Botany
July-30-20	Carl-Adam Wegenschimmel	Summer Graham	1.24, 1.25, 1.26, 1.27, 1.79	ELC, Disturbance Assessment
July-30-20	Izabela Van Amelsvoort		1.21, 1.50, 1.53, 1.72	ELC, Disturbance Assessment
July-31-20	Grace Pitman		1.20, 1.66, 1.68	ELC, Disturbance Assessment
August-03-20	Sarah Mainguy		1.070, 1.45	ELC, Disturbance Assessment, Detailed Botany
August-05-20	Grace Pitman		1.51, 1.57, 1.60, 1.61	ELC, Disturbance Assessment
August-05-20	Izabela Van Amelsvoort		1.106, 1.52	ELC, Disturbance Assessment, Detailed Botany
August-06-20	Summer Graham	Christina Myrdal	1.28, 1.77	ELC, Disturbance Assessment
August-12-20	Grace Pitman		1.68, 1.82	ELC, Disturbance Assessment
August-20-20	Izabela Van Amelsvoort		1.69, 2.27	ELC, Disturbance Assessment, Detailed Botany
September-04-20	Sarah Mainguy		1.070, 1.75	ELC, Disturbance Assessment, Detailed Botany
September-20-20	Sarah Mainguy		1.65, 1.73, 1.02	ELC, Disturbance Assessment, Detailed Botany

Table A1-2. Breeding Bird Survey information.

Survey Date	Surveyor	Survey Type	Station ID or Area Search Number	Visit Number	Air Temperature (°C)	Wind Direction	Beaufort Wind Scale	Precipitation	Cloud Cover Percentage	Noise Index	Start Time	Finish Time
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	216	1	22		0	NoneDry	1	0	07:10	07:20
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	224	1	22		1	NoneDry	1	1	07:52	08:02
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	222	1	22		0	NoneDry	2	1	08:26	
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	223	1	23		0	NoneDry	1	1	09:00	



Survey Date	Surveyor	Survey Type	Station ID or Area Search Number	Visit Number	Air Temperature (°C)	Wind Direction	Beaufort Wind Scale	Precipitation	Cloud Cover Percentage	Noise Index	Start Time	Finish Time
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	221	1	24		0	NoneDry	1	4	09:34	
May-25-20	Carl-Adam Wegenschimmel	BBS Point Count	219	1	18		0	NoneDry	2	1	06:38	06:48
May-26-20	Carl-Adam Wegenschimmel	BBS Point Count	215	1	19		0	NoneDry	1	2	05:32	05:42
May-26-20	Carl-Adam Wegenschimmel	BBS Area Search	212	1	21		0	NoneDry	2	1	06:11	07:10
May-26-20	Carl-Adam Wegenschimmel	BBS Area Search	203	1	24		0	NoneDry	1	1	07:31	08:08
May-26-20	Carl-Adam Wegenschimmel	BBS Area Search	204	1	25		0	NoneDry	1	1	08:50	09:50
May-27-20	Sarah Mainguy	BBS Area Search	220	1	25	N	3	NoneDry	10	1	12:43	13:35
May-27-20	Sarah Mainguy	BBS Area Search	214	1	22	N	3	NoneDry	0	1	09:21	11:47
May-27-20	Sarah Mainguy	BBS Point Count	214	1	22	N	2	NoneDry	0	1	09:08	09:19
May-27-20	Sarah Mainguy	BBS Area Search	220	1	22		0	NoneDry	3	1	05:56	08:07
May-29-20	Grace Pitman	BBS Point Count	225	1	23	SW	2	NoneDry	7	2	09:38	09:48
May-29-20	Grace Pitman	BBS Area Search	225	1	23	SW	2	NoneDry	7	2	09:30	10:20
May-31-20	Sarah Mainguy	BBS Area Search	206	1	11		2	NoneDry	0	1	08:20	11:25
May-31-20	Sarah Mainguy	BBS Point Count	206	1	11	E	3	NoneDry	0	1	08:53	
May-31-20	Sarah Mainguy	BBS Area Search	206	1	8		2	NoneDry	1	1	06:26	
May-31-20	Sarah Mainguy	BBS Point Count	206	1	8		1	NoneDry	5	1	06:13	
June-01-20	Sarah Mainguy	BBS Area Search	201	1	13	NW	1	NoneDry	5	2	08:54	09:05
June-01-20	Sarah Mainguy	BBS Point Count	207	1	13		2	NoneDry	3	0	09:19	
June-01-20	Sarah Mainguy	BBS Area Search	208	1	15	NE	1	NoneDry	1	1	10:04	11:11
June-01-20	Sarah Mainguy	BBS Area Search	211	1	12		0	NoneDry	0	2	07:51	08:43
June-01-20	Sarah Mainguy	BBS Area Search	213	1	11		0	NoneDry	0	2	06:18	
June-01-20	Sarah Mainguy	BBS Point Count	213	1	11		0	NoneDry	0	1	05:47	06:01



Survey Date	Surveyor	Survey Type	Station ID or Area Search Number	Visit Number	Air Temperature (°C)	Wind Direction	Beaufort Wind Scale	Precipitation	Cloud Cover Percentage	Noise Index	Start Time	Finish Time
June-05-20	Sarah Mainguy	BBS Area Search	209	1	22		0	NoneDry	1	1	07:30	
June-05-20	Sarah Mainguy	BBS Area Search	227	1	20		0	NoneDry	1	1	06:45	07:15
June-05-20	Sarah Mainguy	BBS Area Search	218	1	19		0	NoneDry	1	0	08:58	
June-05-20	Sarah Mainguy	BBS Area Search	210	1	22		0	NoneDry	1	1	10:02	12:55
June-05-20	Sarah Mainguy	BBS Point Count	210	1	20		0	NoneDry	1	1	09:51	10:02
June-05-20	Sarah Mainguy	BBS Point Count	218	1	19		0	NoneDry	1	0	08:44	08:54
June-05-20	Sarah Mainguy	BBS Point Count	227	1	20		0	NoneDry	1	1	06:45	
June-05-20	Sarah Mainguy	BBS Point Count	228	1	18	NE	1	NoneDry	1	3	05:42	06:19
June-12-20	Sarah Mainguy	BBS Area Search	220	2	15	NE	3	NoneDry	0	1	09:53	
June-12-20	Sarah Mainguy	BBS Area Search	202	1	14	W	3	NoneDry	0	1	06:06	07:36
June-18-20	Carl-Adam Wegenschimmel	BBS Point Count	221	2	26		0	NoneDry	0	1	08:29	
June-18-20	Carl-Adam Wegenschimmel	BBS Point Count	219	2	22	N	0	NoneDry	0	1	07:51	
June-18-20	Carl-Adam Wegenschimmel	BBS Point Count	216	2	20	N	0	NoneDry	1	1	07:19	
June-18-20	Carl-Adam Wegenschimmel	BBS Point Count	226	2	20		0	NoneDry	0	1	06:52	07:02
June-18-20	Carl-Adam Wegenschimmel	BBS Area Search	212	2	18		0	NoneDry	0	1	05:21	
June-26-20	Carl-Adam Wegenschimmel	BBS Point Count	223	2	20		0	NoneDry	2	1	07:35	07:45
June-26-20	Carl-Adam Wegenschimmel	BBS Point Count	222	2	20		0	NoneDry	1	1	07:00	07:10
June-26-20	Carl-Adam Wegenschimmel	BBS Area Search	204	2	18		0	NoneDry	10	1	05:27	
June-26-20	Sarah Mainguy	BBS Area Search	202	2	23	NW	3	NoneDry	1	2	09:37	14:43
June-26-20	Sarah Mainguy	BBS Area Search	205	2	16		0	NoneDry	1	2	07:32	09:12
June-26-20	Sarah Mainguy	BBS Point Count	205	2	20		0	NoneDry	1	1	08:13	08:23
June-26-20	Sarah Mainguy	BBS Area Search	220	2	22	NE	1	NoneDry	2	1	06:07	07:09







**Table A1-3. Reptile and Incidentals Survey information.**

Survey Date	Surveyor	Start Time	Finish Time	Station ID	Visit Number	Air Temperature (°C)	Beaufort Wind Scale	Wind Direction	Precipitation	Cloud Cover (10ths)	Noise Index	Species Present?
May-25-20	Carl-Adam Wegenschimmel	10:20	10:41	101	1	24	0			0	1	Yes
May-25-20	Carl-Adam Wegenschimmel	11:16	11:47	103	1	25	0		None/Dry	0	1	Yes
May-29-20	Sarah Mainguy	14:30	14:45	1.65	1	---	---		---	---	---	Yes
May-29-20	Sarah Mainguy	10:50	11:00	1.73	1	0	0		None/Dry	0	0	Yes
May-29-20	Grace Pitman	10:45	11:05	102	1	23	3	SW	None/Dry	9	2	No
June-01-20	Sarah Mainguy	12:50	13:00	1.58	1	---	---		---	---	---	Yes
June-01-20	Grace Pitman	12:55	13:30	1.64	1	---	---		---	---	---	Yes
June-04-20	Sarah Mainguy	08:22	08:45	1.58	1	---	---		---	---	---	Yes
June-04-20	Grace Pitman	08:50	09:00	1.59	1	---	---		---	---	---	Yes
June-04-20	Grace Pitman	08:56	09:00	1.91	1	---	---		---	---	---	Yes
June-04-20	Grace Pitman	14:32	14:54	101	1	29	3	W	None/Dry	6	2	No
June-04-20	Grace Pitman	13:10	13:55	102	2	29	2	SW	None/Dry	5	2	Yes
June-04-20	Grace Pitman	15:18	15:35	103	1	29	3	NW		8	2	No
June-05-20	Sarah Mainguy	14:44	15:15	1.070	1	---	---		---	0	0	Yes
June-05-20	Grace Pitman	08:38	08:45	1.54	1	---	---		---	---	---	Yes
June-05-20	Grace Pitman	14:03	14:15	1.55	1	---	---		---	---	---	Yes
June-11-20	Sarah Mainguy	14:10	14:30	1.45	1	---	---		---	---	---	Yes
June-11-20	Sarah Mainguy	10:30	10:45	1.71	1	---	---		---	---	---	Yes
June-12-20	Grace Pitman	13:31	14:15	1.47	1	---	---		---	---	---	Yes
June-12-20	Grace Pitman	09:37	09:45	1.63	1	---	---		---	---	---	Yes
June-12-20	Grace Pitman	09:24	09:30	1.83	1	---	---		---	---	---	Yes
June-12-20	Grace Pitman	09:09	09:15	1.84	1	---	---		---	---	---	Yes
June-18-20	Carl-Adam Wegenschimmel	09:01	09:30	101	2	27	0		None/Dry	0	1	Yes
June-18-20	Carl-Adam Wegenschimmel	09:40	10:00	103	2	27	0		None/Dry	0	1	Yes
June-19-20	Grace Pitman	13:18	13:30	1.49	1	---	---		---	---	---	Yes
June-26-20	Carl-Adam Wegenschimmel	07:59	08:33	101	3	25	0		None/Dry	0	1	Yes
June-26-20	Carl-Adam Wegenschimmel	08:46	08:56	103	3	25	0		None/Dry	0	1	Yes
July-17-20	Sarah Mainguy	09:49	10:30	1.70	1	---	---		---	---	---	Yes
August-12-20	Grace Pitman	08:43	09:00	1.82	1	---	---		---	---	---	Yes
August-26-20	Izabela van Amelsvoort	11:07	11:15	2.27	1	---	---		---	---	---	Yes
September-04-20	Sarah Mainguy	11:00	11:15	1.75	1	---	---		---	---	---	Yes
September-20-20	Sarah Mainguy	11:39	12:00	1.02	2	---	---		---	---	---	Yes



**Table A1-4. Nocturnal Animals Survey information.**

Survey Date	Surveyor 1	Surveyor 2	Station ID	Visit Number	Air Temperature (°C)	Beaufort Wind Scale	Kestrel Wind Speed	Wind Direction	Precipitation	Cloud Cover (10ths)	Noise Index	Start Time	Finish Time	Species Present
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	35	1	12	1		NE	None/Dry	1	2	20:45	20:51	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	36	1	12	1		NE	None/Dry	4	3	21:00	21:06	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	34	1	12	0			None/Dry	4	1	21:24	21:30	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	11	1	13	1		NE	None/Dry	4	2	21:47	21:53	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	29	1	13	1		NE	None/Dry	0	2	22:04	22:10	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	6	1	13	1		NE	None/Dry	0	1	22:22	22:28	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	13	1	12	1		NE	None/Dry	0	2	22:39	22:45	YES
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	14	1	12	0			None/Dry	2	2	23:00	23:06	NO
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	27	1	12	1		NE	None/Dry	4	1	23:19	23:25	YES
April-27-20	Christina Myrdal	Carl-Adam Wegenschimmel	28	1	12	0			None/Dry	1	1	23:37	23:43	YES
April-27-20	Grace Pitman	Kristen Pott	21	1	11	2	3	NE	None/Dry	0	1	20:59	21:03	NO
April-27-20	Grace Pitman	Kristen Pott	12	1	11	2	3	NE	None/Dry	0	1	21:10	21:15	YES
April-27-20	Grace Pitman	Kristen Pott	17	1	11	2	3	NE	None/Dry	0	2	21:33	21:39	NO
April-27-20	Grace Pitman	Kristen Pott	24	1	9	2	3	NE	None/Dry	1	2	21:43	21:48	NO
April-27-20	Grace Pitman	Kristen Pott	25	1	9	1	3	NE	None/Dry	1	2	22:04	22:05	NO
April-27-20	Grace Pitman	Kristen Pott	23	1	9	1	3	NE	None/Dry	1	3	22:13	22:18	NO
April-27-20	Grace Pitman	Kristen Pott	16	1	6	0	3		None/Dry	0	1	22:39	22:45	NO
April-27-20	Grace Pitman	Kristen Pott	20	1	8	1	3	NE	None/Dry	3	2	22:59	23:05	NO
April-27-20	Grace Pitman	Kristen Pott	22	1	8	0	3		None/Dry	8	2	23:15	23:20	NO
April-27-20	Grace Pitman	Kristen Pott	19	1	7	0	0		None/Dry	4	1	23:35	23:41	YES
April-28-20	Christina Myrdal	Summer Graham	15	1	10	2		NE	None/Dry	8	1	20:48	20:54	NO
April-28-20	Christina Myrdal	Summer Graham	3	1	10	1		NE	None/Dry	4	1	21:04	21:10	NO
April-28-20	Christina Myrdal	Summer Graham	1	1	10	0			None/Dry	6	1	21:25	21:31	NO



Survey Date	Surveyor 1	Surveyor 2	Station ID	Visit Number	Air Temperature (°C)	Beaufort Wind Scale	Kestrel Wind Speed	Wind Direction	Precipitation	Cloud Cover (10ths)	Noise Index	Start Time	Finish Time	Species Present
April-28-20	Christina Myrdal	Summer Graham	2	1	10	1		NE	None/Dry	4	2	21:36	21:41	NO
April-28-20	Christina Myrdal	Summer Graham	5	1	10	0			None/Dry	4	1	21:54	22:01	NO
April-28-20	Christina Myrdal	Summer Graham	4	1	9	1		NE	None/Dry	8	1	22:06	22:12	NO
April-28-20	Christina Myrdal	Summer Graham	9	1	10	0			None/Dry	6	1	22:28	22:34	NO
April-28-20	Christina Myrdal	Summer Graham	10	1	9	1		NE	None/Dry	6	3	22:45	22:51	NO
April-30-20	Grace Pitman	Kristen Pott	26	1	11	0	0		None/Dry	0	1	20:55	21:01	YES
April-30-20	Grace Pitman	Kristen Pott	37	1	11	1	3	NE	None/Dry	10	1	21:27	21:35	YES
April-30-20	Grace Pitman	Kristen Pott	33	1	10	1	5	NW	None/Dry	10	1	22:10	22:13	NO
April-30-20	Grace Pitman	Kristen Pott	32	1	10	1	5	NW	None/Dry	10	2	22:25	22:28	NO
April-30-20	Grace Pitman	Kristen Pott	18	1	10	1	2	W	None/Dry	10	0	22:43	22:51	NO
April-30-20	Grace Pitman	Kristen Pott	30	1	10	1	3	W	None/Dry	10	1	23:07	23:14	NO
April-30-20	Grace Pitman	Kristen Pott	31	1	10	2	5	W	None/Dry	10	1	23:17	23:22	NO
May-01-20	Grace Pitman	Kristen Pott	8	1	10	1	3	W	None/Dry	10	0	00:04	00:08	NO
May-21-20	Kristen Pott	Devin Bettencourt	26	2	20	1	7	E	None/Dry	0	2	20:51	20:57	YES
May-21-20	Kristen Pott	Devin Bettencourt	37	2	17	1	7	E	None/Dry	0	2	21:17	21:21	YES
May-21-20	Kristen Pott	Devin Bettencourt	33	2	16	1	7	E	None/Dry	0	3	21:41	21:43	YES
May-21-20	Kristen Pott	Devin Bettencourt	32	2	15	1	7	E	None/Dry	0	2	21:57	22:00	NO
May-21-20	Kristen Pott	Devin Bettencourt	18	2	14	1	7	S	None/Dry	0	1	22:18	22:23	YES
May-21-20	Kristen Pott	Devin Bettencourt	19	2	12	1	7	S	None/Dry	0	1	22:41	22:44	YES
May-21-20	Kristen Pott	Devin Bettencourt	22	2	12	1	3	SE	None/Dry	0	1	22:53	22:56	NO
May-21-20	Kristen Pott	Devin Bettencourt	20	2	14	1	2	SE	None/Dry	0	2	23:05	23:11	NO
May-21-20	Kristen Pott	Devin Bettencourt	31	2	13	1	2	E	None/Dry	0	2	23:19	23:23	YES
May-21-20	Summer Graham	Christina Myrdal	15	2	14	0			None/Dry	0	1	21:14	21:20	NO
May-21-20	Summer Graham	Christina Myrdal	3	2	12	0			None/Dry	0	2	21:32	21:38	NO
May-21-20	Summer Graham	Christina Myrdal	1	2	13	0			None/Dry	0	1	21:54	22:00	NO
May-21-20	Summer Graham	Christina Myrdal	2	2	14	0			None/Dry	0	2	22:06	22:12	YES



Survey Date	Surveyor 1	Surveyor 2	Station ID	Visit Number	Air Temperature (°C)	Beaufort Wind Scale	Kestrel Wind Speed	Wind Direction	Precipitation	Cloud Cover (10ths)	Noise Index	Start Time	Finish Time	Species Present
May-21-20	Summer Graham	Christina Myrdal	5	2	14	0			None/Dry	0	1	22:26	22:32	NO
May-21-20	Summer Graham	Christina Myrdal	4	2	12	0			None/Dry	0	1	22:36	22:42	NO
May-21-20	Summer Graham	Christina Myrdal	9	2	13	0			None/Dry	0	1	22:56	23:02	NO
May-21-20	Christina Myrdal	Summer Graham	10	2	12	0			None/Dry	0	2	23:12	23:18	NO
May-21-20	Christina Myrdal	Summer Graham	6	2	14	0			None/Dry	0	1	23:40	23:46	YES
May-21-20	Summer Graham	Christina Myrdal	11	2	14	0			None/Dry	0	1	23:59	23:59	NO
May-27-20	Kristen Pott	Devin Bettencourt	7	1	24	0	6		None/Dry	0	0	21:09	21:14	YES
May-27-20	Kristen Pott	Devin Bettencourt	21	2	23	1	6	E	None/Dry	0	3	21:38	21:42	YES
May-27-20	Kristen Pott	Devin Bettencourt	12	2	23	1	6	E	None/Dry	0	1	21:47	21:51	YES
May-27-20	Kristen Pott	Devin Bettencourt	17	2	23	1	6	E	None/Dry	0	0	21:58	22:01	YES
May-27-20	Kristen Pott	Devin Bettencourt	24	2	22	0	6		None/Dry	0	1	22:09	22:12	NO
May-27-20	Kristen Pott	Devin Bettencourt	25	2	22	1	6	SE	None/Dry	0	1	22:21	22:25	NO
May-27-20	Kristen Pott	Devin Bettencourt	23	2	22	1	5	SE	None/Dry	0	1	22:34	22:37	YES
May-27-20	Kristen Pott	Devin Bettencourt	16	2	22	1	5	SE	None/Dry	0	1	22:50	22:53	NO
June-18-20	Christina Myrdal	Summer Graham	15	3	24	0			None/Dry	1	2	21:35	21:41	NO
June-18-20	Christina Myrdal	Summer Graham	1	3	23	0			None/Dry	3	2	21:52	21:58	YES
June-18-20	Christina Myrdal	Summer Graham	22	3	23	0			None/Dry	1	2	22:04	22:10	YES
June-18-20	Christina Myrdal	Summer Graham	27	3	21	0			None/Dry	7	1	22:28	22:34	YES
June-18-20	Christina Myrdal	Summer Graham	28	3	21	0			None/Dry	0	1	22:42	22:48	YES
June-18-20	Christina Myrdal	Summer Graham	14	3	21	0			None/Dry	1	2	23:08	23:14	YES
June-18-20	Christina Myrdal	Summer Graham	6	3	23	0			None/Dry	0	1	23:26	23:32	YES
June-18-20	Christina Myrdal	Summer Graham	13	3	20	0			None/Dry	0	1	23:41	23:47	YES



Survey Date	Surveyor 1	Surveyor 2	Station ID	Visit Number	Air Temperature (°C)	Beaufort Wind Scale	Kestrel Wind Speed	Wind Direction	Precipitation	Cloud Cover (10ths)	Noise Index	Start Time	Finish Time	Species Present
June-19-20	Christina Myrdal	Summer Graham	35	3	22	0			None/Dry	0	0	00:10	00:16	NO
June-19-20	Christina Myrdal	Summer Graham	36	3	21	0			None/Dry	0	1	00:27	00:33	NO
June-19-20	Grace Pitman	Kristen Pott	26	3	26	1	6	E	None/Dry	0	0	22:52	22:56	YES
June-19-20	Grace Pitman	Kristen Pott	17	3	22	0			None/Dry	0	1	22:59	23:05	YES
June-19-20	Grace Pitman	Kristen Pott	20	3	22	0			None/Dry	0	1	23:22	23:28	YES
June-20-20	Grace Pitman	Kristen Pott	25	3	28	0			None/Dry	0	1	22:50	22:56	YES
June-20-20	Grace Pitman	Kristen Pott	19	3	24	1	5	SE	None/Dry	0	1	23:03	23:07	YES
June-20-20	Grace Pitman	Kristen Pott	23	3	26	1		N	None/Dry	0	2	23:12	23:18	YES
June-20-20	Grace Pitman	Kristen Pott	31	3	24	1	5	SE	None/Dry	0	3	23:27	23:30	NO



## **APPENDIX 2 |** Vegetation Communities



Appendix page



Table A2-1. Ecosite Summaries of ELC and Detailed Botanical Surveys from the 2020 vegetation surveys.

Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
BLO1 - Open Bluff	1	0.3	Manitoba Maple ( <i>Acer negundo</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	---	Yellow Sweet-Clover ( <i>Melilotus officinalis</i> )	
			Eastern White Pine ( <i>Pinus strobus</i> )			Wild Carrot ( <i>Daucus carota</i> )	
			---			Canada Goldenrod ( <i>Solidago canadensis</i> )	
BBO - Open Beach	1	0.01	Arrowhead and Coltsfoot				
CUM - Cultural Meadow	40	25.4	Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Kentucky Bluegrass ( <i>Poa pratensis</i> )	
			Crack Willow ( <i>Salix x fragilis</i> )	Freeman's Maple ( <i>Acer x freemanii</i> )	Red-oiser Dogwood ( <i>Cornus sericea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			Sugar Maple ( <i>Acer saccharum</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Tall Goldenrod ( <i>Solidago altissima</i> )	
CUM1 - Mineral Cultural Meadow	38	63.7	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Red Elderberry ( <i>Sambucus racemose ssp. pubens</i> )	Smooth Brome ( <i>Bromus inermis</i> )	
			Black Walnut ( <i>Juglans nigra</i> )	Black Locust ( <i>Robinia pseudoacacia</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			Sugar Maple ( <i>Acer saccharum</i> ).	Freeman's Maple ( <i>Acer x freemanii</i> ).	Red-oiser Dogwood ( <i>Cornus sericea</i> )	Creeping Bentgrass ( <i>Agrostis stolonifera</i> )	
CUP - Plantations	6	1.9	Scots Pine ( <i>Pinus sylvestris</i> ), Norway Spruce, White Pine and Eastern White Cedar ( <i>Thuja occidentalis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
						Herb-Robert ( <i>Geranium robertianum</i> ),	
						European Lily-of-the-valley ( <i>Convallaria majalis</i> ).	
CUP1 - Deciduous Plantations	4	0.6	Crack Willow ( <i>Salix x fragilis</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Japanese Honeysuckle ( <i>Lonicera japonica</i> )	Zigzag Goldenrod ( <i>Solidago flexicaulis</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			---	Common Buckthorn ( <i>Rhamnus cathartica</i> ).	---	---	
CUP2 - Mixed Plantations	3	0.4	Manitoba Maple ( <i>Acer negundo</i> )	---	Nannyberry ( <i>Viburnum lentago</i> )	Goldenrod sp. ( <i>Solidago</i> )	Heavy recreational use
			White Spruce ( <i>Picea glauca</i> )		Red-oiser Dogwood ( <i>Cornus sericea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			---		Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	Canada Thistle ( <i>Cirsium arvense</i> )	
CUP3 - Coniferous Plantations	13	8.6	White Spruce ( <i>Picea glauca</i> )	White Ash ( <i>Fraxinus americana</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> ).	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	Dominant and widespread alien species
			Eastern White Pine ( <i>Pinus strobus</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Common Dandelion ( <i>Taraxacum officinale</i> )	
			Eastern White Cedar ( <i>Thuja occidentalis</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
CUS - Cultural Savannah	8	18.3	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Eastern White Pine ( <i>Pinus strobus</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Abundant and widespread alien species
			Crack Willow ( <i>Salix x fragilis</i> )	Eastern White Pine ( <i>Pinus strobus</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Tall Goldenrod ( <i>Solidago altissima</i> )	
			Trembling Aspen ( <i>Populus tremuloides</i> )	Scots Pine ( <i>Pinus sylvestris</i> )	Red-oiser Dogwood ( <i>Cornus sericea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
CUS1 - Mineral Cultural Savannah	7	9.8	White Ash ( <i>Fraxinus americana</i> )	White Ash ( <i>Fraxinus americana</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Abundant and extensive alien species
			Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
			Eastern White Pine ( <i>Pinus strobus</i> )	Hawthorn sp. ( <i>Crataegus</i> )	Nannyberry ( <i>Viburnum lentago</i> )	Goldenrod sp. ( <i>Solidago</i> )	
CUT - Cultural Thicket	9	3.3	White Spruce ( <i>Picea glauca</i> )	Willow sp. ( <i>Salix</i> )	Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	Tall Goldenrod ( <i>Solidago altissima</i> )	Occasional and widespread alien species



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Eastern White Cedar ( <i>Thuja occidentalis</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Red-oiser Dogwood ( <i>Cornus sericea</i> )	Spotted Joe Pye Weed ( <i>Eutrochium maculatum</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	Black Walnut ( <i>Juglans nigra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
CUT1 – Mineral Cultural Thicket	10	7.2	Black Walnut ( <i>Juglans nigra</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	Abundant and widespread alien species
			Staghorn Sumac ( <i>Rhus typhina</i> )	Black Walnut ( <i>Juglans nigra</i> )	Honeysuckle sp. ( <i>Lonicera</i> )	Dame’s Rocket ( <i>Hesperis matronalis</i> )	
			Eastern Cottonwood ( <i>Populus deltoides</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Gray Dogwood ( <i>Cornus racemosa</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	
CUW – Cultural Woodland	36	32.0	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Abundant and widespread alien species
			Black Walnut ( <i>Juglans nigra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
			Crack Willow ( <i>Salix x fragilis</i> )	Trembling Aspen ( <i>Populus tremuloides</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Giant Goldenrod ( <i>Solidago gigantea</i> )	
CUW1 – Mineral Cultural Woodland	23	25.2	Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Intermediate and widespread gaps in forest canopy
			Crack Willow ( <i>Salix x fragilis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	European Euonymus ( <i>Euonymus europaeus</i> )	Kentucky Bluegrass ( <i>Poa pratensis</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	American Basswood ( <i>Tilia americana</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Canada Goldenrod ( <i>Solidago canadensis</i> )	
FOC - Coniferous Forest	2	0.2	Eastern White Cedar ( <i>Thuja occidentalis</i> ) Eastern Hemlock ( <i>Tsuga canadensis</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Bulblet Bladder-fern ( <i>Cystopteris bulbifera</i> )	Understory often very sparse
FOC1 - Dry – Fresh Pine Coniferous Forest	2	0.3	Eastern White Pine ( <i>Pinus strobus</i> )	Eastern White Pine ( <i>Pinus strobus</i> )	Black Holly ( <i>Ilex verticillata</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	Abundant and widespread alien species
			American Basswood ( <i>Tilia americana</i> )	Black Cherry ( <i>Prunus serotina</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	Virginia Creeper ( <i>Parthenocissus quinquefolia</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			---	American Basswood ( <i>Tilia americana</i> )	Common Red Raspberry ( <i>Rubus idaeus</i> )	Wild Strawberry ( <i>Fragaria virginiana</i> )	
FOC2 - Dry - Fresh Cedar Coniferous Forest	1	0.5	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	Occasional and widespread alien species
FOC3 - Fresh - Moist Hemlock Coniferous Forest	2	0.6	Eastern Hemlock ( <i>Tsuga canadensis</i> )	Eastern Hemlock ( <i>Tsuga canadensis</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	Low understory and ground layer cover
			Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )		Garlic Mustard ( <i>Alliaria petiolata</i> )	
			American Basswood ( <i>Tilia americana</i> )	American Basswood ( <i>Tilia americana</i> )		Running Strawberry Bush ( <i>Euonymus obovatus</i> )	
FOC4 - Fresh - Moist White Cedar Coniferous Forest	10	7.9	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	Abundant and widespread alien species
			Eastern White Pine ( <i>Pinus strobus</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	
			Black Walnut ( <i>Juglans nigra</i> )	Common Apple ( <i>Malus pumila</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Giant Goldenrod ( <i>Solidago gigantea</i> )	
FOD - Deciduous Forest	9	8.2	Trembling Aspen ( <i>Populus tremuloides</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Smooth Brome ( <i>Bromus inermis</i> )	Occasional and widespread alien species
			Silver Maple ( <i>Acer saccharinum</i> )	White Ash ( <i>Fraxinus americana</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Virginia Waterleaf ( <i>Hydrophyllum virginianum</i> )	
			Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
FOD3 - Dry - Fresh Poplar - White Birch Deciduous Forest	6	2.3	Trembling Aspen ( <i>Populus tremuloides</i> )	Trembling Aspen ( <i>Populus tremuloides</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Abundant and widespread alien species
			Large-tooth Aspen ( <i>Populus grandidentata</i> )	Large-tooth Aspen ( <i>Populus grandidentata</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	
			Eastern Cottonwood ( <i>Populus deltoides</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Staghorn Sumac ( <i>Rhus typhina</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	
FOD4 - Dry - Fresh Deciduous Forest	11	6.8	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Abundant and widespread alien species



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Black Locust ( <i>Robinia pseudoacacia</i> )	White Ash ( <i>Fraxinus americana</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
			White Ash ( <i>Fraxinus americana</i> )	American Beech ( <i>Fagus grandifolia</i> )	White Ash ( <i>Fraxinus americana</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	
FOD5 – Dry – Fresh Sugar Maple Deciduous Forest	33	84.3	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Occasional and widespread alien species
			Black Locust ( <i>Robinia pseudoacacia</i> )	Eastern Hop-hornbeam ( <i>Ostrya virginiana</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	
			American Beech ( <i>Fagus grandifolia</i> )	American Beech ( <i>Fagus grandifolia</i> )	White Ash ( <i>Fraxinus americana</i> )	Yellow Trout-lily ( <i>Erythronium Americanum</i> )	
FOD6 – Fresh – Moist Sugar Maple Deciduous Forest	13	11.5	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Abundant and widespread alien species
			Black Walnut ( <i>Juglans nigra</i> )	Eastern Hop-hornbeam ( <i>Ostrya virginiana</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	
			American Basswood ( <i>Tilia americana</i> )	Black Cherry ( <i>Prunus serotina</i> )	Japanese Honeysuckle ( <i>Lonicera japonica</i> )	Ostrich Fern ( <i>Matteuccia struthiopteris</i> )	
FOD7 – Fresh – Moist Lowland Deciduous Forest	82	99.5	Black Walnut ( <i>Juglans nigra</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	Abundant and widespread alien species
			Manitoba Maple ( <i>Acer negundo</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Dame's Rocket ( <i>Hesperis matronalis</i> )	
			Crack Willow ( <i>Salix x fragilis</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Giant Goldenrod ( <i>Solidago gigantea</i> )	
FOD8 – Fresh – Moist Poplar – Sassafras Deciduous Forest	1	0.5	White Poplar ( <i>Populus alba</i> )	White Poplar ( <i>Populus alba</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	Abundant and widespread alien species
			Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	
			White Willow ( <i>Salix alba</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Serviceberry sp. ( <i>Amelanchier</i> )	Red Baneberry ( <i>Actaea rubra</i> )	
FOD9 – Fresh Moist Oak – Maple – Hickory Deciduous Forest	1	0.6	Bur Oak ( <i>Quercus macrocarpa</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Occasional and widespread alien species
			Sugar Maple ( <i>Acer saccharum</i> )	Eastern Hop-hornbeam ( <i>Ostrya virginiana</i> )	Manitoba Maple ( <i>Acer negundo</i> )	White Ash ( <i>Fraxinus americana</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Scots Pine ( <i>Pinus sylvestris</i> )	Blue-beech ( <i>Carpinus caroliniana</i> )	Blue-beech ( <i>Carpinus caroliniana</i> )	Red Baneberry ( <i>Actaea rubra</i> )	
FOM - Mixed Forest	8	8.3	Black Walnut ( <i>Juglans nigra</i> )	Black Walnut ( <i>Juglans nigra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	Abundant and widespread alien species
			Freeman's Maple ( <i>Acer x freemanii</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Black Walnut ( <i>Juglans nigra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	
			Eastern White Cedar ( <i>Thuja occidentalis</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Red-oiser Dogwood ( <i>Cornus sericea</i> )	Virginia Creeper ( <i>Parthenocissus quinquefolia</i> )	
FOM3 - Dry - Fresh Hardwood - Hemlock Mixed Forest	4	3.6	Sugar Maple ( <i>Acer saccharum</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Long-stalked Sedge ( <i>Carex pedunculata</i> )	Occasional and local alien species
FOM4 - Dry - Fresh White Cedar Mixed Forest	1	6.7	Eastern White Cedar ( <i>Thuja occidentalis</i> )	American Basswood ( <i>Tilia americana</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Ostrich Fern ( <i>Matteuccia struthiopteris</i> )	Dominant and widespread alien species
			Manitoba Maple ( <i>Acer negundo</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )		Garlic Mustard ( <i>Alliaria petiolata</i> )	
FOM5 - Dry - Fresh White Birch - Poplar - Conifer Mixed Forest	1	1.4	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Occasional and widespread alien species
			Black Cherry ( <i>Prunus serotina</i> )	American Basswood ( <i>Tilia americana</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	
			American Beech ( <i>Fagus grandifolia</i> )	---	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	
FOM6 - Fresh - Moist Hemlock Mixed Forest Ecosite	12	20.5	Eastern Hemlock ( <i>Tsuga canadensis</i> )	Eastern Hemlock ( <i>Tsuga canadensis</i> )	Black Cherry ( <i>Prunus serotina</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Occasional and widespread alien species
			Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	
			American Elm ( <i>Ulmus americana</i> )	American Elm ( <i>Ulmus americana</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Zigzag Goldenrod ( <i>Solidago flexicaulis</i> )	
FOM7 - Fresh - Moist White Cedar - Hardwood Mixed Forest	8	12.1	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	White Ash ( <i>Fraxinus americana</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	Occasional and widespread alien species
			Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Garlic Mustard ( <i>Alliaria petiolata</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			White Spruce ( <i>Picea glauca</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	
FOM8 - Fresh - Moist Poplar - White Birch Mixed Forest	1	0.3	White Poplar ( <i>Populus alba</i> )	White Poplar ( <i>Populus alba</i> )	Black Walnut ( <i>Juglans nigra</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	Abundant and widespread alien species
			White Spruce ( <i>Picea glauca</i> )	Black Walnut ( <i>Juglans nigra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Giant Goldenrod ( <i>Solidago gigantea</i> )	
			Black Walnut ( <i>Juglans nigra</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Serviceberry sp. ( <i>Amelanchier</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	
MAM - Meadow Marsh	11	8.5	White Willow ( <i>Salix alba</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Common Reed ( <i>Phragmites australis</i> )	Abundant and widespread alien species
			Trembling Aspen ( <i>Populus tremuloides</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Reed ( <i>Phragmites australis</i> )	Cattail sp. ( <i>Typha</i> )	
			Eastern Cottonwood ( <i>Populus deltoides</i> )	Common Reed ( <i>Phragmites australis</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
MAM2 - Mineral Meadow Marsh	24	8.4	Black Walnut ( <i>Juglans nigra</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Spotted Joe Pye Weed ( <i>Eutrochium maculatum</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	Light dumping, abundant and widespread alien species
			Manitoba Maple ( <i>Acer negundo</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Dark-green Bulrush ( <i>Scirpus atrovirens</i> )	
			Crack Willow ( <i>Salix x fragilis</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Spotted Joe Pye Weed ( <i>Eutrochium maculatum</i> )	
MAM3 - Organic Meadow Marsh	1	0.3	Not recorded	Not recorded	Not recorded	Reed Canary-grass ( <i>Phalaris arundinacea</i> ) Forbs ( <i>not described</i> ) Jewelweed ( <i>Impatiens capensis</i> )	
MAS - Shallow Marsh	3	1.5	White Willow ( <i>Salix alba</i> )	Crack Willow ( <i>Salix euxina</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Dominant and extensive alien species
			Green Ash ( <i>Fraxinus pennsylvanica</i> )	Bebb's Willow ( <i>Salix bebbiana</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Eastern Cottonwood ( <i>Populus deltoides</i> )	Eastern Cottonwood ( <i>Populus deltoides</i> )	Narrow-leaved Cattail ( <i>Typha angustifolia</i> )	Narrow-leaved Cattail ( <i>Typha angustifolia</i> )	
MAS2 – Mineral Shallow Marsh	18	6.6	Manitoba Maple ( <i>Acer negundo</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Broad-leaved Cattail ( <i>Typha latifolia</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	Occasional and local alien species
			Narrow-leaved Cattail ( <i>Typha angustifolia</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Spotted Joe Pye Weed ( <i>Eutrochium maculatum</i> )	Broad-leaved Cattail ( <i>Typha latifolia</i> )	
			White Willow ( <i>Salix alba</i> )	American Elm ( <i>Ulmus americana</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
MAS3 – Organic Shallow Marsh	2	2.0	Eastern Cottonwood ( <i>Populus deltoides</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Narrow-leaved Cattail ( <i>Typha angustifolia</i> )	Light dumping, occasional and widespread alien species
			Slippery Elm ( <i>Ulmus rubra</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			Sugar Maple ( <i>Acer saccharum</i> )	White Willow ( <i>Salix alba</i> )	Gray Dogwood ( <i>Cornus racemosa</i> )	Common Reed ( <i>Phragmites australis</i> )	
OAO – Open Aquatic	26	21.0	Fragrant Water-lily ( <i>Nymphaea odorata</i> )	Pondweed sp. ( <i>Potamogeton</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Goldenrod sp. ( <i>Solidago</i> )	Well marked and widespread tracks/trails
			Willow sp. ( <i>Salix</i> )	Willow sp. ( <i>Salix</i> )	Willow sp. ( <i>Salix</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Honeysuckle sp. ( <i>Lonicera</i> )	Common Burdock ( <i>Arctium minus</i> )	
SWC1 – White Cedar Mineral Coniferous Swamp	3	0.9	Sugar Maple ( <i>Acer saccharum</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Choke Cherry ( <i>Prunus virginiana</i> )	Zigzag Goldenrod ( <i>Solidago flexicaulis</i> )	Occasional and widespread alien species
			Eastern White Cedar ( <i>Thuja occidentalis</i> )	Norway Maple ( <i>Acer platanoides</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	
			Black Cherry ( <i>Prunus serotina</i> )	---	Norway Maple ( <i>Acer platanoides</i> )	Broad-leaved Enchanter's Nightshade ( <i>Circaea canadensis</i> )	
SWC3 – White Cedar Organic Coniferous Swamp	2	2.8	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	White Snakeroot ( <i>Ageratina altissima</i> )	Occasional and widespread alien species
			Balsam Fir ( <i>Abies balsamea</i> )	Yellow Birch ( <i>Betula alleghaniensis</i> )	Speckled Alder ( <i>Alnus incana</i> )	Creeping Jennie ( <i>Lysimachia nummularia</i> )	



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Yellow Birch ( <i>Betula alleghaniensis</i> )	Speckled Alder ( <i>Alnus incana</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Colt's Foot ( <i>Tussilago farfara</i> )	
SWD2 - Ash Mineral Deciduous Swamp	1	2.7	Manitoba Maple ( <i>Acer negundo</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Trembling Aspen ( <i>Populus tremuloides</i> )	White Snakeroot ( <i>Ageratina altissima</i> )	Intermediate and widespread gaps in forest canopy
			Yellow Birch ( <i>Betula alleghaniensis</i> )	Black Ash ( <i>Fraxinus nigra</i> )		Stinging Nettle ( <i>Urtica dioica</i> )	
			American Basswood ( <i>Tilia americana</i> )	---		---	
SWD3 - Maple Mineral Deciduous Swamp	13	11.2	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Wood Nettle ( <i>Laportea canadensis</i> )	Abundant and widespread alien species
			Green Ash ( <i>Fraxinus pennsylvanica</i> )	Red Maple ( <i>Acer rubrum</i> )	Alternate-leaved Dogwood ( <i>Cornus alternifolia</i> )	Stinging Nettle ( <i>Urtica dioica</i> )	
			Red Maple ( <i>Acer rubrum</i> )	Dotted Hawthorn ( <i>Crataegus punctata</i> )	Common Reed ( <i>Phragmites australis</i> )	Ostrich Fern ( <i>Matteuccia struthiopteris</i> )	
SWD4 - Mineral Deciduous Swamp	13	7.7	Crack Willow ( <i>Salix x fragilis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	Abundant and widespread alien species
			White Willow ( <i>Salix alba</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Crack Willow ( <i>Salix x fragilis</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	White Willow ( <i>Salix alba</i> )	Common Red Raspberry ( <i>Rubus idaeus</i> )	European Swallow-wort ( <i>Vincetoxicum rossicum</i> )	
SWM - Mixed Swamp	1	0.6	Crack Willow ( <i>Salix x fragilis</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Ostrich Fern ( <i>Matteuccia struthiopteris</i> )	Not recorded
			Eastern White Cedar ( <i>Thuja occidentalis</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Alternate-leaved Dogwood ( <i>Cornus alternifolia</i> )	Zigzag Goldenrod ( <i>Solidago flexicaulis</i> )	
			White Ash ( <i>Fraxinus americana</i> )	American Elm ( <i>Ulmus americana</i> )	Green Ash ( <i>Fraxinus pennsylvanica</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	
SWM1 - White Cedar Mineral Mixed Swamp	7	6.2	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Eastern White Cedar ( <i>Thuja occidentalis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Bulblet Fern ( <i>Cystopteris bulbifera</i> )	Occasional and widespread alien species



Ecosite	Number of Polygons	Total Area (ha)	Canopy - Dominant Species	Subcanopy - Dominant Species	Understory - Dominant Species	Ground Layer - Dominant Species	Disturbance
			Black Walnut ( <i>Juglans nigra</i> )	Sugar Maple ( <i>Acer saccharum</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Sensitive Fern ( <i>Onoclea sensibilis</i> )	
			Manitoba Maple ( <i>Acer negundo</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Norway Maple ( <i>Acer platanoides</i> )	Rice Cutgrass ( <i>Leersia oryzoides</i> )	
SWT – Thicket Swamp	1	0.3	Manitoba Maple ( <i>Acer negundo</i> )	American Basswood ( <i>Tilia americana</i> )	Red-osier Dogwood ( <i>Cornus sericea</i> )	Spotted Jewelweed ( <i>Impatiens capensis</i> )	Occasional and widespread alien species
			American Elm ( <i>Ulmus americana</i> )	American Elm ( <i>Ulmus americana</i> )	Riverbank Grape ( <i>Vitis riparia</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	
			---	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	Aster sp. ( <i>Symphyotrichum</i> )	
SWT2 – Mineral Thicket Swamp	4	1.0	Crack Willow ( <i>Salix x fragilis</i> )	Manitoba Maple ( <i>Acer negundo</i> )	Cattail sp. ( <i>Typha</i> )	Reed Canary Grass ( <i>Phalaris arundinacea</i> )	Occasional and widespread alien species
				Eastern Cottonwood ( <i>Populus deltoides</i> )	Japanese Honeysuckle ( <i>Lonicera japonica</i> )	Broad-leaved Cattail ( <i>Typha latifolia</i> )	
				Common Buckthorn ( <i>Rhamnus cathartica</i> )	Common Buckthorn ( <i>Rhamnus cathartica</i> )	Goldenrod sp. ( <i>Solidago</i> )	



## APPENDIX 3 | Flora List



Appendix page



Table A3-1. Flora species list

Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Abies balsamea</i>	Balsam Fir		G5	N5		S5			L4	N	5	-3
<i>Acalypha rhomboidea</i>	Common Three-seeded Mercury		G5	N5		S5			L5	N	0	3
<i>Acer tataricum ssp. ginnala</i>	Amur Maple		GNR	NNA		SNA				I		5
<i>Acer negundo</i>	Manitoba Maple		G5	N5		S5			L+?	N	0	-2
<i>Anemone quinquefolia</i>	Wood Anemone		G5	N5		S5	U	R3	L4	N	7	0
<i>Acer nigrum</i>	Black Maple		G5	NNR		S4?		R4	L4	N	7	3
<i>Acer pensylvanicum</i>	Striped Maple		G5	N5		S4				N	7	3
<i>Acer platanoides</i>	Norway Maple		GNR	NNA		SNA			L+	I	0	5
<i>Acer rubrum</i>	Red Maple		G5	N5		S5			L4	N	4	0
<i>Carex leptalea</i>	Bristle-stalked Sedge		G5	N5		S5	U	U	L3	N	8	-5
<i>Acer saccharum</i>	Sugar Maple		G5	N5		S5			L5	N	4	3
<i>Acer saccharum</i>	Sugar Maple		G5	N5		S5			L5	N	4	3
<i>Caulophyllum thalictroides</i>	Blue Cohosh		G5	N5		S5	R	R	L3	N	6	5
<i>Juglans cinerea</i>	Butternut	END	G4	N3N4	END	S2?			L3	N	6	2
<i>Juglans nigra</i>	Black Walnut		G5	N4		S4?		R	L5	N	5	3
<i>Parthenocissus quinquefolia</i>	Virginia Creeper		G5	N4N5		S4?	R	R1	L5	N	6	1
<i>Acer saccharinum</i>	Silver Maple		G5	N5		S5			L4	N	5	-3
<i>Acer x freemanii</i>	( <i>Acer rubrum</i> X <i>Acer saccharinum</i> )		GNA	NNA		SNA			L4	I		
<i>Achillea millefolium</i>	Common Yarrow		G5	N5		SNA			L+	I		3
<i>Actaea pachypoda</i>	White Baneberry		G5	NNR		S5			L4	N	6	5
<i>Actaea sp</i>	Baneberry Species											
<i>Actaea rubra</i>	Red Baneberry		G5	N5		S5			L5	N	5	5
<i>Aegopodium podagraria</i>	Goutweed		GNR	NNA		SNA			L+	I	0	0
<i>Aesculus hippocastanum</i>	Horse Chestnut		GNR	NNA		SNA			L+	I	0	5
<i>Ageratina altissima</i>	White Snakeroot		G5	N5		S5			L5	N	5	3
<i>Acer spicatum</i>	Mountain Maple		G5	N5		S5			L4	N	6	3
<i>Agrimonia gryposepala</i>	Hooked Agrimony		G5	N5		S5			L5	N	2	2
<i>Agrostis capillaris</i>	Colonial Bentgrass		GNR	NNA		SNA				I	0	5
<i>Agrostis gigantea</i>	Redtop		G4G5	NNA		SNA			L+	I	0	0
<i>Agrostis perennans</i>	Upland Bentgrass		G5	N5		S4?	R	R3	L3	N	5	1
<i>Agrostis stolonifera</i>	Creeping Bentgrass		G5	N5		SNA			L+?	I	0	-3
<i>Ajuga reptans</i>	Creeping Bugleweed		GNR	NNA		SNA			L+	I	0	5
<i>Alisma subcordatum</i>	Southern Water-plantain		G5	N5		S4?			L3	N	1	5
<i>Alisma triviale</i>	Northern Water-plantain		G5	N5		S5			L5	N	1	5
<i>Alliaria petiolata</i>	Garlic Mustard		GNR	NNA		SNA			L+	I	0	0
<i>Allium tricoccum</i>	Wild Leek		G5	N5		S4				N	7	2
<i>Alnus incana</i>	Speckled Alder		G5	N5		S5			L3	N	6	-5
<i>Alnus incana ssp. rugosa</i>	Speckled Alder		G5T5	N5		S5				N	6	-5
<i>Ambrosia artemisiifolia</i>	Annual Ragweed		G5	N5		S5			L5	N	0	3



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Amelanchier sp</i>	Serviceberry Species											
<i>Amphicarpaea bracteata</i>	American Hog-peanut		G5	N5		S5			L5	N	4	0
<i>Andropogon gerardii</i>	Big Bluestem*		G5	N5		S4	R	R3	L3	N	7	1
<i>Anemone americana</i>	Round-lobed Hepatica		G5	NNR		S5	R	R5	L2	N	6	5
<i>Anemone canadensis</i>	Canada Anemone		G5	N5		S5			L5	N	3	-3
<i>Anemone virginiana</i>	Tall Anemone		G5	NNR		S5				N	4	5
<i>Angelica atropurpurea</i>	Great Angelica		G5	N5		S5	R	R9	L3	N	6	-5
<i>Antennaria neglecta</i>	Field Pussytoes		G5	N5		S5		U	LU	N	3	5
<i>Anthriscus sylvestris</i>	Wild Chervil		GNR	NNA		SNA			L+	I	0	5
<i>Apocynum cannabinum</i>	Hemp Dogbane		G5	N5		S5		U	L5	N	3	0
<i>Aralia nudicaulis</i>	Wild Sarsaparilla		G5	N5		S5			L5	N	4	3
<i>Aralia racemosa</i>	American Spikenard		G4G5	N5		S5	U	U	L3	N	7	5
<i>Arctium sp</i>	Burdock Species											
<i>Arctium minus</i>	Common Burdock		GNR	NNA		SNA			L+	I	0	5
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit		G5	N5		S5			L5	N	5	-2
<i>Asarum canadense</i>	Canada Wild-ginger		G5	N5		S5			L4	N	6	5
<i>Asclepias incarnata ssp. incarnata</i>	Swamp Milkweed		G5T5	N5		S5				N	6	-5
<i>Asclepias incarnata</i>	Swamp Milkweed		G5	N5		S5			L4	N	6	-5
<i>Asclepias syriaca</i>	Common Milkweed		G5	N5		S5			L5	N	0	5
<i>Aster sp</i>	Aster Species											
<i>Athyrium filix-femina</i>	Common Lady Fern		G5	N5		S5				N	4	0
<i>Barbarea vulgaris</i>	Bitter Wintercress		GNR	NNA		SNA			L+	I	0	0
<i>Berberis thunbergii</i>	Japanese Barberry		GNR	NNA		SNA			L+	I	0	4
<i>Betula alleghaniensis</i>	Yellow Birch		G5	N5		S5			L4	N	6	0
<i>Betula papyrifera</i>	Paper Birch		G5	N5		S5			L4	N	2	2
<i>Bidens cernua</i>	Nodding Beggarticks		G5	N5		S5			L5	N	2	-5
<i>Bidens connata</i>	Purple-stemmed Beggarticks		G5	NNR		S4?				N	5	-3
<i>Bidens frondosa</i>	Devil's Beggarticks		G5	N5		S5			L5	N	3	-3
<i>Bidens tripartita</i>	Three-parted Beggarticks		GNR	NNR		S5	U		L5	N	4	-3
<i>Boehmeria cylindrica</i>	False Nettle		G5	N5		S5			L4	N	4	-5
<i>Berberis vulgaris</i>	European Barberry		GNR	NNA		SNA			L+	I	0	3
<i>Bolboschoenus fluviatilis</i>	River Bulrush		G5	N5		S4S5	R	R3	L3	N	7	-5
<i>Bromus inermis</i>	Smooth Brome		G5TNR	NNA		SNA			L+	I	0	5
<i>Bromus latiglumis</i>	Broad-glumed Brome		G5	N5		S4	U	R5	L4	N	7	-2
<i>Calamagrostis stricta</i>	Slim-stemmed Reedgrass*		G5	N5		S5				N	8	-4
<i>Caltha palustris</i>	Yellow Marsh Marigold		G5	N5		S5			L4	N	5	-5
<i>Calystegia sepium</i>	Hedge False Bindweed		G5	N5		S5			L5	N	2	0
<i>Campanula rapunculoides</i>	Creeping Bellflower		GNR	NNA		SNA			L+	I	0	5
<i>Cannabis sativa</i>	Marijuana		GNR	NNA		SNA			L+	I	0	0



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Caragana arborescens</i>	Siberian Peashrub		GNR	NNA		SNA			L+	I	0	5
<i>Cardamine concatenata</i>	Cut-leaved Toothwort		G5	N5		S5			L3	N	6	3
<i>Cardamine diphylla</i>	Two-leaved Toothwort		G5	N5		S5			L4	N	7	5
<i>Cardamine maxima</i>	Large Toothwort		G5	NNR		S3			L4	N		
<i>Cardamine pennsylvanica</i>	Pennsylvania Bittercress		G5	N5		S5	U	U	L4	N	6	-4
<i>Cardamine pratensis</i>	Meadow Bittercress		G5TU	NNR		SNA				I	7	-5
<i>Carex sp</i>	Sedge Species											
<i>Carex albursina</i>	White Bear Sedge		G5	N5		S5	U	U	L3	N	7	5
<i>Carex arctata</i>	Drooping Woodland Sedge		G5	N5		S5			L5	N	5	5
<i>Carex blanda</i>	Woodland Sedge		G5	N5		S5			L5	N	3	0
<i>Carex cephaloidea</i>	Thin-leaved Sedge		G5	N5		S4	U	R9	L4	N	6	2
<i>Carex cristatella</i>	Crested Sedge		G5	N5		S5			L5	N	3	-4
<i>Carex deweyana</i>	Dewey's Sedge		G5	N5		S5			L4	N	6	4
<i>Carex flava</i>	Yellow Sedge		G5	N5		S5	U	U	L3	N	5	-5
<i>Carex grisea</i>	Gray Sedge		G5?	N4N5		S4			L4	N	8	1
<i>Carex gracillima</i>	Graceful Sedge		G5	N5		S5			L5	N	4	3
<i>Carex granularis</i>	Limestone Meadow Sedge		G5	N5		S5			L5	N	3	-4
<i>Carex grayi</i>	Gray's Sedge		G4	NNR		S4	R	R2	L3	N	8	-4
<i>Carex hitchcockiana</i>	Hitchcock's Sedge		G5	N5		S4S5	U	U	L4	N	6	5
<i>Carex hirtifolia</i>	Pubescent Sedge		G5	N5		S4S5	U	U	L4	N	5	5
<i>Carex hystericina</i>	Porcupine Sedge		G5	N5		S5			L4	N	5	-5
<i>Carex interior</i>	Inland Sedge		G5	N5		S5			L3	N	6	-5
<i>Carex intumescens</i>	Bladder Sedge		G5	N5		S5			L4	N	6	-4
<i>Carex laxiflora</i>	Loose-flowered Sedge		G5	N5		S5	U	U	L4	N	5	0
<i>Carex lacustris</i>	Lake Sedge		G5	N5		S5			L4	N	5	-5
<i>Carex laevivaginata</i>	Smooth-cone Sedge		G5	N4		S4	R	R9	L3	N	8	-5
<i>Carex laxiculmis</i>	Spreading Sedge		G5	N4		S4	R	R4		N	7	5
<i>Carex lurida</i>	Sallow Sedge		G5	N5		S4S5	R1	R2	L3	N	6	-5
<i>Carex lupulina</i>	Hop Sedge		G5	N5		S5			L4	N	6	-5
<i>Carex peckii</i>	Peck's Sedge		G5	N5		S5			L4	N	6	5
<i>Carex pedunculata</i>	Long-stalked Sedge		G5	N5		S5			L5	N	5	5
<i>Carex pennsylvanica</i>	Pennsylvania Sedge		G5	N5		S5			L4	N	5	5
<i>Carex plantaginea</i>	Plantain-leaved Sedge		G5	N5		S5		U	L3	N	7	5
<i>Carex projecta</i>	Necklace Sedge		G5	N5		S5			L4	N	5	-4
<i>Carex pseudocyperus</i>	Cyperus-like Sedge		G5	N5		S5			L4	N	6	-5
<i>Carex radiata</i>	Eastern Star Sedge		G5	N5		S5			L5	N	4	5
<i>Carex retrorsa</i>	Retrorsed Sedge		G5	N5		S5			L4	N	5	-5
<i>Carex rosea</i>	Rosy Sedge		G5	N5		S5			L5	N	5	5
<i>Carex scabrata</i>	Eastern Rough Sedge		G5	N5		S5	U	U	L4	N	8	-5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Carex stipata</i>	Awl-fruited Sedge		G5	N5		S5			L5	N	3	-5
<i>Carex vulpinoidea</i>	Fox Sedge		G5	N5		S5			L5	N	3	-5
<i>Carpinus caroliniana</i>	Blue-beech		G5	N5		S5			L4	N	6	0
<i>Carya cordiformis</i>	Bitternut Hickory		G5	N5		S5			L4	N	6	0
<i>Catalpa speciosa</i>	Northern Catalpa		G4?	NNA		SNA			L+	I	0	3
<i>Caulophyllum giganteum</i>	Giant Blue Cohosh		G4G5	N4		S4S5	R	R	L4	N	5	5
<i>Caulophyllum thalictroides</i>	Blue Cohosh		G5	N5		S5			L3	N	5	5
<i>Celtis occidentalis</i>	Common Hackberry*		G5	N4		S4	R		L+	N	8	1
<i>Cercis canadensis</i>	Eastern Redbud*		G5	NX		SX				N	8	3
<i>Chelone glabra</i>	White Turtlehead		G5	N5		S5	U	U	L3	N	7	-5
<i>Chelidonium majus</i>	Greater Celadine		GNR	NNA		SNA			L+	I	0	5
<i>Chenopodium album</i>	White Goosefoot		G5	NNA		SNA			L+	I	0	1
<i>Chrysosplenium americanum</i>	American Golden-saxifrage		G5	N5		S4	R	R6	L3	N	8	-5
<i>Cichorium intybus</i>	Chicory		GNR	NNA		SNA			L+	I	0	5
<i>Cicuta maculata</i>	Spotted Water-hemlock		G5	N5		S5				N	6	-5
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade		G5T5	N5		S5			L5	N	3	3
<i>Circaea canadensis ssp. canadensis</i>	Canada Enchanter's Nightshade		GNR	NNR		S5				N	3	3
<i>Cirsium arvense</i>	Canada Thistle		GNR	NNA		SNA			L+	I	0	3
<i>Cirsium vulgare</i>	Bull Thistle		GNR	NNA		SNA			L+	I	0	4
<i>Clematis virginiana</i>	Virginia Virgin's-bower		G5	NNR		S5			L5	N	3	0
<i>Clinopodium vulgare</i>	Field Basil		G5	N5		S5			L5	N	4	5
<i>Convolvulus arvensis</i>	Field Bindweed		GNR	NNA		SNA			L+	I	0	5
<i>Convallaria majalis</i>	European Lily-of-the-valley		G5	NNA		SNA			L+	I	0	5
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood		G5	N5		S5			L5	N	6	5
<i>Cornus racemosa</i>	Gray Dogwood		G5?	N5		S5		U	L5	N	2	-2
<i>Cornus rugosa</i>	Round-leaved Dogwood		G5	NNR		S5			L4	N	6	5
<i>Cornus sericea</i>	Red-osier Dogwood		G5	N5		S5			L5	N	2	-3
<i>Corylus cornuta</i>	Beaked Hazelnut		G5	N5		S5			L4	N	5	5
<i>Crataegus sp</i>	Hawthorn Species											
<i>Crataegus monogyna</i>	English Hawthorn		G5	NNA		SNA			L+	I	0	5
<i>Crataegus punctata</i>	Dotted Hawthorn		G5	N5		S5			L5	N	4	5
<i>Cryptotaenia canadensis</i>	Canada Honewort		G5	N5		S5			L5	N	5	0
<i>Cuscuta gronovii</i>	Swamp Dodder		G5	N5		S5				N	4	-3
<i>Cynoglossum officinale</i>	Common Hound's-tongue		GNR	NNA		SNA			L+	I	0	5
<i>Cyperus fuscus</i>	Brown Flatsedge		GNR	NNA		SNA			L+	I	0	-5
<i>Cystopteris bulbifera</i>	Bulblet Fern		G5	N5		S5			L4	N	5	-2
<i>Dactylis glomerata</i>	Orchard Grass		GNR	NNA		SNA			L+	I	0	3
<i>Daucus carota</i>	Wild Carrot		GNR	NNA		SNA			L+	I	0	5
<i>Desmodium sp</i>	Tick-trefoil Species											



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Diervilla lonicera</i>	Northern Bush-honeysuckle		G5	N5		S5			L5	N	5	5
<i>Dichanthelium implicatum</i>	Slender-stemmed Panicgrass		G5	N5		S5	R	R3	L4	N	3	0
<i>Dipsacus fullonum</i>	Common Teasel		GNR	NNA		SNA			L+	I	0	5
<i>Dryopteris</i> sp	Wood Fern Species											
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern		G5	N5		S5			L5	N	5	-2
<i>Dryopteris cristata</i>	Crested Wood Fern		G5	N5		S5			L4	N	7	-5
<i>Dryopteris intermedia</i>	Evergreen Wood Fern		G5	N5		S5			L4	N	5	0
<i>Dryopteris marginalis</i>	Marginal Wood Fern		G5	N5		S5			L4	N	5	3
<i>Echinochloa crus-galli</i>	Large Barnyard Grass		GNR	NNA		SNA			L+	I	0	-3
<i>Echinocystis lobata</i>	Wild Mock-cucumber		G5	N5		S5			L5	N	3	-2
<i>Echinochloa muricata</i>	Rough Barnyard Grass		G5	N5		S5				N	4	-5
<i>Echinops sphaerocephalus</i>	Great Globe-thistle		GNR	NNA		SNA			L+	I	0	5
<i>Echium vulgare</i>	Common Viper's-bugloss		GNR	NNA		SNA			L+	I	0	5
<i>Elaeagnus angustifolia</i>	Russian Olive		GNR	NNA		SNA			L+	I	0	4
<i>Eleocharis</i> sp	Spikerush Species											
<i>Eleocharis erythropoda</i>	Red-stemmed Spikerush		G5	N5		S5			L5	N	4	-5
<i>Elodea canadensis</i>	Broad Waterweed		G5	N5		S5	U	U	L4	N	4	-5
<i>Elymus repens</i>	Creeping Wildrye		GNR	NNA		SNA			L+	I	0	3
<i>Elymus riparius</i>	Eastern Riverbank Wildrye		G5	N4		S4	R	R5	L4	N	7	-3
<i>Elymus villosus</i>	Hairy Wildrye		G5	N4		S4	R	R3	L2	N	7	3
<i>Elymus virginicus</i>	Virginia Wildrye		G5	N5		S5				N	5	-2
<i>Epilobium ciliatum</i>	Northern Willowherb		G5	N5		S5			L5	N	3	3
<i>Epilobium coloratum</i>	Purple-veined Willowherb		G5	N5		S5	R	R6	L5	N	3	-5
<i>Epilobium hirsutum</i>	Hairy Willowherb		GNR	NNA		SNA			L+	I	0	-4
<i>Epilobium parviflorum</i>	Small-flowered Willowherb		GNR	NNA		SNA			L+	I	0	3
<i>Epipactis helleborine</i>	Eastern Helleborine		GNR	NNA		SNA			L+	I	0	5
<i>Equisetum</i> sp	Horsetail Species											
<i>Equisetum arvense</i>	Field Horsetail		G5	N5		S5			L5	N	0	0
<i>Equisetum fluviatile</i>	Water Horsetail		G5	N5		S5			L3	N	7	-5
<i>Equisetum pratense</i>	Meadow Horsetail		G5	N5		S5	R	R8	L3	N	8	-3
<i>Equisetum variegatum</i>	Variegated Horsetail		G5	N5		S5			L4	N	5	-3
<i>Erigeron annuus</i>	Annual Fleabane		G5	N5		S5			L5	N	0	1
<i>Erigeron canadensis</i>	Canada Horseweed		G5	N5		S5			L5	N	0	1
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane		G5	N5		S5			L5	N	1	-3
<i>Erigeron strigosus</i>	Rough Fleabane		G5	N5		S5			L5	N	0	1
<i>Erysimum cheiranthoides</i>	Wormseed Wallflower		G5	NNR		SNA			L+	I	0	3
<i>Erythronium</i> sp	Trout-lily Species											
<i>Erythronium americanum</i>	Yellow Trout-lily		G5	N5		S5			L5	N	5	5
<i>Euonymus alatus</i>	Winged Euonymus		GNR	NNA		SNA			L+	I	0	5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Euonymus europaeus</i>	European Euonymus		GNR	NNA		SNA			L+	I	0	5
<i>Euonymus obovatus</i>	Running Strawberry Bush		G5	N5		S4			L3	N	6	5
<i>Eupatorium perfoliatum</i>	Common Boneset		G5	N5		S5			L4	N	2	-4
<i>Euphorbia maculata</i>	Spotted Spurge		G5?	NNR		SNA			L+?	I	0	4
<i>Eurybia macrophylla</i>	Large-leaved Aster		G5	N5		S5			L5	N	5	5
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod		G5	N5		S5			L5	N	2	-2
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed		G5	N5		S5				N	3	-5
<i>Fagus grandifolia</i>	American Beech		G5	N5		S4			L4	N	6	3
<i>Fallopia convolvulus</i>	Black Bindweed		GNR	NNA		SNA			L+	I	0	1
<i>Floerkea proserpinacoides</i>	False Mermaid	NAR	G5	N4	NAR	S4	R	R1	L2	N	9	-1
<i>Fragaria vesca</i>	Woodland Strawberry		G5	N5		S5			L5	N	4	4
<i>Fragaria virginiana</i>	Wild Strawberry		G5	N5		S5			L5	N	2	1
<i>Frangula alnus</i>	Glossy Buckthorn		GNR	NNA		SNA			L+	I	0	-1
<i>Fraxinus sp</i>	Ash Species											
<i>Fraxinus pennsylvanica</i>	Green Ash		G5	N5		S4			L5	N	3	-3
<i>Fraxinus americana</i>	White Ash		G5	N5		S4			L5	N	4	3
<i>Fraxinus excelsior</i>	European Ash		GNR	NNA		SNA			L+	I		
<i>Fraxinus nigra</i>	Black Ash	THR	G5	N5		S4			L4	N	7	-4
<i>Galeopsis tetrahit</i>	Common Hemp-nettle		GNR	NNA		SNA			L+	I	0	5
<i>Galium sp</i>	Bedstraw Species											
<i>Galium aparine</i>	Cleavers		G5	N5		S5	U	U	L5	N	4	3
<i>Galium asprellum</i>	Rough Bedstraw		G5	NNR		S5	U	U	L5	N	6	-5
<i>Galium palustre</i>	Marsh Bedstraw		G5	NNR		S5			L5	N	5	-5
<i>Geranium maculatum</i>	Spotted Geranium		G5	N5		S5	U	R2	L4	N	6	3
<i>Geranium robertianum</i>	Herb-Robert		G5	N4		S5			L+?	N	0	5
<i>Geum sp</i>	Avens Species											
<i>Geum aleppicum</i>	Yellow Avens		G5	N5		S5			L5	N	2	-1
<i>Geum canadense</i>	White Avens		G5	N5		S5			L5	N	3	0
<i>Geum x catlingii</i>	( <i>Geum canadense</i> X <i>Geum urbanum</i> )		GNA	NNA		SNA				I		
<i>Geum urbanum</i>	Wood Avens		G5	NNA		SNA			L+	I	0	5
<i>Glechoma hederacea</i>	Ground Ivy		GNR	NNA		SNA			L+	I	0	3
<i>Glyceria grandis</i>	Tall Mannagrass		G5	N5		S5			L5	N	5	-5
<i>Glyceria septentrionalis</i>	Eastern Mannagrass		G5	NNR		S4	R	U	L3	N	8	-5
<i>Glyceria striata</i>	Fowl Mannagrass		G5	N5		S5			L5	N	3	-5
<i>Hackelia virginiana</i>	Virginia Stickseed		G5	N5		S5	U	R8	L5	N	5	1
<i>Helianthus sp</i>	Sunflower Species											
<i>Heliopsis helianthoides</i>	False Sunflower*		G5	N5		S4S5	R	R1	L2	N	3	5
<i>Helianthus tuberosus</i>	Jerusalem Artichoke		G5	N5		SU			L5	N	0	0
<i>Hemerocallis fulva</i>	Orange Daylily		GNA	NNA		SNA			L+	I	0	5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Heracleum mantegazzianum</i>	Giant Hogweed		GNR	NNA		SNA			L+	I		
<i>Heracleum maximum</i>	Cow-parsnip		G5	N5		S5	R	R9	L5	N	3	-3
<i>Hesperis matronalis</i>	Dame's Rocket		G4G5	NNA		SNA			L+	I	0	5
<i>Geum fragarioides</i>	Barren Strawberry		G5	NNR		S5			L4	N	5	5
<i>Hieracium sp</i>	Hawkweed Species											
<i>Hydrocotyle americana</i>	American Water-pennywort		G5	N5		S4S5	U	U	L4	N	7	-5
<i>Hydrophyllum canadense</i>	Bluntleaf Waterleaf		G5	N4		S4	R	R5	L3	N	8	-2
<i>Hydrophyllum virginianum</i>	Virginia Waterleaf		G5	N5		S5			L5	N	6	-2
<i>Hypericum perforatum</i>	Common St. John's-wort		GNR	NNA		SNA			L+	I	0	5
<i>Ilex verticillata</i>	Black Holly		G5	N5		S5			L3	N	5	-4
<i>Impatiens capensis</i>	Spotted Jewelweed		G5	N5		S5			L5	N	4	-3
<i>Impatiens glandulifera</i>	Purple Jewelweed		GNR	NNA		SNA			L+	I	0	-3
<i>Inula helenium</i>	Elecampane		GNR	NNA		SNA			L+	I	0	5
<i>Iris sp</i>	Iris Species											
<i>Iris pseudacorus</i>	Yellow Iris		GNR	NNA		SNA			L+	I	0	-5
<i>Iris versicolor</i>	Harlequin Blue Flag		G5	N5		S5			L3	N	5	-5
<i>Juncus effusus</i>	Soft Rush		G5	N5		S5			L4	N	4	-5
<i>Juniperus sp</i>	Juniper Species											
<i>Juniperus virginiana</i>	Eastern Red Cedar		G5	N5		S5	U	U	L4	N	4	3
<i>Lactuca biennis</i>	Tall Blue Lettuce		G5	N5		S5	U	U	L4	N	6	0
<i>Lactuca serriola</i>	Prickly Lettuce		GNR	NNA		SNA			L+	I	0	0
<i>Lamiastrum galeobdolon</i>	Yellow Archangel		GNR	NNA		SNA			L+	I		
<i>Laportea canadensis</i>	Wood Nettle		G5	N5		S5			L5	N	6	-3
<i>Lapsana communis</i>	Common Nipplewort		GNR	NNA		SNA			L+	I	0	5
<i>Larix decidua</i>	European Larch		G5	NNA		SNA			L+	I	0	5
<i>Larix laricina</i>	American Larch*		G5	N5		S5			L3	N	7	-3
<i>Leersia oryzoides</i>	Rice Cutgrass		G5	N5		S5			L5	N	3	-5
<i>Leersia virginica</i>	Virginia Cutgrass		G5	N4N5		S4	R	R4	L4	N	6	-3
<i>Lemna minor</i>	Lesser Duckweed		G5	N5		S5			L5	N	2	-5
<i>Leonurus cardiaca</i>	Common Motherwort		GNR	NNA		SNA			L+	I	0	5
<i>Leucanthemum vulgare</i>	Oxeye Daisy		GNR	NNA		SNA			L+	I	0	5
<i>Ligustrum vulgare</i>	European Privet		GNR	NNA		SNA			L+	I	0	1
<i>Lilium michiganense</i>	Michigan Lily		G5	N5		S4	U	U	L4	N	7	-1
<i>Lithospermum officinale</i>	European Gromwell		GNR	NNA		SNA			L+	I	0	5
<i>Lobelia siphilitica</i>	Great Blue Lobelia		G5	NNR		S5	U	U	L3	N	6	-4
<i>Lolium arundinaceum</i>	Tall Fescue		GNR	NNA		SNA			L+	I	0	2
<i>Lolium pratense</i>	Meadow Fescue		G5	NNA		SNA			L+	I	0	4
<i>Lonicera sp</i>	Honeysuckle Species											
<i>Lonicera x bella</i>	( <i>Lonicera morrowii</i> X <i>Lonicera tatarica</i> )		GNA	NNA		SNA			L+	I	0	5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle		G5	N5		S5			L3	N	6	3
<i>Lonicera japonica</i>	Japanese Honeysuckle		GNR	NNA		SNA			L+	I	0	3
<i>Lonicera tatarica</i>	Tartarian Honeysuckle		GNR	NNA		SNA			L+	I	0	3
<i>Lonicera villosa</i>	Mountain Fly Honeysuckle		G5	N5		S5	R	R1		N	10	-3
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil		GNR	NNA		SNA			L+	I	0	1
<i>Lycopus americanus</i>	American Water-horehound		G5	N5		S5			L4	N	4	-5
<i>Lycopus europaeus</i>	European Water-horehound		GNR	NNA		SNA			L+	I	0	-5
<i>Lycopus uniflorus</i>	Northern Water-horehound		G5	N5		S5			L5	N	5	-5
<i>Lycopus sp</i>	Bugleweed Species											
<i>Lysimachia ciliata</i>	Fringed Loosestrife		G5	N5		S5			L5	N	4	-3
<i>Lysimachia nummularia</i>	Creeping Jennie		GNR	NNA		SNA			L+	I	0	-4
<i>Lythrum salicaria</i>	Purple Loosestrife		G5	NNA		SNA			L+	I	0	-5
<i>Maianthemum sp</i>	Solomon's Seal Species											
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley		G5	N5		S5			L4	N	5	0
<i>Maianthemum racemosum</i>	False Solomon's-seal		G5	N5		S5			L5	N	4	3
<i>Maianthemum stellatum</i>	Star-flowered False Solomon's-seal		G5	N5		S5			L5	N	6	1
<i>Malus sp</i>	Apple Species											
<i>Malus pumila</i>	Common Apple		G5	NNA		SNA			L+	I	0	5
<i>Matteuccia struthiopteris</i>	Ostrich Fern		G5	N5		S5			L5	N	5	-3
<i>Medicago lupulina</i>	Black Medic		GNR	NNA		SNA			L+	I	0	1
<i>Medicago sativa</i>	Alfalfa		GNR	NNA		SNA				I	0	5
<i>Medicago sativa ssp. sativa</i>	Alfalfa		GNRTNR	NNA		SNA			L+	I		
<i>Melilotus albus</i>	White Sweet-clover		G5	NNA		SNA			L+	I	0	3
<i>Melilotus officinalis</i>	Yellow Sweet-clover		GNR	NNA		SNA			L+	I	0	3
<i>Menispermum canadense</i>	Canada Moonseed		G5	N4N5		S4	U	R5	L3	N	7	0
<i>Mentha sp</i>	Mint Species											
<i>Mentha canadensis</i>	Canada Mint		G5T5	N5		S5				N	3	-3
<i>Mentha spicata</i>	Spearmint		GNR	NNA		SNA			L+	I	0	-4
<i>Miscanthus sacchariflorus</i>	Japanese Silver Grass		GNR	NNA		SNA			L+	I	0	5
<i>Monarda fistulosa</i>	Wild Bergamot		G5	N5		S5				N	6	3
<i>Morus alba</i>	White Mulberry		GNR	NNA		SNA			L+	I	0	0
<i>Muhlenbergia frondosa</i>	Wirestem Muhly		G5	NNR		S4	R	R2	L4	N	5	-3
<i>Myosotis sp</i>	Forget-me-not Species											
<i>Myosotis arvensis</i>	Rough Forget-me-not		GNR	NNA		SNA			L+	I	0	0
<i>Myosotis laxa</i>	Small Forget-me-not		G5	N5		S5			L4	N	6	-5
<i>Myosotis scorpioides</i>	True Forget-me-not		G5	NNA		SNA			L+	I	0	-5
<i>Myosotis sylvatica</i>	Woodland Forget-me-not		G5	NNA		SNA			L+	I	0	5
<i>Nabalus altissimus</i>	Tall Rattlesnakeroot		G5	N5		S5			L5	N	5	3
<i>Nasturtium officinale</i>	Watercress		GNR	NNA		SNA			L+?	I	0	-5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Nuphar variegata</i>	Variegated Pond-lily		G5T5	N5		S5	U	U	L3	N	4	-5
<i>Nymphaea odorata</i>	Fragrant Water-lily		G5	N5		S5				N	5	-5
<i>Oenothera sp</i>	Evening-primrose Species											
<i>Oenothera biennis</i>	Common Evening Primrose		G5	N5		S5	U	U	L5	N	0	3
<i>Onoclea sensibilis</i>	Sensitive Fern		G5	N5		S5			L5	N	4	-3
<i>Mycelis muralis</i>	Wall Lettuce		GNR	NNA		SNA			L+	I	0	5
<i>Onopordum acanthium</i>	Scotch Cotton-thistle		GNR	NNA		SNA			L+	I		
<i>Oryzopsis asperifolia</i>	White-grained Mountain-ricegrass		G5	N5		S5			L4	N	6	5
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam		G5	N5		S5			L5	N	4	4
<i>Oxalis sp</i>	Wood Sorrel Species											
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel		G5	N5		S5			L5	N	0	3
<i>Parthenocissus vitacea</i>	Thicket Creeper		G5	N5		S5			L5	N	3	3
<i>Pastinaca sativa</i>	Wild Parsnip		GNR	NNA		SNA			L+	I	0	5
<i>Persicaria amphibia</i>	Water Smartweed		G5	N5		S5				N	5	-5
<i>Persicaria hydropiper</i>	Marshpepper Smartweed		GNR	NNR		SNA			L+?	I	4	-5
<i>Persicaria lapathifolia</i>	Pale Smartweed		G5	N5		S5			L5	N	2	-4
<i>Persicaria maculosa</i>	Spotted Lady's-thumb		G3G5	NNA		SNA			L+	I	0	-3
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed		G5	N5		S5	R	R3	L4	N	3	-4
<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	Reed Canary Grass		GNR	NNR		S5				I	0	-4
<i>Phalaris arundinacea</i>	Reed Canary Grass		G5	N5		S5			L+?	I	0	-4
<i>Phleum pratense</i> ssp. <i>pratense</i>	Common Timothy		GNRTNR	NNA		SNA				I	0	3
<i>Phleum pratense</i>	Common Timothy		GNR	NNA		SNA			L+	I	0	3
<i>Phragmites australis</i> ssp. <i>australis</i>	European Common Reed		G5	N5		SU				I	0	-4
<i>Phryma leptostachya</i>	Lopseed		G5	N5		S4S5			L5	N	6	5
<i>Physalis heterophylla</i>	Clammy Ground-cherry		G5	N4		S4	R	R7	L5	N	3	5
<i>Physalis virginiana</i>	Virginia Ground-cherry		G5	NNR		SU	R		LU	N	8	5
<i>Phytolacca americana</i>	Common Pokeweed		G5	N4		S4	R	R1		N	3	1
<i>Picea sp</i>	Spruce Species											
<i>Picea abies</i>	Norway Spruce		G5	NNA		SNA			L+	I	0	5
<i>Picea glauca</i>	White Spruce*		G5	N5		S5			L3	N	6	3
<i>Picea pungens</i>	Blue Spruce		G5	NNA		SNA			L+	I		
<i>Pilea fontana</i>	Springs Clearweed		G5	N4		S4	R	U	L4	N	5	-3
<i>Pilea pumila</i>	Canada Clearweed		G5	N5		S5			L5	N	5	-3
<i>Pilosella caespitosa</i>	Meadow Hawkweed		GNR	NNA		SNA			L+	I	0	5
<i>Pinus nigra</i>	Black Pine		GNR	NNA		SNA			L+	I	0	-5
<i>Pinus strobus</i>	Eastern White Pine		G5	N5		S5			L4	N	4	3
<i>Pinus sylvestris</i>	Scots Pine		GNR	NNA		SNA			L+	I	0	5
<i>Plantago lanceolata</i>	English Plantain		G5	NNA		SNA			L+	I	0	0
<i>Plantago major</i>	Common Plantain		G5	NNA		SNA			L+	I	0	-1



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Plantago rugelii</i>	Rugel's Plantain		G5	N5		S5			L5	N	1	0
<i>Poa sp</i>	Bluegrass Species											
<i>Poa compressa</i>	Canada Bluegrass		GNR	NNA		SNA			L+	I	0	2
<i>Poa nemoralis</i>	Woods Bluegrass		G5	N5		SNA			L+	I	0	0
<i>Poa palustris</i>	Fowl Bluegrass		G5	N5		S5			L5	N	5	-4
<i>Poa pratensis</i>	Kentucky Bluegrass		G5	N5		S5				N	0	1
<i>Podophyllum peltatum</i>	May-apple		G5	N5		S5			L5	N	5	3
<i>Polystichum acrostichoides</i>	Christmas Fern		G5	N5		S5			L4	N	5	5
<i>Polygonatum multiflorum</i>	Eurasian Solomon's Seal		GNR	NNA		SNA			L+	I	8	3
<i>Polygonatum pubescens</i>	Hairy Solomon's Seal		G5	N5		S5			L4	N	5	5
<i>Pontederia cordata</i>	Pickereel Weed		G5	N5		S5	R	R3	L2	N	7	-5
<i>Populus alba</i>	White Poplar		G5	NNA		SNA			L+	I	0	5
<i>Populus balsamifera</i>	Balsam Poplar		G5	N5		S5			L5	N	4	-3
<i>Populus deltoides</i>	Eastern Cottonwood		G5	N5		S5				N	4	-1
<i>Populus tremuloides</i>	Trembling Aspen		G5	N5		S5			L5	N	2	0
<i>Potamogeton sp</i>	Pondweed Species											
<i>Potamogeton crispus</i>	Curly-leaved Pondweed		G5	NNA		SNA			L+	I	0	-5
<i>Potamogeton foliosus</i>	Leafy Pondweed		G5	N5		S5	R	U	L4	N	4	-5
<i>Potamogeton natans</i>	Floating Pondweed		G5	N5		S5	U	U	L3	N	5	-5
<i>Potentilla sp</i>	Cinquefoil Species											
<i>Potentilla anserina</i>	Silverweed		G5	N5		S5				N	5	-4
<i>Potentilla recta</i>	Sulphur Cinquefoil		GNR	NNA		SNA			L+	I	0	5
<i>Prenanthes sp</i>	Rattlesnake-root Species											
<i>Prunus sp</i>	Cherry Species											
<i>Prunus pensylvanica</i>	Pin Cherry		G5	NNR		S5			L4	N	3	4
<i>Prunus serotina</i>	Black Cherry		G5	N5		S5			L5	N	3	3
<i>Prunus virginiana</i>	Choke Cherry		G5	NNR		S5			L5	N	2	1
<i>Prunella vulgaris</i>	Self-heal		G5	N5		S5				N		
<i>Pulmonaria officinalis</i>	Blue Lungwort		GNR	NNA		SNA			L+	I		
<i>Pyrola elliptica</i>	Shinleaf		G5	N5		S5			L4	N	5	5
<i>Pyrus communis</i>	Common Pear		G5	NNA		SNA			L+	I	0	5
<i>Quercus alba</i>	White Oak		G5	N5		S5		R6	L3	N	6	3
<i>Quercus macrocarpa</i>	Bur Oak		G5	N5		S5			L4	N	5	1
<i>Quercus rubra</i>	Northern Red Oak		G5	N5		S5			L4	N	6	3
<i>Ranunculus sp</i>	Buttercup Species											
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup		G5	NNR		S5			L5	N	2	-2
<i>Ranunculus acris</i>	Tall Buttercup		G5	NNA		SNA			L+	I	0	-2
<i>Ranunculus hispidus</i> var. <i>caricetorum</i>	Northern Swamp Buttercup		G5T5	NNR		S5			L4	N	5	-5
<i>Ranunculus recurvatus</i>	Hooked Buttercup		G5	NNR		S5			L5	N	4	-3



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Ranunculus sceleratus</i>	Cursed Buttercup		G5	N5		S5				N	2	-5
<i>Rhamnus cathartica</i>	Common Buckthorn		GNR	NNA		SNA			L+	I	0	3
<i>Rhus aromatica</i>	Fragrant Sumac*		G5	N5		S4	R	R1	L+	N	8	5
<i>Rhus typhina</i>	Staghorn Sumac		G5	N5		S5			L5	N	1	5
<i>Ribes sp</i>	Currant Species											
<i>Ribes americanum</i>	Wild Black Currant		G5	N5		S5			L5	N	4	-3
<i>Ribes cynosbati</i>	Prickly Gooseberry		G5	N5		S5			L5	N	4	5
<i>Ribes rubrum</i>	Northern Red Currant		G4G5	NNA		SNA			L+	I	0	5
<i>Ribes triste</i>	Swamp Red Currant		G5	N5		S5	U	U	L3	N	6	-5
<i>Robinia pseudoacacia</i>	Black Locust		G5	NNA		SNA			L+	I	0	4
<i>Rorippa palustris</i>	Marsh Yellowcress		G5	N5		S5				N	3	-5
<i>Rosa sp</i>	Rose Species											
<i>Rosa multiflora</i>	Multiflora Rose		GNR	NNA		SNA			L+	I	0	3
<i>Rosa rugosa</i>	Rugosa Rose		GNR	NNA		SNA			L+	I	0	3
<i>Rubus sp</i>	Rubus Species											
<i>Rubus idaeus</i>	Common Red Raspberry		G5	N5		S5				N		
<i>Rubus idaeus ssp. idaeus</i>	Common Red Raspberry		G5T5	NNR		SNA			L+	I	0	-2
<i>Rubus laciniatus</i>	Cut-leaved Blackberry		GUQ	NNA		SNA				I		
<i>Rubus occidentalis</i>	Black Raspberry		G5	N5		S5			L5	N	2	5
<i>Rubus odoratus</i>	Purple-flowering Raspberry		G5	N5		S5			L5	N	3	5
<i>Rubus pubescens</i>	Dewberry		G5	NNR		S5			L4	N	4	-4
<i>Rudbeckia hirta var. pulcherrima</i>	Black-eyed Susan		G5T5	N5		S5			L4	N	0	3
<i>Rudbeckia laciniata</i>	Cut-leaved Coneflower		G5	N5		S5	U	R4	L4	N	7	-4
<i>Rudbeckia triloba</i>	Brown-eyed Susan		G5	NNA		SNA			L+	I	0	1
<i>Rumex britannica</i>	Water Dock		G5	N5		S5	U		L3	N	6	-5
<i>Rumex crispus</i>	Curly Dock		GNR	NNA		SNA			L+	I	0	-1
<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead		G5	N5		S5			L4	N	4	-5
<i>Salix sp</i>	Willow Species											
<i>Salix alba</i>	White Willow		G5	NNA		SNA			L+	I	0	-3
<i>Salix bebbiana</i>	Bebb's Willow		G5	N5		S5			L4	N	4	-4
<i>Salix caprea</i>	Goat Willow		GNR	NNA		SNA			L+	I		
<i>Salix discolor</i>	Pussy Willow		G5	N5		S5			L4	N	3	-3
<i>Salix eriocephala</i>	Heart-leaved Willow		G5	N5		S5			L5	N	4	-3
<i>Salix euxina</i>	Crack Willow		GNR	NNA		SNA			L+	I	0	-1
<i>Salix interior</i>	Sandbar Willow		GNR	NNR		S5		U	L5	N	3	-5
<i>Salix matsudana</i>	Corkscrew Willow		GNR	NNA		SNA			L+	I		
<i>Salix purpurea</i>	Purple Willow		G5	NNA		SNA			L+	I	0	-3
<i>Salix x fragilis</i>	( <i>Salix alba</i> X <i>Salix euxina</i> )		GNA	NNA		SNA			L+	I	0	-4
<i>Salix x sepulcralis</i>	( <i>Salix alba</i> X <i>Salix babylonica</i> )		GNA	NNA		SNA			L+	I		



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Sambucus canadensis</i>	Common Elderberry		G5T5	NNR		S5			L5	N	5	-2
<i>Sambucus racemosa</i>	Red Elderberry		G5	N5		S5			L5	N	5	2
<i>Sanguinaria canadensis</i>	Bloodroot		G5	N5		S5			L5	N	5	4
<i>Saponaria officinalis</i>	Bouncing-bet		GNR	NNA		SNA			L+	I	0	3
<i>Schizachne purpurascens</i>	Purple False Melic		G5	N5		S5			L4	N	6	2
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush		G5	N5		S5			L4	N	5	-5
<i>Scirpus atrovirens</i>	Dark-green Bulrush		G5?	N5		S5				N	3	-5
<i>Scirpus microcarpus</i>	Red-tinged Bulrush		G5	N5		S5	U	U	L5	N	4	-5
<i>Scutellaria galericulata</i>	Hooded Skullcap		G5	N5		S5			L5	N	6	-5
<i>Securigera varia</i>	Common Crown-vetch		GNR	NNA		SNA			L+	I	0	5
<i>Silene latifolia</i>	White Champion		GNR	NNA		SNA			L+	I		
<i>Sium suave</i>	Hemlock Water-parsnip		G5	N5		S5			L4	N	4	-5
<i>Solanum dulcamara</i>	Climbing Nightshade		GNR	NNA		SNA			L+	I	0	0
<i>Solanum sp</i>	Nightshade Species											
<i>Solidago sp</i>	Goldenrod Species											
<i>Solidago altissima</i>	Tall Goldenrod		G5	N5		S5				N		
<i>Solidago caesia</i>	Blue-stemmed Goldenrod		G5	N5		S5			L5	N	5	3
<i>Solidago canadensis</i>	Canada Goldenrod		G5	N5		S5				N	1	3
<i>Solidago caesia</i> var. <i>caesia</i>	Blue-stemmed Goldenrod		G5	N5		S5				N		
<i>Solidago flexicaulis</i>	Zigzag Goldenrod		G5	N5		S5			L5	N	6	3
<i>Solidago gigantea</i>	Giant Goldenrod		G5	N5		S5			L5	N	4	-3
<i>Solidago juncea</i>	Early Goldenrod		G5	N5		S5	U	R6	L4	N	3	5
<i>Solidago patula</i>	Round-leaved Goldenrod		G5	N5		S4	R	R5	L3	N	8	-5
<i>Sonchus arvensis</i>	Field Sow-thistle		GNR	NNA		SNA				I		1
<i>Sorbus aucuparia</i>	European Mountain-ash		G5	NNA		SNA			L+	I	0	5
<i>Sparganium eurycarpum</i>	Broad-fruited Burreed		G5	N5		S5	U	U	L3	N	3	-5
<i>Spiraea alba</i>	White Meadowsweet		G5	N5		S5			L4	N	3	-4
<i>Spirodela polyrhiza</i>	Great Duckweed		G5	N5		S5			L4	N	4	-5
<i>Stachys palustris</i>	Marsh Hedge-nettle		G5	N5		SNA	R	R4	L+	I	0	-5
<i>Stellaria sp</i>	Chickweed Species											
<i>Stuckenia pectinata</i>	Sago Pondweed		G5	N5		S5			L4	N	4	-5
<i>Symphyotrichum cordifolium</i>	Heart-leaved Aster		G5	N5		S5			L5	N	5	5
<i>Symphyotrichum ericoides</i>	White Heath Aster		G5	N5		S5				N	4	4
<i>Symphyotrichum lanceolatum</i>	Panicled Aster		G5	N5		S5				N	3	-3
<i>Symphyotrichum lateriflorum</i>	Calico Aster		G5	N5		S5			L5	N	3	-2
<i>Symphyotrichum novae-angliae</i>	New England Aster		G5	N5		S5			L5	N	2	-3
<i>Symphytum officinale</i>	Common Comfrey		GNR	NNA		SNA			L+	I	0	5
<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>	Old Field Aster		G5T5	N5		S5	R	R3	L2	N	4	2
<i>Symphyotrichum puniceum</i>	Swamp Aster		G5	N5		S5			L5	N	6	-5



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Syringa vulgaris</i>	Common Lilac		GNR	NNA		SNA			L+	I	0	5
<i>Taraxacum officinale</i>	Common Dandelion		G5	N5		SNA			L+	I	0	3
<i>Taxus canadensis</i>	Canadian Yew		G5	N5		S4			L3	N	7	3
<i>Thalictrum dioicum</i>	Early Meadow-rue		G5	NNR		S5			L5	N	5	2
<i>Thalictrum pubescens</i>	Tall Meadow-rue		G5	NNR		S5			L5	N	5	-2
<i>Thelypteris palustris</i>	Marsh Fern		G5	N5		S5			L4	N	5	-4
<i>Thuja occidentalis</i>	Eastern White Cedar		G5	N5		S5			L4	N	4	-3
<i>Tiarella cordifolia</i>	Heart-leaved Foam-flower		G5	N5		S5			L4	N	6	1
<i>Tilia americana</i>	American Basswood		G5	N5		S5			L5	N	4	3
<i>Tilia cordata</i>	Little-leaf Linden		GNR	NNA		SNA			L+	I		
<i>Toxicodendron radicans</i>	Poison Ivy		G5	N5		S5			L5	N	5	-1
<i>Toxicodendron radicans</i> var. <i>rydbergii</i>	Western Poison Ivy		G5	N5		S5		R6	L5	N	0	0
<i>Trifolium hybridum</i>	Alsike Clover		GNR	NNA		SNA			L+	I	0	1
<i>Trifolium pratense</i>	Red Clover		GNR	NNA		SNA			L+	I	0	2
<i>Trifolium repens</i>	White Clover		GNR	NNA		SNA			L+	I	0	2
<i>Trillium erectum</i>	Red Trillium		G5	N5		S5			L4	N	6	1
<i>Trillium grandiflorum</i>	White Trillium		G5	N5		S5			L4	N	5	5
<i>Triosteum aurantiacum</i>	Orange-fruited Horse-gentian		G5	N5		S4S5	R	R9	L3	N	7	5
<i>Tripleurospermum inodorum</i>	Scentless Chamomile		GNR	NNA		SNA			L+	I	0	5
<i>Tsuga canadensis</i>	Eastern Hemlock		G5	N5		S5			L4	N	7	3
<i>Tussilago farfara</i>	Colt's-foot		GNR	NNA		SNA			L+	I	0	3
<i>Typha angustifolia</i>	Narrow-leaved Cattail		G5	N5		SNA			L+	I	3	-5
<i>Typha latifolia</i>	Broad-leaved Cattail		G5	N5		S5			L4	N	3	-5
<i>Ulmus</i> sp	Elm Species											
<i>Ulmus americana</i>	American Elm		G5	N5		S5			L5	N	3	-2
<i>Ulmus pumila</i>	Siberian Elm		GNR	NNA		SNA			L+	I	0	5
<i>Ulmus rubra</i>	Slippery Elm		G5	N5		S5		U	L3	N	6	0
<i>Urtica dioica</i>	Stinging Nettle		G5	N5		S5				N		
<i>Verbena hastata</i>	Blue Vervain		G5	NNR		S5			L5	N	4	-4
<i>Verbascum thapsus</i>	Common Mullein		GNR	NNA		SNA			L+	I	0	5
<i>Verbena urticifolia</i>	White Vervain		G5	N5		S5			L5	N	4	-1
<i>Vernonia gigantea</i>	Giant Ironweed*		G5	N1N2		S1?			L+	N	7	0
<i>Veronica anagallis-aquatica</i>	Water Speedwell		G5	N4		SNA			L4	I	0	-5
<i>Veronica officinalis</i>	Common Speedwell		G5	NNR		SNA			L+	I	0	5
<i>Veronicastrum virginicum</i>	Culver's Root*		G4	N2		S2			L+	N	10	0
<i>Viburnum</i> sp	Viburnum Species											
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum		G5	N5		S5			L3	N	6	5
<i>Viburnum lantana</i>	Wayfaring-tree		GNR	NNA		SNA			L+	I	0	5
<i>Viburnum lentago</i>	Nannyberry		G5	N5		S5			L5	N	4	-1



Scientific Name	Common Name	COSEWIC	G Rank	N Rank	SARO	S Rank	GTA	RM York	TRCA	Native Status	CC	CW
<i>Viburnum opulus ssp. opulus</i>	Cranberry Viburnum		GNR	NNR		SNA			L+	I	0	0
<i>Viburnum opulus</i>	Cranberry Viburnum		G5	N5		S5				N		0
<i>Viburnum opulus ssp. trilobum</i>	Highbush Cranberry		GNR	NNR		S5			L3	N	5	-3
<i>Vicia cracca</i>	Tufted Vetch		GNR	NNA		SNA			L+	I	0	5
<i>Vinca minor</i>	Periwinkle		GNR	NNA		SNA			L+	I	0	5
<i>Vincetoxicum rossicum</i>	European Swallow-wort		GNR	NNA		SNA			L+	I	0	5
<i>Viola sp</i>	Violet Species											
<i>Viola canadensis</i>	Canada Violet		G5	N5		S5				N	6	5
<i>Viola cucullata</i>	Marsh Blue Violet		G4G5	N5		S5			L4	N	5	-5
<i>Viola pubescens</i>	Yellow Violet		G5	N5		S5				N	5	4
<i>Viola sororia</i>	Woolly Blue Violet		G5	N5		S5			L5	N	4	1
<i>Vitis riparia</i>	Riverbank Grape		G5	N5		S5			L5	N	0	-2
<i>Xanthium strumarium</i>	Rough Cocklebur		G5	N5		S5			L5	N	2	0
<i>Zizia aurea</i>	Golden Alexanders		G5	N5		S5	R	R1	L3	N	7	-1

\*Species planted, species ranking do not apply



## **APPENDIX 4 |** Wildlife List



Appendix page



Table A4-1. Wildlife list including breeding birds, amphibians, reptiles, and mammals.

Group	Common Name	Scientific Name	Breeding (2020)	G RANK	S Rank	SARA Status	COSEWIC	ESA Status	Area Sensitivity	TRCA	Observed in 1991?	Observed in 2020?	Habitat Guild (from Gore and Storrie 1992 except where otherwise noted)
Amphibian	American Toad	<i>Anaxyrus americanus</i>	Y	G5	S5					L4	Y	Y	Wetlands**
Amphibian	Gray Treefrog	<i>Hyla versicolor</i>		G5	S5					L2	Y	Y	Woodland and wetlands**
Amphibian	American Bullfrog	<i>Lithobates catesbeianus</i>	Y	G5	S4				AS	L2	Y	Y	Wetlands**
Amphibian	Green Frog	<i>Lithobates clamitans</i>	Y	G5	S5					L4	Y	Y	Wetlands**
Amphibian	Northern Leopard Frog	<i>Lithobates pipiens</i>	Y	G5	S5		NAR	NAR		L3	Y	Y	Wetlands**
Amphibian	Wood Frog	<i>Lithobates sylvaticus</i>	Y	G5	S5					L2	Y	Y	Woodland**
Amphibian	Eastern Red-backed Salamander	<i>Plethodon cinereus</i>		G5	S5					L3	N	Y	Woodland***
Amphibian	Spring Peeper	<i>Pseudacris crucifer</i>	Y	G5	S5					L2	N	Y	Woodland**
Bird	Cooper's Hawk	<i>Accipiter cooperi</i>	PO	G5	S4		NAR	NAR	AS	L4	Y	Y	Forest interior
Bird	Sharp-shinned Hawk	<i>Accipiter striatus</i>		G5	S5		NAR	NAR	AS	L3	Y	N	Forest edge or interior
Bird	Spotted Sandpiper	<i>Actitis macularius</i>	PR	G5	S5					L4	Y	Y	Forest edge or interior near wetland
Bird	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	C	G5	S4					L5	Y	Y	Open marsh
Bird	Wood Duck	<i>Aix sponsa</i>		G5	S5					L4	Y	N	Forest edge or interior near wetland
Bird	Green-winged Teal	<i>Anas crecca</i>		G5	S4					L2	Y	N	Forest edge or interior near wetland
Bird	Mallard	<i>Anas platyrhynchos</i>	PR	G5	S5					L5	Y	Y	Open areas near wetland
Bird	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	PO	G5	S5B					L4	N	Y	Forest edge or interior*
Bird	Great Blue Heron	<i>Ardea herodias</i>	O	G5	S4					L3	Y	Y	Forest edge or interior near wetland
Bird	Cedar Waxwing	<i>Bombycilla cedrorum</i>	PO	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Ruffed Grouse	<i>Bonasa umbellus</i>		G5	S4					L3	Y	N	Forest edge or interior
Bird	Canada Goose	<i>Branta canadensis</i>	PR	G5	S5						Y	Y	Open areas near wetland
Bird	Great Horned Owl	<i>Bubo virginianus</i>		G5	S4					L4	Y	N	Forest edge or interior
Bird	Red-tailed Hawk	<i>Buteo jamaicensis</i>	PO	G5	S5		NAR	NAS		L5	Y	Y	Forest Edge or Interior
Bird	Green Heron	<i>Butorides virescens</i>	PO	G5	S4B					L4	Y	Y	Forest edge or interior near wetland
Bird	Canada Warbler	<i>Cardellina canadensis</i>	PO	G5	S4B	THR	THR	SC	AS	L2	N	Y	Forest interior*
Bird	Northern Cardinal	<i>Cardinalis cardinalis</i>	C	G5	S5					L5	Y	Y	Forest Edge or Interior



Group	Common Name	Scientific Name	Breeding (2020)	G RANK	S Rank	SARA Status	COSEWIC	ESA Status	Area Sensitivity	TRCA	Observed in 1991?	Observed in 2020?	Habitat Guild (from Gore and Storrie 1992 except where otherwise noted)
Bird	Veery	<i>Catharus fuscescens</i>		G5	S4B				AS		Y	N	Forest Edge or Interior
Bird	Chimney Swift	<i>Chaetura pelagica</i>		G4G5	S4B,S4N	THR	THR			L4	Y	N	Anthropogenic Areas
Bird	Killdeer	<i>Charadrius vociferus</i>	PO	G5	S5B, S5N					L4	Y	Y	Open Areas
Bird	Common Nighthawk	<i>Chordeiles minor</i>		G5	S4B	THR	SC			L3	N	Y	Woodlands, shrublands, grasslands***
Bird	Northern Harrier	<i>Circus cyaneus</i>		G5	S4B		NAR	NAR	AS	L2	Y	N	Open areas near wetland
Bird	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	PO	G5	S4B					L3	N	Y	Forest edge or interior
Bird	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	PO	G5	S5B					L3	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Northern Flicker	<i>Colaptes auratus</i>	PR	G5	S4B					L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Rock Dove	<i>Columba livia</i>		G5	SNA					L+	Y	N	Anthropogenic areas
Bird	Eastern Wood-Pewee	<i>Contopus virens</i>	PR	G5	S4B	SC	SC	SC		L4	Y	Y	Forest edge or Interior
Bird	American Crow	<i>Corvus brachyrhynchos</i>	C	G5	S5B					L5	Y	Y	Forest edge or interior
Bird	Common Raven	<i>Corvus corax</i>	C	G5	S5					L4	N	Y	Forest interior*
Bird	Blue Jay	<i>Cyanocitta cristata</i>	C	G5	S5					L5	Y	Y	Forest Edge or Interior
Bird	Bobolink	<i>Dolichonyx oryzivorus</i>		G5	S4B	THR	THR	THR	AS	L2	Y	N	Open areas
Bird	Pileated Woodpecker	<i>Drycopus pileatus</i>	PO	G5	S5				AS	L3	N	Y	Forest interior*
Bird	Downy Woodpecker	<i>Dryobates pubescens</i>	PR	G5	S5					L5	Y	Y	Forest Edge or Interior
Bird	Hairy Woodpecker	<i>Dryobates villosus</i>	C	G5	S5				AS	L4	N	Y	Forest interior*
Bird	Gray Catbird	<i>Dumetella carolinensis</i>	PR	G5	S4B					L4	Y	Y	Forest Edge or Interior
Bird	Alder Flycatcher	<i>Empidonax alnorum</i>	PO	G5						L3	Y	Y	Forest edge or interior near wetland
Bird	Least Flycatcher	<i>Empidonax minimus</i>	PR	G5	S4B				AS	L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Willow Flycatcher	<i>Empidonax traillii</i>	PR	G5	S5B					L4	Y	Y	Forest edge or interior near wetland
Bird	American Kestrel	<i>Falco sparverius</i>		G5	S4					L4	Y	N	Forest edge and wooded anthropogenic or successional area
Bird	Mourning Warbler	<i>Geothlypis philadelphia</i>	PR	G5	S4B					L3	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Common Yellowthroat	<i>Geothlypis trichas</i>	PR	G5	S5B					L4	Y	Y	Open marsh
Bird	House Finch	<i>Haemorhous mexicanus</i>		G5	SNA					L+	Y	N	Forest edge and wooded anthropogenic or successional area



Group	Common Name	Scientific Name	Breeding (2020)	G RANK	S Rank	SARA Status	COSEWIC	ESA Status	Area Sensitivity	TRCA	Observed in 1991?	Observed in 2020?	Habitat Guild (from Gore and Storrie 1992 except where otherwise noted)
Bird	Barn Swallow	<i>Hirundo rustica</i>	PO	G5	S4B	THR	THR	THR		L4	Y	Y	Anthropogenic Areas
Bird	Wood Thrush	<i>Hylocichla mustelina</i>	PR	G5	S4B	THR	THR	SC		L3	Y	Y	Forest edge or Interior
Bird	Baltimore Oriole	<i>Icterus galbula</i>	PR	G5	S4B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Orchard oriole	<i>Icterus spurius</i>	PO	G5	S4B					L5	N	Y	Forest edge and wooded anthropogenic or successional areas*
Bird	Belted Kingfisher	<i>Megaceryle alcyon</i>	C	G5	S4B					L4	Y	Y	Sandy banks near water
Bird	Eastern Screech-owl	<i>Megascops asio</i>	PO	G5	S4		NAR	NAR		L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	PR	G5	S4					L4	N	Y	Forest edge or interior*
Bird	Wild Turkey	<i>Meleagris gallopavo</i>	PR	G5	S5					L3	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	Swamp Sparrow	<i>Melospiza georgiana</i>	PO	G5	S5B					L4	Y	Y	Open marsh
Bird	Song Sparrow	<i>Melospiza melodia</i>	PR	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Brown-headed Cowbird	<i>Molothrus ater</i>	C	G5	S4B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	PR	G5	S4B					L4	N	Y	Forest edge or Interior
Bird	Osprey	<i>Pandion haliaetus</i>		G5	S5B					L3	Y	N	Forest edge or interior near wetland
Bird	Northern Waterthrush	<i>Parkesia noveboracensis</i>		G5	S5B					L3	Y	N	Forest edge or interior near wetland
Bird	House Sparrow	<i>Passer domesticus</i>	PO	G5	SNA					L+	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Savannah Sparrow	<i>Passerculus sandwichensis</i>	C	G5	S4B				AS	L4	Y	Y	Open areas
Bird	Indigo Bunting	<i>Passerina cyanea</i>	PR	G5	S4B					L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Ring-necked Pheasant	<i>Phasianus colchicus</i>		G5	SNA					L+	Y	N	Forest edge and wooded anthropogenic or successional area
Bird	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	PR	G5	S4B					L4	Y	Y	Forest edge or Interior
Bird	Eastern Towhee	<i>Pipilo erythrophthalmus</i>		G5	S4B					L3	Y	N	Forest edge or Interior
Bird	Scarlet Tanager	<i>Piranga olivacea</i>	PR	G5	S4B				AS	L3	N	Y	Forest interior*
Bird	Black-capped Chickadee	<i>Poecile atricapillus</i>	C	G5	S5					L5	Y	Y	Forest Edge or Interior
Bird	Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	PO	G5	S4B				AS	L4	N	Y	Forest edge or interior



Group	Common Name	Scientific Name	Breeding (2020)	G RANK	S Rank	SARA Status	COSEWIC	ESA Status	Area Sensitivity	TRCA	Observed in 1991?	Observed in 2020?	Habitat Guild (from Gore and Storrie 1992 except where otherwise noted)
Bird	Vesper Sparrow	<i>Pooecetes gramineus</i>		G5	S4B					L3	Y	N	Open areas
Bird	Purple Martin	<i>Progne subis</i>		G5	S4B					L4	Y	N	Anthropogenic areas
Bird	Common Grackle	<i>Quiscalus quiscula</i>	C	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Virginia Rail	<i>Rallus limicola</i>	PO	G5	S5B					L3	Y	Y	Open marsh
Bird	Bank Swallow	<i>Riparia riparia</i>		G5	S4B	THR	THR	THR		L3	Y	N	Sandy banks near water
Bird	Eastern Phoebe	<i>Sayornis phoebe</i>	PO	G5	S5B					L5	Y	Y	Cliff Ledges or bridges near water
Bird	American Woodcock	<i>Scolopax minor</i>		G5	S4B					L3	Y	N	Forest edge or interior
Bird	Magnolia Warbler	<i>Setophaga magnolia</i>	PO	G5	S5B				AS	L3	N	Y	Forest interior*
Bird	Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	PO	G5	S5B					L3	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	Yellow Warbler	<i>Setophaga petechia</i>	PR	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Pine Warbler	<i>Setophaga pinus</i>	PO	G5	S5B				AS	L4	N	Y	Forest interior*
Bird	American Redstart	<i>Setophaga ruticilla</i>	C	G5	S5B				AS	L4	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	Eastern Bluebird	<i>Sialis sialis</i>	PO	G5	S5B		NAR	NAR		L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Red-breasted Nuthatch	<i>Sitta canadensis</i>	PR	G5	S5				AS	L4	Y	Y	Forest interior
Bird	White-breasted Nuthatch	<i>Sitta carolinensis</i>	PR	G5	S5				AS	L4	Y	Y	Forest Edge or Interior
Bird	American Goldfinch	<i>Spinus tristis</i>	PR	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Clay-coloured Sparrow	<i>Spizella pallida</i>	PO	G5	S4B					L3	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	Chipping Sparrow	<i>Spizella passerina</i>	PO	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Field Sparrow	<i>Spizella pusilla</i>	PO	G5	S4B					L4	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	PR	G5	S4B					L4	Y	Y	Sandy banks near water
Bird	Eastern Meadowlark	<i>Sturnella magna</i>	PR	G5	S4B	THR	THR	THR	AS	L3	Y	Y	Open Areas
Bird	European Starling	<i>Sturnus vulgaris</i>	C	G5	SNA					L+	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Tree Swallow	<i>Tachycineta bicolor</i>	PR	G5	S4B					L4	Y	Y	Forest edge and wooded anthropogenic or successional area



Group	Common Name	Scientific Name	Breeding (2020)	G RANK	S Rank	SARA Status	COSEWIC	ESA Status	Area Sensitivity	TRCA	Observed in 1991?	Observed in 2020?	Habitat Guild (from Gore and Storrie 1992 except where otherwise noted)
Bird	Carolina Wren	<i>Thryothorus ludovicianus</i>		G5	S4					L4	Y	N	Forest edge or interior near wetland
Bird	Brown Thrasher	<i>Toxostoma rufum</i>	PO	G5	S4B					L3	N	Y	Forest edge and wooded anthropogenic or successional area
Bird	House Wren	<i>Troglodytes aedon</i>	PR	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	American Robin	<i>Turdus migratorius</i>	PR	G5	S5B					L5	Y	Y	Forest edge or interior
Bird	Eastern Kingbird	<i>Tyrannus tyrannus</i>	PR	G5	S4B					L4	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Warbling Vireo	<i>Vireo gilvus</i>	PR	G5	S5B					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Bird	Red-eyed Vireo	<i>Vireo olivaceus</i>	PR	G5	S5B					L4	Y	Y	Forest Edge or Interior
Bird	Mourning Dove	<i>Zenaida macroura</i>	PO	G5	S5					L5	Y	Y	Forest edge and wooded anthropogenic or successional area
Mammal	Beaver	<i>Castor canadensis</i>		G5	S5					L4	Y	Y	Creek, river***
Mammal	Woodchuck	<i>Marmota monax</i>		G5	S5					L5	Y	N	Forest edge and wooded anthropogenic or successional area***
Mammal	Striped Skunk	<i>Mephitis mephitis</i>		G5	S5					L5	Y	Y	Forest edge and wooded anthropogenic or successional area***
Mammal	American Mink	<i>Mustela vison</i>		G5	S4					L4		Y	Woodlands and wetlands***
Mammal	White-tailed Deer	<i>Odocoileus virginianus</i>		G5	S5					L4	Y	Y	Woodlands, forest edge and wooded anthropogenic, or successional area***
Mammal	Muskrat	<i>Ondatra zibethicus</i>		G5	S5					L4	Y	Y	Wetlands***
Mammal	Hairy-tailed Mole	<i>Parascalops breweri</i>		G5	S4					L3		Y	Wetlands***
Mammal	Raccoon	<i>Procyon lotor</i>		G5	S5					L5	Y	Y	Woodlands***
Mammal	Gray Squirrel	<i>Sciurus carolinensis</i>		G5	S5					L5	Y	Y	Woodlands***
Mammal	Eastern Cottontail	<i>Sylvilagus floridanus</i>		G5	S5					L4	Y	Y	Woodlands***
Mammal	Eastern Chipmunk	<i>Tamias striatus</i>		G5	S5					L4	Y	Y	Woodlands***
Mammal	Red Squirrel	<i>Tamiasciurus hudsonicus</i>		G5	S5					L4	Y	Y	Woodlands***
Mammal	Red Fox	<i>Vulpes vulpes</i>		G5	S5					L4	Y	Y	Woodlands***
Reptile	Snapping Turtle	<i>Chelydra serpentina</i>		G5	S3	SC	SC	SC		L3	N	Y	Wetlands***
Reptile	Midland Painted Turtle	<i>Chrysemy picta marginata</i>		G5T5	S4		SC			L3	N	Y	Wetlands***
Reptile	Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>		G5T5	S5					L4	Y	Y	Wetlands***
Reptile	Pond Slider	<i>Trachemys scripta</i>		G5	SNA					L+	N	Y	Wetlands***



\*Determined by experience of the authors and the Wildlife Habitat Technical Guide (MNR 2000)

\*\*Ecoregion 6E and 7E Ecoregion Schedules for the Significant Wildlife Habitat Guide (2015)

\*\*\*NatureServe Explorer (<https://explorer.natureserve.org/>)

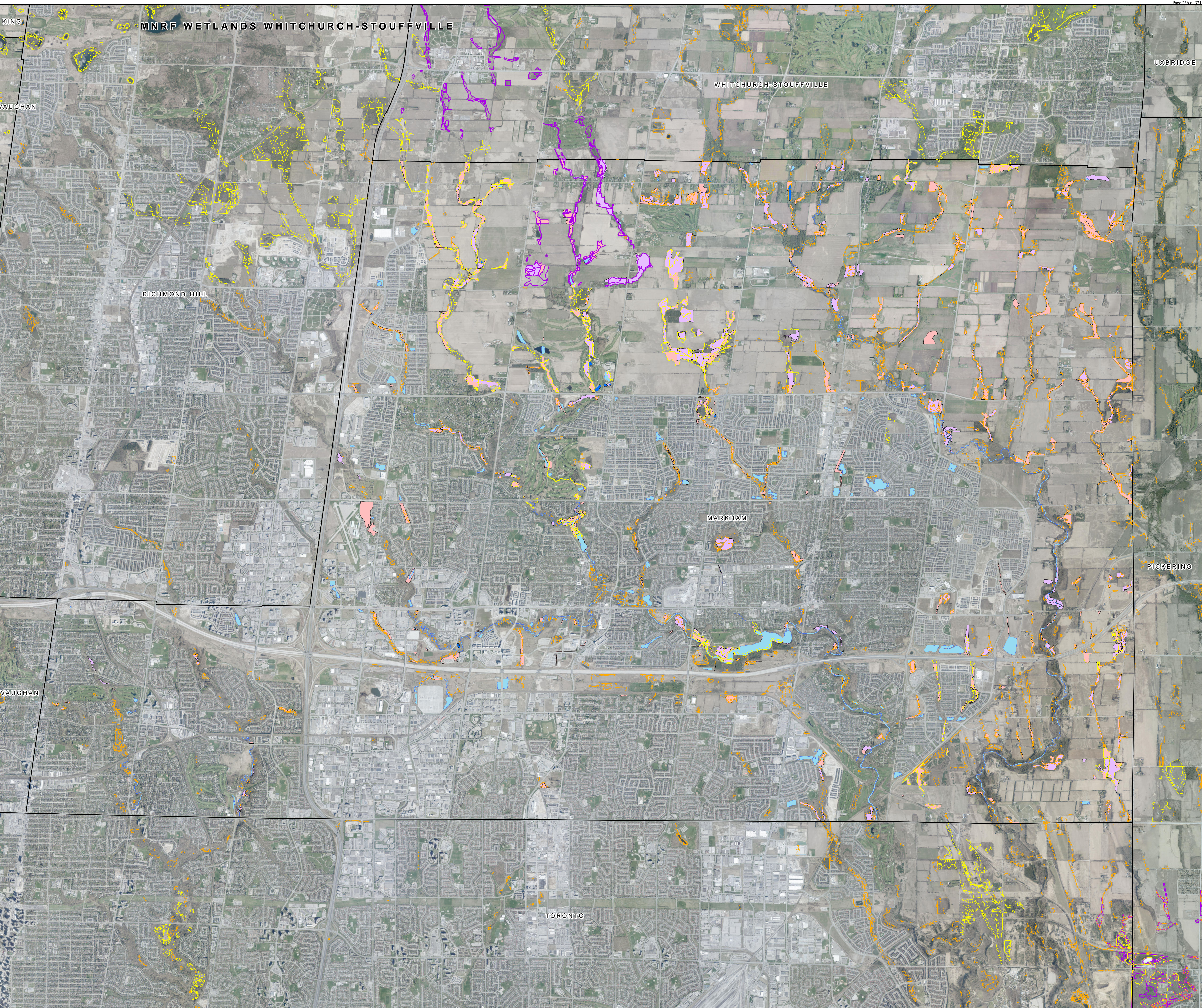


## **APPENDIX 5 |** MNRF Wetland Mapping



Appendix page





- Legend**
- MNR Evaluated Wetland
  - MNRF Identified Wetlands
  - MNRF Identified Wetlands (Northern Markham)
- CommunityC**
- Fen
  - Marsh
  - Open Water
  - Shallow Water
  - Swamp

**PUBLICATION**

© Queen's Printer for Ontario  
Printed in Ontario, Canada  
February 5, 2021

Cartography by Aurora District  
Geomatics.

Universal Transverse Mercator  
(6 degree) projection, Zone 17,  
North American Datum 1983

**SOURCE OF INFORMATION**

Information provided by the Ministry of Natural Resources & Forestry district office in Aurora.  
Ministry of Natural Resources & Forestry - Aurora District 50 Bloomington Road West, Aurora, ON L4G 0L8

Base information derived from the Ontario Base Map, 1983 at a scale of 1:10,000 and the Natural Resources Values Information System (NRVIS).

**NOTE**

The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should be viewed as illustrative only. Do not rely on it as being a precise indicator of routes, locations of features, nor as a guide to navigation.

For detailed information on natural features such as their location, size or status, the individual files held by the Aurora district office of the Ministry of Natural Resources & Forestry should be consulted.

Imagery capture date: Spring 2018 copyright, J.D. Barnes and Land Information Ontario  
May Not be Reproduced without Permission. THIS IS NOT A PLAN OF SURVEY





Report to: Development Services Committee

Meeting Date: May 3, 2021

**SUBJECT:** RECOMMENDATION REPORT  
 Southshore Investments Inc. (Ford/Lincoln), 4592 and 4600 Highway 7 East, Site Plan Approval Application to facilitate a new automobile dealership (Ward 3)  
 File No. SPC 20 107969

**PREPARED BY:** Dimitri Pagratis, M.C.I.P., R.P.P., extension 2960  
 Senior Planner, Central District

**REVIEWED BY:** Stephen Lue, M.C.I.P., R.P.P. extension 2520  
 Manager, Central District

## **RECOMMENDATION:**

1. THAT the report titled “RECOMMENDATION REPORT, Southshore Investments Inc. (Ford/Lincoln), 4592 and 4600 Highway 7 East, Site Plan Approval Application to facilitate a new automobile dealership (Ward 3), File No. SPC 20 107969”, be received; and,
2. THAT the Site Plan application (File No. SPC 20 107969) submitted by Southshore Investments Inc. (Ford/Lincoln) be endorsed in principle, subject to the conditions attached as Appendix “A” and that Site Plan Approval be delegated to the Director of Planning and Urban Design, or his designate; and,
3. THAT Site Plan Endorsement shall lapse after a period of three (3) years from the date of endorsement in the event that the Site Plan Agreement is not executed within that period; and further,
4. THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.

## **PURPOSE:**

This report recommends endorsement in principle of a Site Plan application (the “Application”) submitted by Southshore Investments Inc. (Ford/Lincoln) (the “Owner”) to facilitate the development of a new automobile dealership at 4592 and 4600 Highway 7 East.

## **BACKGROUND:**

### **Site and Area context**

The lands, municipally known as 4592 and 4600 Highway 7 East (the “subject lands”), are located on the north side of Highway 7 East, west of Kennedy Road, as shown on Figure 1. Figure 3 shows the surrounding land uses.

The Subject Lands have a combined area of approximately 0.81 ha (2.01 ac) and a frontage of approximately 86 m (282 ft.) along Highway 7. The portion of the Subject lands municipally known as 4600 Highway 7 East contains an existing building that was previously occupied by an automobile dealership (Village Luxury Cars). The portion of



the Subject Lands municipally known as 4592 Highway 7 East contains a building of heritage significance (the “Bewell Bungalow”), which was previously occupied by a commercial operation (Enterprise Rent-a-Car). A landscape buffer with mature trees is located on the south portion of the Subject Lands.

### Process to date

- The Site Plan application was submitted on February 4, 2020
- The Owner submitted a Minor Variance Application (File A/143/20) to amend the minimum landscape setbacks along Highway 7 and to reduce parking standards. The City’s Committee of Adjustment approved Minor Variances (File A/143/20) on March 10, 2021.

### Next Steps

- Subject to endorsement in principle by DSC, the site plan would be formally endorsed by Staff subject to the endorsement conditions attached to this report (Appendix “A”).
- Site Plan Approval can be issued upon execution of a Site Plan Agreement, after clearance of endorsement conditions.

### The Proposed Development

The proposed development is for a new automobile dealership (Ford/Lincoln) on the Subject Lands. The Owner proposes to demolish the existing automobile dealership building at 4600 Highway 7 East and replace it with a new automobile dealership. The two properties comprising the Subject Lands (4592 and 4600 Highway 7 East) are currently divided into two separate parcels, but must be merged on title to create one contiguous parcel for zoning and other purposes. Conditions of draft plan approval set out in Appendix A to this report, require a letter to be submitted to the City from the owner’s solicitor prior to draft plan approval confirming that the merger has occurred.

The proposed two-storey automobile dealership consists of a motor vehicle sales and showroom, service department, parts room, motor vehicle storage, and office uses (the “Proposed Development”) and the following, as shown on Figure 4 and 5:

<b>Table 1: Proposed Development (Ford/Lincoln)</b>	
<b>Gross Floor Area (“GFA”)</b>	4,759 m <sup>2</sup> (51,225 ft <sup>2</sup> )
<b>Parking</b>	102 parking spaces (including five barrier-free spaces)
<b>Access</b>	Two separate right-in right-out accesses from Highway 7
<b>Heritage</b>	Retaining the Bewell Bungalow as a building of heritage significance

### Official Plan and Zoning

#### 2014 Markham Official Plan (the “2014 OP”)

The Subject Lands are designated “Mixed Use Low Rise” and “Special Policy Area” in the 2014 Official Plan. The site-specific zoning by-law, described below, pre-dates the current 2014 Official Plan designations. While the current Mixed Use Low Rise



designation of the 2014 Official Plan does not provide for the automobile dealership use, Section 11.1.3 of the 2014 Official plan recognizes that development and land uses legally existing at the time the Plan was approved shall be deemed to conform to the Plan.

The “Special Policy Area” (“SPA”) designation applies mostly on the west half of the Subject Lands, and are subject to “Area and Site Specific Policy” Section 9.19.7. The Proposed Development satisfies the SPA development criteria of the 2014 Official Plan as it continues an existing use on the Subject Lands and provides for suitable redevelopment that conforms with the policies.

#### Zoning By-laws 122-72 and 134-79, as amended

The Subject Lands are split-zoned “Special Commercial 3” (SC3) under By-law 122-72, as amended by By-law No. 261-86 (at 4592 Highway 7), and By-Law 134-79 as amended by By-Law 93-81(at 4600 Highway 7), as shown on Figure 2. Both site-specific by-laws allow for automobile sales and service establishments as permitted uses.

#### Minor Variance Application

The Owner submitted a Minor Variance Application (File A/143/20) to amend the minimum landscape setbacks along Highway 7 (from 9 metres at 4600 Highway 7 and 6 metres at 4592 Highway 7 to 4 metres on both properties) and to reduce parking standards (from 106 parking spaces to 102 parking spaces). The City’s Committee of Adjustment approved the requested Minor Variance (File A/143/20) on March 10, 2021 and the decision is final and binding.

### **OPTIONS/ DISCUSSION:**

#### **Urban Design Review**

Urban Design Staff are generally satisfied with the Proposed Development. The Owner continues to work with Urban Design Staff to satisfy all outstanding matters related, but not limited to, minor updates to the site design and the finalization of site plan, landscape plans and cost estimates, and land appraisal for cash-in-lieu of parkland dedication.

#### **Heritage Planning**

The Owner originally proposed to remove the Bewell Bungalow, but through discussions with staff has agreed to retain it in situ as part of the Proposed Development, in accordance with the City’s policies.

Heritage Staff and the Heritage Markham Committee recommends the designation of the “Bewell Bungalow” under Part IV of the Ontario Heritage Act, which was also a condition of the variance approval by the Committee of Adjustment. Furthermore, as per the adopted Council policy regarding the requirement for a Heritage Conservation Easement Agreement as a condition of development approval, the Owner is to enter into a Heritage Conservation Easement Agreement with the City of Markham as a condition of site plan approval as set out in Appendix ‘A’ to this report. The Owner and staff have committed to continue to work together to satisfy all matters in this regard.



---

**York Region Review**

York Region is generally satisfied with the proposed site plan and has requested to be a party to the Site Plan Agreement.

**Toronto and Region Conservation Authority (“TRCA”) Review**

The Subject Lands lie within the TRCA regulated area, with the western portion of the Subject Lands located within the Unionville SPA. TRCA provided their comments in a letter, dated January 29, 2021, indicating no objections to the approval of the Application subject to the Owner satisfying the remaining technical comments and conditions of Site Plan Approval. The Owner continues to work with the TRCA to satisfy the conditions of approval in Appendix “A.”

**CONCLUSION**

In Staff’s opinion the Proposed Development is appropriate and represents good planning for the reasons contained in this report. Therefore, Staff recommend that the Application (File SPC 20 107969) be endorsed in principle and that authority for the final Site Plan Approval be delegated to the Director of Planning and Urban Design, subject to the conditions provided in Appendix “A.”

**FINANCIAL CONSIDERATIONS**

Not applicable

**HUMAN RESOURCES CONSIDERATIONS**

Not applicable

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

The Proposed Development has been reviewed in the context of a safe, sustainable and complete community.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

The Proposed Development was circulated to internal City departments and external agencies, including York Region and TRCA, for review and comment. All comments/requirements of these departments and agencies are reflected in the final project plans or will be secured in the Site Plan Agreement.

**RECOMMENDED BY:**

---

Arvin Prasad, M.C.I.P, R.P.P  
Commissioner of Development Services

---

Biju Karumanchery, M.C.I.P, R.P.P  
Director, Planning and Urban Design



**ATTACHMENTS:**

Figure 1: Location Map

Figure 2: Area Context/Zoning

Figure 3: Aerial Photo (2020)

Figure 4: Site Plan

Figure 5: Elevations

**APPENDICES:**

Appendix “A” – Conditions of Site Plan Approval

File path: Amanda\File 20 107969\Documents\Recommendation Report



---

**APPENDIX “A”  
City of Markham  
Conditions of Site Plan Approval  
Southshore Investments Inc. 4592 and 4600 Highway 7 East  
File No. SPC 20 107969**

1. Site Plan Endorsement

Prior to Site Plan Endorsement, the following shall be fulfilled:

- a) The Owner shall provide a clearance letter from the Trustee of the Landowners Group advising that the Owner has met their cost sharing obligations.
- b) The Owner shall satisfy all waste management comments, including any internal and external waste room requirements.
- c) The Owner shall satisfy all outstanding comments and technical requirements of City departments and applicable external agencies, and make necessary revisions, to the satisfaction of the Director of Engineering and the Director of Planning and Urban Design.

2. Site Plan Agreement

The Owner shall enter into a Site Plan Agreement with the City, containing all standard and special provisions and requirements of the City and applicable external agencies including, but not limited to the following:

- a) Provision for the payment by the Owner of all applicable fees, recoveries, development charges, cash-in-lieu of parkland, and any other financial obligations and securities.
- b) Provision for any easements and right-of-way dedications, if applicable.
- c) Provision to ensure all requirements of York Region are satisfied.
- d) Provision to ensure all requirements of the Toronto and Region Conservation Authority are satisfied.
- e) The Owner agrees to finalize and implement the Transportation Demand Management Plan and provide the respective Letter of Credit, to the satisfaction of the Director of Engineering.
- f) The Owner agrees to implement bird-friendly measures and dark sky lighting, to the satisfaction of Director of Planning and Urban Design.
- g) Provisions to ensure all waste management requirements are satisfied.



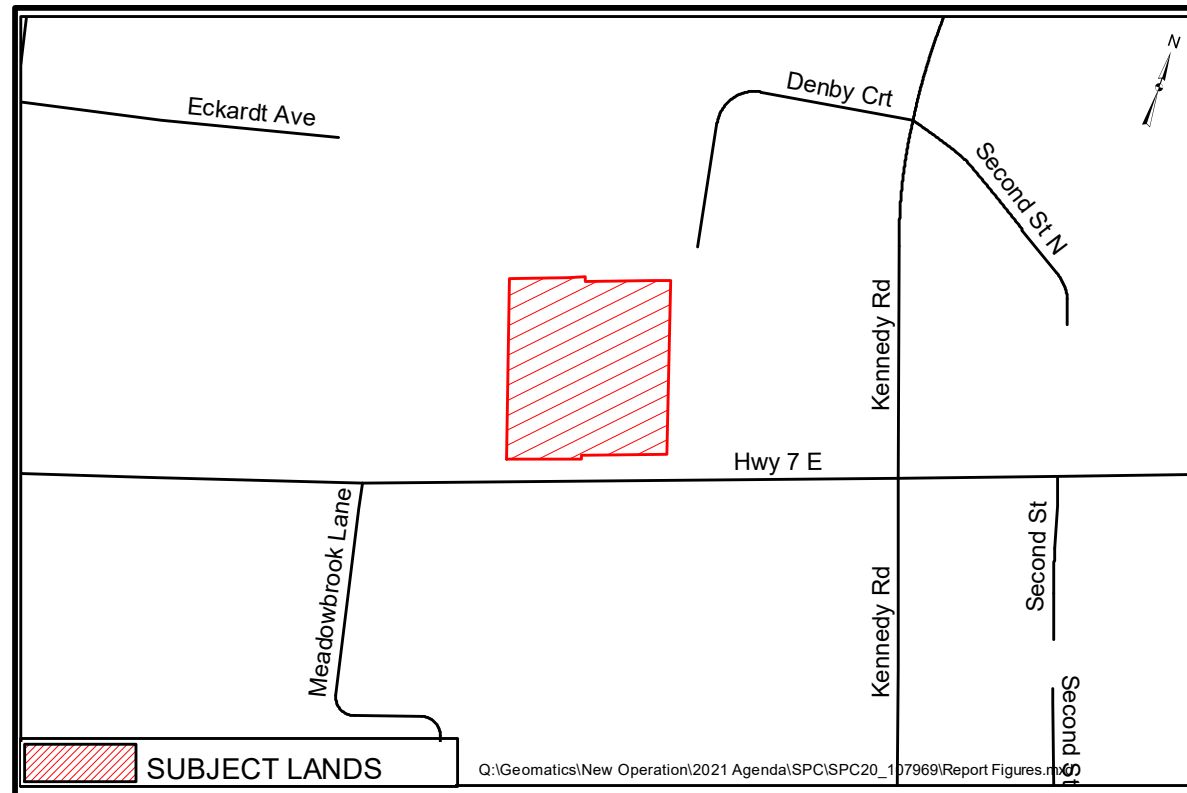
- h) Provisions to ensure all Fire and Emergency Services requirements are satisfied.

3. Site Plan Approval

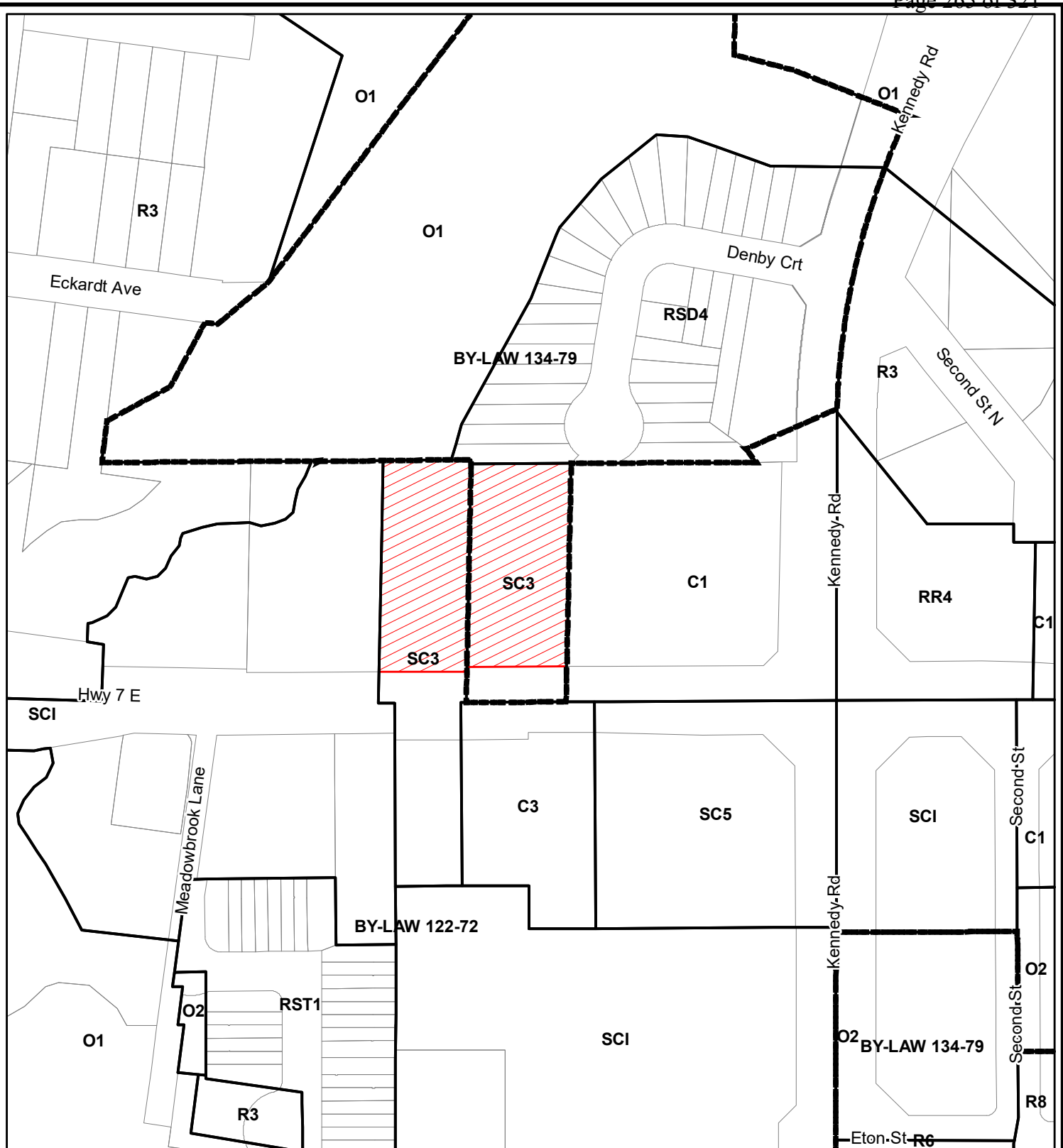
Prior to the execution of Site Plan Agreement and issuance of Site Plan Approval, the Owner shall ensure the following:

- a) The Owner submit final site plans, building elevations, engineering, drawings, lighting plans, landscape plans and cost estimates, arborist report, tree preservation plan, along with any other drawings, plans, studies and reports including, but not limited to, a Construction Management Plan, which are required to comply with the requirements of the City and applicable external agencies, to the satisfaction of the Director of Planning and Urban Design and Director of Engineering..
- b) That the Owner shall provide a solicitor's opinion, to the satisfaction of the City Solicitor, or designate, that the properties known as 4592 and 4600 Highway 7 East have merged-in-title.
- c) The designation of the "Bewell Bungalow" under Part IV of the *Ontario Heritage Act* and that the Owner enter into a Heritage Conservation Easement Agreement with the City of Markham for the portion of the property containing the heritage resource as defined by an R-Plan to be provided by the owner.









# AREA CONTEXT / ZONING

APPLICANT: 4600 7 Highway E - Markville Ford Lincoln  
4592 & 4600 Highway 7 East

FILE No. SPC 20 107969

 SUBJECT LANDS

Q:\Geomatics\New Operation\2021 Agenda\SPC\SPC20\_107969\Report Figures.mxd

DATE: 19/03/2021



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: DP

FIGURE No. 2





# AERIAL PHOTO (2020)

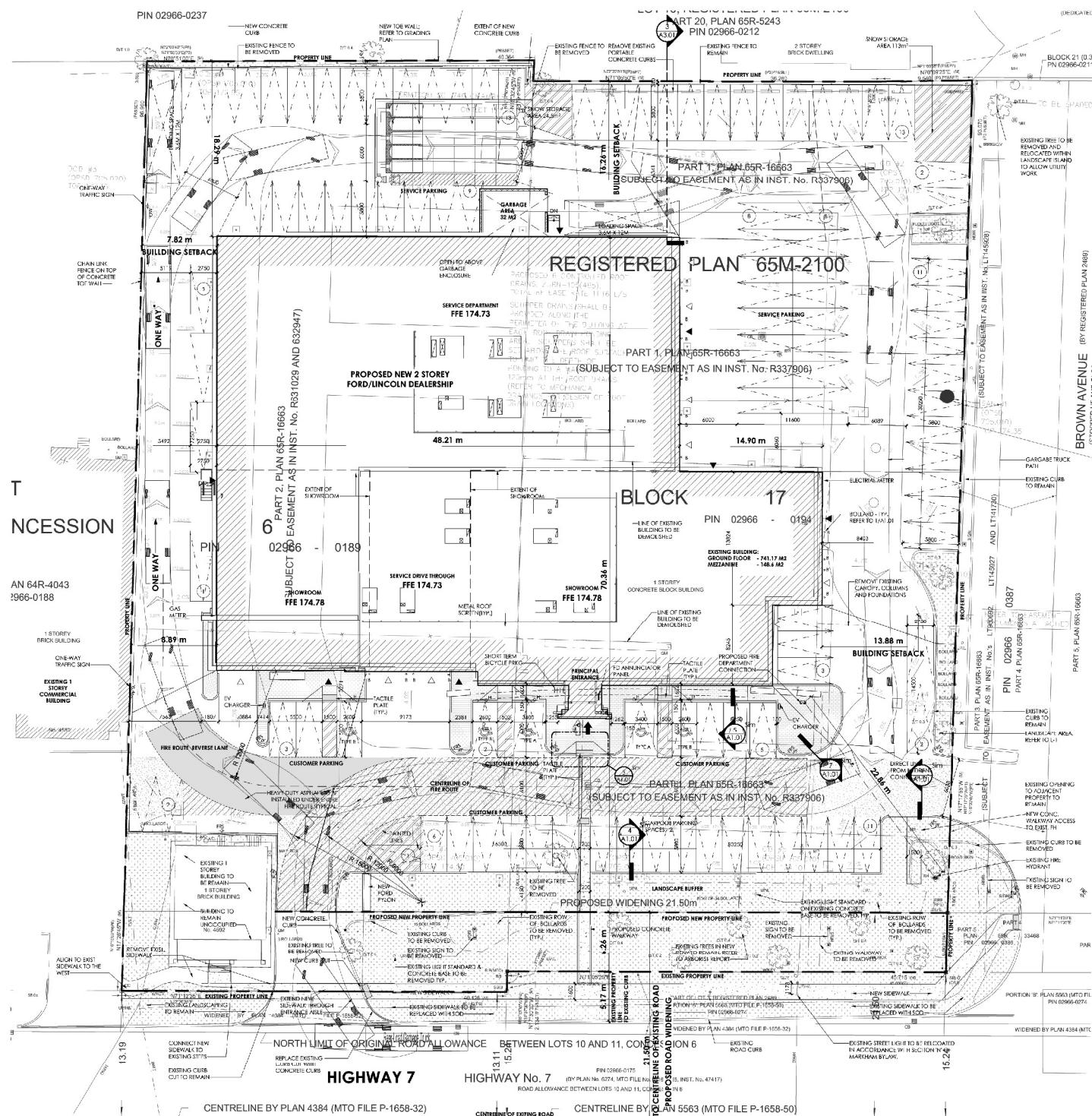
APPLICANT: 4600 7 Highway E - Markville Ford Lincoln  
4592 & 4600 Highway 7 East

FILE No. SPC 20 107969

 SUBJECT LANDS

Q:\Geomatics\New Operation\2021 Agenda\SPC\SPC20\_107969\Report Figures.mxd





# SITE PLAN

APPLICANT: 4600 7 Highway E - Markville Ford Lincoln  
4592 & 4600 Highway 7 East

FILE No. SPC 20 107969

Q:\Geomatics\New Operation\2021 Agenda\SPC\SPC20\_107969\Report Figures.mxd

**MARKHAM** DEVELOPMENT SERVICES COMMISSION

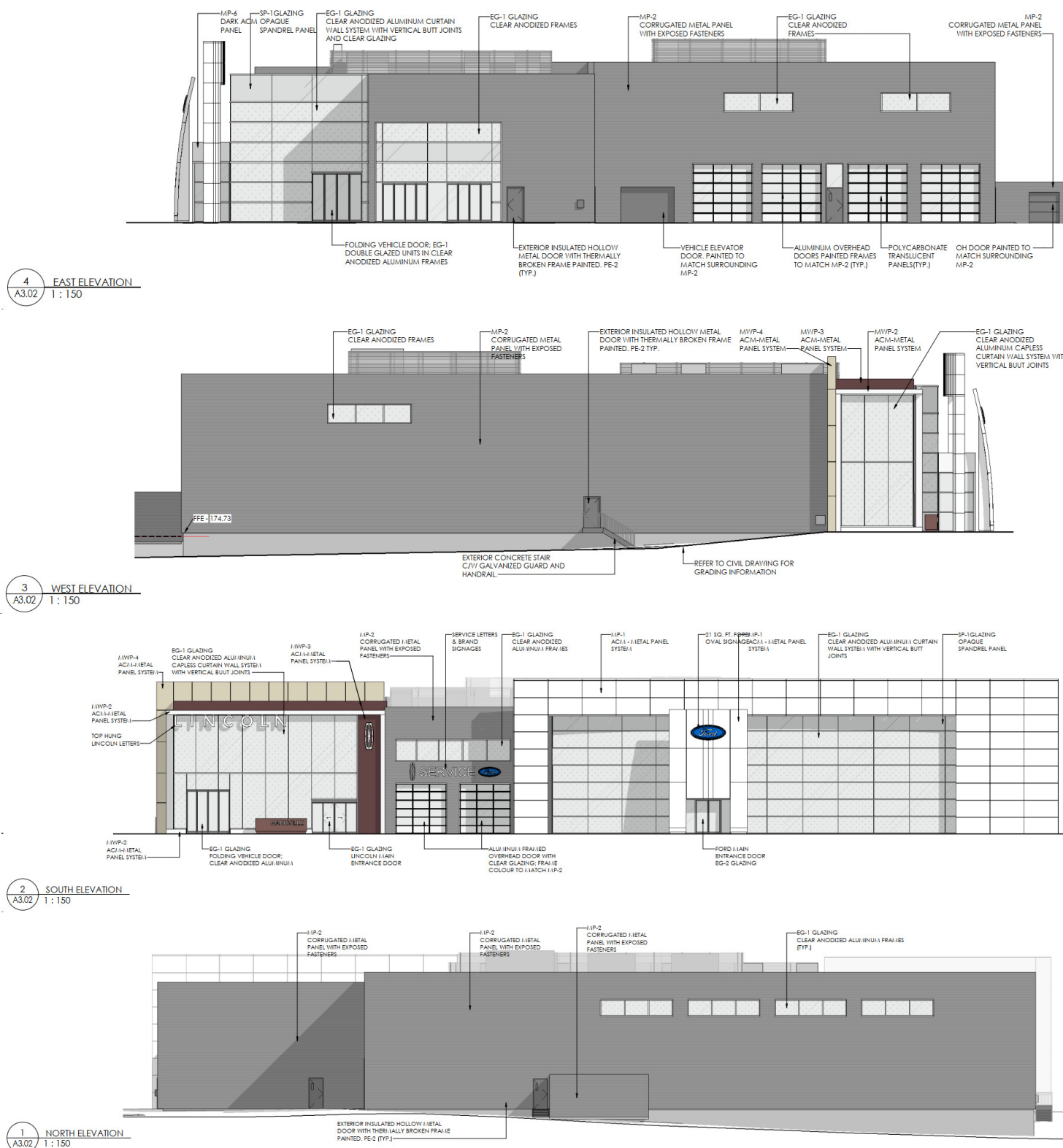
Drawn By: RT

Checked By: DP

DATE: 19/03/2021

FIGURE No. 4





# ELEVATIONS

APPLICANT: 4600 7 Highway E - Markville Ford Lincoln  
4592 & 4600 Highway 7 East

FILE No. SPC 20 107969

Q:\Geomatics\New Operation\2021 Agenda\SPC\SPC20\_107969\Report Figures.mxd

DATE: 19/03/2021

FIGURE No. 5





Report to: Development Services Committee

Meeting Date: May 3, 2021

**SUBJECT:** Preliminary Report, Applications by Timbercreek Four Quadrant GP2 Inc., for Official Plan and Zoning By-law Amendments to permit five (5) mixed use buildings at 288, 298, and 300 John Street, File No. PLAN 20 130784 (Ward 1)

**PREPARED BY:** Rick Cefaratti, MCIP, RPP  
Senior Planner, West District, (Ext. 3675)

**REVIEWED BY:** Ron Blake, MCIP, RPP  
Senior Development Manager, West District, (Ext. 2600)

### **RECOMMENDATION:**

That the report entitled “Preliminary Report, Applications by Timbercreek Four Quadrant GP2 Inc., for Official Plan and Zoning By-law Amendments to permit five (5) mixed use buildings at 288, 298, and 300 John Street, File No. PLAN 20 130784 (Ward 1)”, be received.

### **PURPOSE:**

This report provides preliminary information on Official Plan and Zoning By-law Amendment applications submitted by Timbercreek Four Quadrant GP2 Inc., to permit a mixed use development on the subject lands. This report contains general information in regards to applicable Official Plan and other policies as well as development issues and should not be taken as Staff’s opinion or recommendations on the applications.

### **Process to date:**

The applications to amend the Official Plan and Zoning By-law were deemed complete on November 20, 2020.

### **Next Steps:**

1. A Statutory Public Meeting, to be scheduled at a future date when appropriate;
2. Staff will prepare a Recommendation Report on the Official Plan and Zoning By-law amendments at a future date;
3. If the applications are approved then future applications for Site Plan approval, and Draft Plan of Condominium approval are required;

### **BACKGROUND:**

The 3.13 ha. (7.7 ac.) subject lands are located approximately 170 m (558 ft.) east of Bayview Avenue and immediately east of the Thornhill Community Centre, on the north side of John Street and the south side of Green Lane, with frontage on both these streets (see Figure 1 – Location Map, Figure 2 – Area Context and Zoning Map, and Figure 3 – Air Photo). Located to the north of the property are three (3) residential high rise apartment buildings (Landmark of Thornhill) that range between twelve (12) and fifteen (15) storeys in height, a fire station (Fire Hall #91) and neighbourhood plaza, fronting on the north side of Green Lane. There are condominium townhouses located to the south, in the Johnsville Village neighbourhood across John Street. To the east is a publicly accessible, private, north south driveway that links John Street with Green Lane and



provides access to adjacent uses. These uses include a mixed use mid rise development consisting of at-grade commercial uses and stacked townhouses above, a place of worship (St. Luke's Catholic Church), a seniors housing residence (St. Luke's Lodge), and the CN Rail/GO corridor. Located to the west is the Thornhill Community Centre and further west, across Bayview Avenue is a private hospital (Shouldice Hospital), a seniors housing facility (HCN-Revera Glynnwood) and low rise residential to the south. There is a proposal to develop five (5) high rise residential towers on the Shouldice Hospital site which is currently under review. In addition, the expansion proposal for an eight (8) storey building on the HCN-Revera Glynnwood seniors housing facility is currently on hold.

The subject lands contain a surface parking lot, two (2) commercial buildings with a grocery store (Food Basics) and a mid-rise office building, a drug store (Shoppers Drug Mart) and a variety of other low rise retail, service commercial and medical office uses. It also contains a heritage building circa 1858 (The John Welsh House "Thornlea", 288 John Street). The heritage building is listed on the Markham Register of Property of Cultural Value or Interest and has been designated as a heritage building under By-law 66-94. The heritage building is currently occupied by a restaurant. The municipal boulevards along John Street and Green Lane are lined with mature trees.

Vehicular access to the subject lands is provided via the private, publicly accessible driveway on the east side noted above, which will be retained.

### **Proposal**

The applicant is proposing to develop five (5) mixed use buildings on the subject lands (see Figure 4 – Site Plan, and Figures 5, 6, 7 and 8 – Massing Views for Buildings A, B, C, D and E). The redevelopment of the subject lands will occur in three phases and proposes:

- A total of 579 residential units to be built in 3 phases:
  - Phase 1: Buildings A and B – fifteen (15) and thirteen (13) storey towers connected by a four (4) storey podium (Buildings A and B – 251 units);
  - Phase 2: Buildings C and D – ten (10) and eight (8) storey towers each with separate four (4) storey podia (Building C – 112 units, Building D – 108 units);
  - Phase 3: Building E – eight (8) storey tower with a four (4) storey podium (108 units);
- A total Residential Gross Floor Area (GFA) of 44,404 m<sup>2</sup> (477,960 ft<sup>2</sup>);
- A total combined Retail and Commercial GFA of 12,195 m<sup>2</sup> (131,266 ft<sup>2</sup>) for all 3 phases:
  - Phase 1: Building A and B – Retail and Commercial GFA of 9,000 m<sup>2</sup> (96,975 ft<sup>2</sup>);
  - Phase 2: Buildings C and D – Retail GFA of 2,361 m<sup>2</sup> (25,414 ft<sup>2</sup>);
  - Phase 3: Building E – Retail GFA of 834 m<sup>2</sup> (8,977 ft<sup>2</sup>);
- A total area of 1,166 m<sup>2</sup> (12,560 ft<sup>2</sup>) for indoor amenity space;
- A total area of 1,166 m<sup>2</sup> (12,560 ft<sup>2</sup>) for outdoor amenity space;
- A site density of 2.0 FSI;



- 
- A total of 1,050 parking spaces: 637 residential spaces and 413 spaces for retail and visitors (968 spaces are proposed to be located within two (2) levels of underground parking and 82 spaces are proposed at-grade);
  - A total of 179 bicycle parking spaces;
  - A 0.33 ha. (0.81 ac.) public park on the southwest portion of the subject lands, adjacent to the Thornhill Community Centre and with frontage on John Street, is proposed to be conveyed to the City;
  - The retention of the existing The John Welsh House "Thornlea" heritage building;

#### Rental Units Proposed

The applicant has indicated that market based rental units will form a significant part of the development proposal.

### **Provincial and Regional Policy Framework**

#### Provincial and Regional Policy Conformity

This proposal must be consistent with the Regional Official Plan, Provincial Policy Statement, 2020, and conform to the Growth Plan for the Greater Golden Horseshoe, 2019, and the Planning Act. It will be evaluated against this Policy Framework during the processing of this application.

### **Markham Official Plan**

#### Markham Official Plan 2014

The subject lands are designated 'Mixed Use Mid Rise' under the Markham Official Plan 2014 (as partially approved on November 24, 2017 and further updated by the Local Planning Appeal Tribunal on April 9, 2018). The 'Mixed Use Mid Rise' designation provides for a broad range of uses including residential dwellings, retail, restaurants, service, hotels, commercial parking garages, commercial schools, as well as sports and fitness centres. The 'Mixed Use Mid Rise' designation permits a maximum building height of eight (8) storeys and a maximum overall site density of up to 2.0 FSI. The subject lands are further identified under the Site Specific Policy 9.18.11 as being located within the Local Centre of Thornhill Centre which is intended to serve as a focal point for the surrounding community and provide a range of housing, employment, shopping and recreational opportunities.

An amendment to the Markham Official Plan 2014 is required to permit the proposed development. Consequently, the applicant is seeking to amend the Markham Official Plan 2014 by re-designating the subject lands from 'Mixed Use Mid Rise' to 'Mixed Use High Rise'.

### **Zoning**

The subject property is zoned Community Amenity One (CA1), under By-law 1767, as amended (see Figure 2). Permitted uses within the CA1 zone category include, but are not limited to, townhouses, multiple unit buildings, retail stores, offices, a shopping centre, restaurants, and personal service shops.

The applicant is proposing a number of exceptions to the current zoning including:



- 
- A maximum of 579 dwelling units, whereas a maximum of 356 dwelling units are permitted;
  - A minimum of 413 parking spaces are proposed for visitor and commercial purposes, whereas under the City's Parking By-law, a minimum of 592 parking spaces are required for the proposed non-residential uses. Therefore the applicant is requesting a parking reduction of 179 parking spaces for the proposed non-residential uses;
  - A maximum building height of 15 storeys, whereas a maximum of 6 storeys is permitted;

A Zoning By-law amendment is required to permit the increase in the number of units, reduction in required parking and maximum number of storeys as noted above. The requirement for additional site specific exceptions to the zoning by-law will be determined following the submission and review of a formal application for site plan approval.

#### **OPTIONS/ DISCUSSION:**

Issues or concerns identified through the detailed review of these applications and public meetings will be discussed in a future recommendation report to DSC. Some of the preliminary matters identified for consideration include, but are not limited to, the following:

- 1) Review of the submitted Planning Opinion Report, draft OPA and ZBA, prepared by the Goldberg Group Land Use Planning and Development consulting firm. Staff will provide further comments on these documents, if required, in a future Recommendation Report.
- 2) Review of the appropriateness of the proposed development having regard for the following:
  - a) Compatibility with the existing and planned surrounding land uses;
  - b) The appropriateness of the proposed uses, density and building heights;
  - c) Staff are reviewing the proposed development standards in the context of the existing and planned uses;
  - d) Opportunities to provide an appropriate balance of affordable housing, purpose-built rental, senior focused housing, and family oriented unit sizes. Based on the conceptual site statistics provided, the applicant is proposing to provide a mix of 1, 2 and 3 bedroom apartment units. Region of York staff have also commented that they encourage the inclusion of affordable rental housing as part of the proposal;
  - e) Built form and massing, building orientation, and transitions with a focus on impacts to the existing multiple dwellings east of the subject lands and to the townhouses to the south across John Street;
  - f) Urban Design Staff are reviewing the supporting studies submitted with the applications including a Wind Study and a Shadow Study to ensure the wind and shadow conditions will comply with the City's requirements;



- 
- g) Development Engineering staff is reviewing the Functional Servicing Report prepared by Counterpoint Engineering Inc., to determine whether upgrades to sanitary sewer infrastructure is required to accommodate the proposed development;
  - h) Transportation Planning staff are reviewing a Transportation Impact and Parking Study, prepared by the LEA Consulting Ltd., submitted with the applications;
  - i) Impacts on existing community and recreation facilities serving the area;
  - j) The conceptual site plan (see Figure 4) proposes a 0.33 ha. (0.81 ac.) public park at the south end of the site fronting on to John Street, whereas the parkland dedication requirement for the proposal is 1.4 ha. (3.46 ac.). Staff will work with the applicant to determine the appropriate amount of parkland that should be provided on site as part of this development as well as the appropriate amount of cash-in-lieu of parkland contribution, or off-site park conveyance;
  - k) Consideration of Public Art and other public benefits (Section 37 of the *Planning Act*);

#### **FINANCIAL CONSIDERATIONS**

Not applicable.

#### **HUMAN RESOURCES CONSIDERATIONS**

Not applicable.

#### **ALIGNMENT WITH STRATEGIC PRIORITIES:**

The application is being evaluated in the context of the City's strategic priorities, including Growth Management and Municipal Services.

#### **BUSINESS UNITS CONSULTED AND AFFECTED:**

The applications have been circulated to various City departments and external agencies and are currently under review.

#### **RECOMMENDED BY:**

Biju Karumanchery  
Director of Planning and Urban Design

Arvin Prasad, M.C.I.P., R.P.P.  
Commissioner, Development Services

#### **ATTACHMENTS:**

Figure 1 – Location Map  
 Figure 2 – Area Context/Zoning  
 Figure 3 – Air Photo  
 Figure 4 – Site Plan  
 Figure 5 – Massing View – Buildings A and B  
 Figure 6 – Massing View – Building C  
 Figure 7 – Massing View – Building D  
 Figure 8 – Massing View – Building E



**OWNER:**

Timbercreek Four Quadrant GP2 Inc.

C/O Ryan Ng

1133 Yonge Street 4<sup>th</sup> Floor

Toronto, ON M4T 2Y7

Email: [mg@timbercreek.com](mailto:mg@timbercreek.com)

Tel: 647-261-5985

**APPLICANT/AGENT:**

Goldberg Group

C/O Todd Trudelle

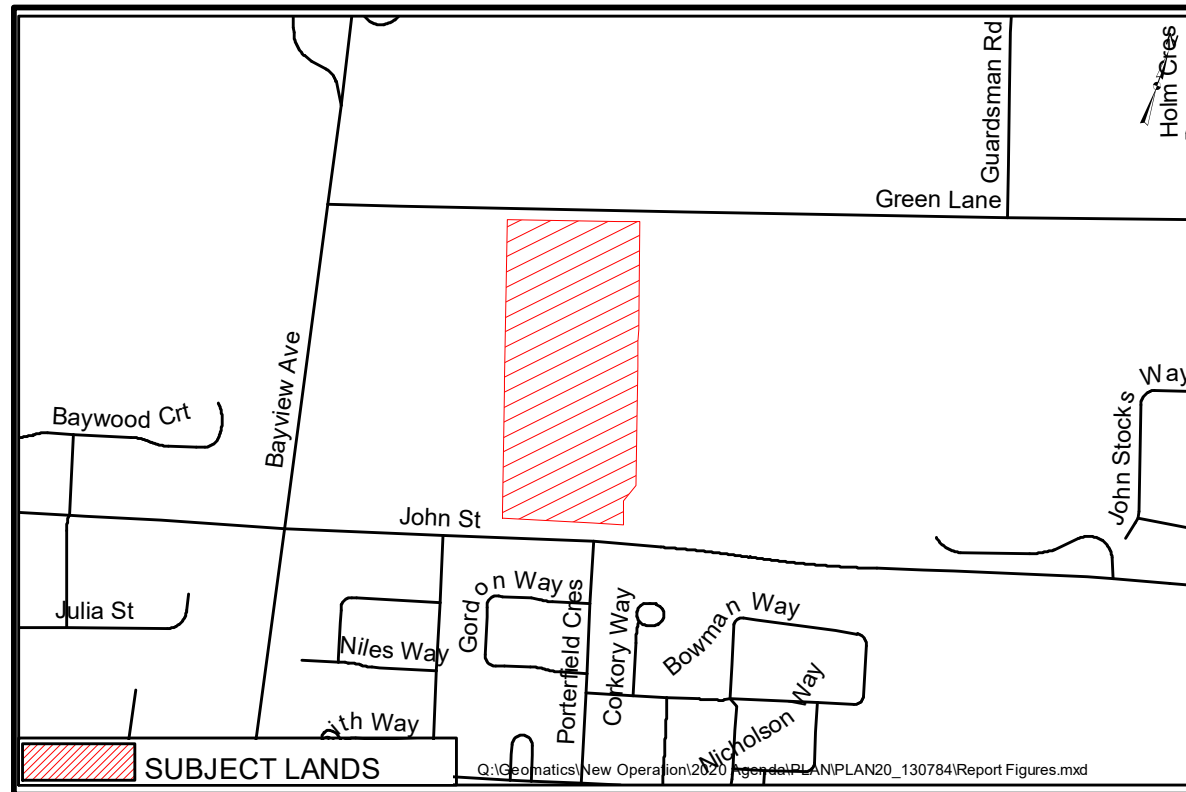
2098 Avenue Road

Toronto, ON M5M 4A8

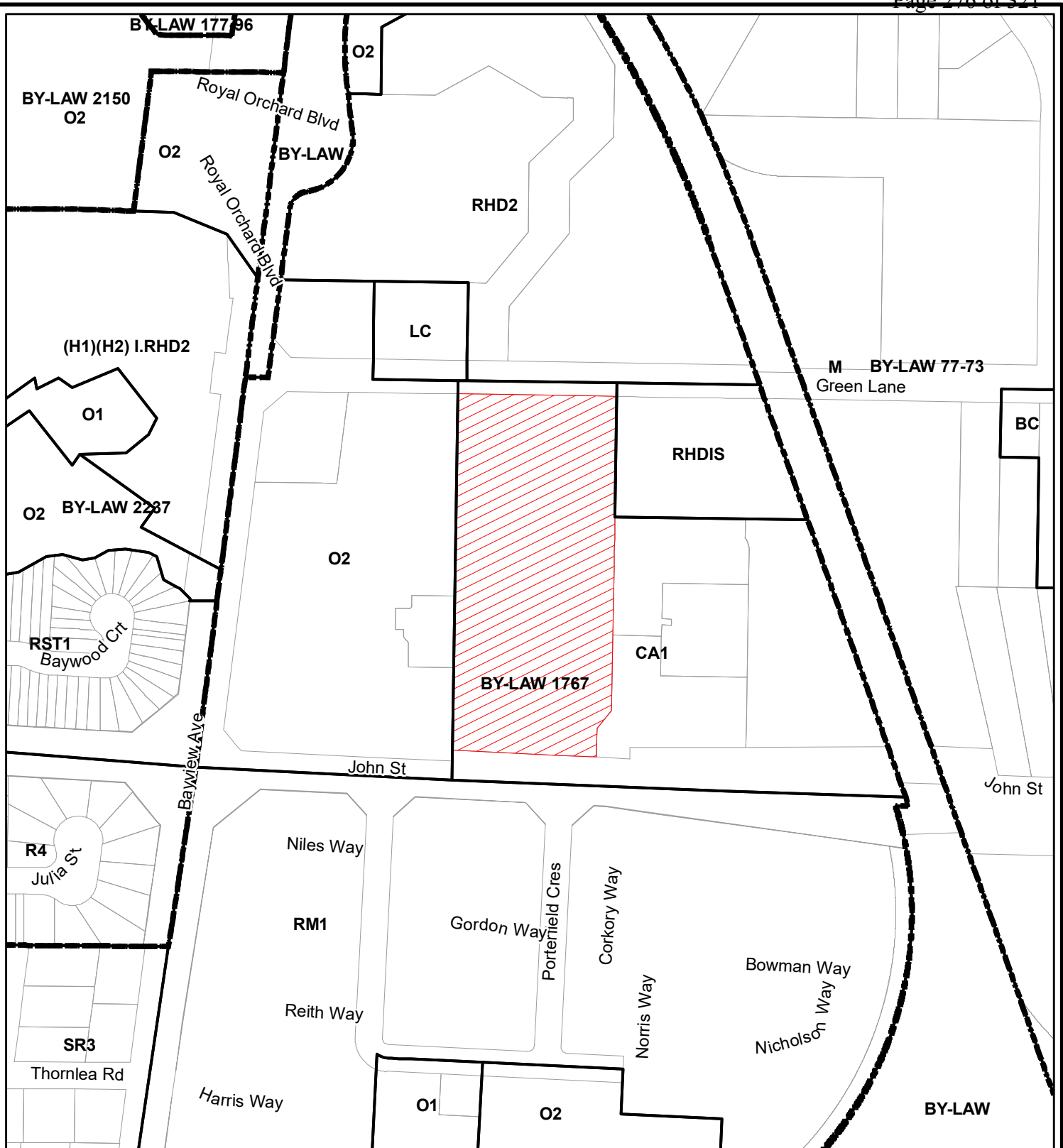
Email: [ttrudelle@goldberggroup.ca](mailto:ttrudelle@goldberggroup.ca)

Tel: 416-322-6364









# AREA CONTEXT / ZONING

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

 SUBJECT LANDS

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd

DATE: 24/01/2021



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

FIGURE No. 2





# AERIAL PHOTO (2020)

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

 SUBJECT LANDS

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

DATE: 24/01/2021

FIGURE No. 3





## FIGURE No. 4







VIEW LOOKING SOUTH EAST AT BUILDING A+B



VIEW LOOKING NORTH EAST AT BUILDING A+B



VIEW LOOKING SOUTH WEST AT BUILDING A+B



VIEW LOOKING NORTH WEST AT BUILDING A+B

# MASSING VIEW - BUILDINGS A & B

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

DATE: 24/01/2021

FIGURE No. 5





VIEW LOOKING SOUTH EAST AT BUILDING C



VIEW LOOKING NORTH EAST AT BUILDING C



VIEW LOOKING SOUTH WEST AT BUILDING C



VIEW LOOKING NORTH WEST AT BUILDING C

# MASSING VIEW - BUILDING C

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

DATE: 24/01/2021

FIGURE No. 6





VIEW LOOKING SOUTH EAST AT BUILDING D



VIEW LOOKING NORTH EAST AT BUILDING D



VIEW LOOKING SOUTH WEST AT BUILDING D



VIEW LOOKING NORTH WEST AT BUILDING D

# MASSING VIEW - BUILDING D

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

DATE: 24/01/2021

FIGURE No. 7





VIEW LOOKING SOUTH EAST AT BUILDING E



VIEW LOOKING EAST AT BUILDING E



VIEW LOOKING WEST AT BUILDING E



VIEW LOOKING NORTH WEST AT BUILDING E

# MASSING VIEW - BUILDING E

APPLICANT: 300 John Street  
288, 298 & 300 John Street

FILE No. PLAN 20 130784

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_130784\Report Figures.mxd

DATE: 24/01/2021



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RC

FIGURE No. 8





Report to: Development Services Committee

Meeting Date: May 3, 2021

**SUBJECT:** **PRELIMINARY REPORT** Applications by 2637996 Ontario Inc. c/o SmartCentres for Official Plan and Zoning By-law Amendments to permit a six storey retirement residence incorporating existing heritage buildings at 134, 136, 140, 144, 152 Main Street North, 12 Wilson St. (Ward 4) File No.: PLAN 20 136386

**PREPARED BY:** Peter Wokral, Senior Heritage Planner ext. 7955

**REVIEWED BY:** Regan Hutcheson, MCIP, RPP, Manager, Heritage Planning ext. 2080

### **RECOMMENDATION:**

1. THAT the report dated May 3, 2021 titled “PRELIMINARY REPORT, Applications by 2637996 Ontario Inc. c/o SmartCentres for Official Plan and Zoning By-law Amendments to permit a six storey retirement residence incorporating existing heritage buildings at 134, 136, 140, 144, 152 Main Street North, 12 Wilson St. (Ward 4), File No.: PLAN 20 136386”, be received.

### **PURPOSE:**

This report provides preliminary information on the Official Plan and Zoning By-law Amendment applications (the “Applications”) submitted by 2637996 Ontario Inc. c/o SmartCentres (the “Owner”). This report contains general information regarding applicable policies, as well as other issues, and should not be taken as Staff’s opinion or recommendation on the Applications.

### **Process to date:**

- The Applications were deemed complete on February 1, 2021. The 120-day period under the Planning Act for Council to issue a notice of decision expires on May 31, 2021.

### **Next steps**

- Holding a Statutory Public Meeting at a future date, when appropriate
- Recommendation Report for DSC’s consideration at a future date
- Future site plan application for the Project

### **BACKGROUND:**

#### **Subject lands and area context**

The Applications collectively apply to six (6) properties known legally as 134, 136, 140, 144, 152 Main Street North, 12 Wilson Street (the “Subject Lands”) (See Figure 1: Location Map). Together these properties consist of approximately 0.825 hectares (2.04 acres), situated in the Markham Village Heritage Conservation District. The proposed development block is bounded by Main Street North to the east, Wilson Street to the south, Water Street to the west and 154 Main Street North to the north.



The Subject Lands are currently used for commercial purposes with the Markham Village Lane commercial shopping complex occupying the majority of the area (See Figure 2: Aerial Photo and Figure 3: Area Context/Zoning). The Subject Lands contain the following six (6) heritage structures which are designated pursuant to Part V (District Designation) of the Ontario Heritage Act:

<b>Address</b>	<b>Historic Name</b>
134 Main Street N	Fogg-Hook Bakery, 1870
136 Main Street N	Underhill Shoe Shop, c.1881
140 Main Street N	William & Eliza Browning House, c.1852
144 Main Street N	Henry Wilson House, 1888
152 Main Street N	Dr. Wesley Robinson House, c 1875
12 Wilson Street	Charles and Maria Carleton House, 1875

See Appendix “A” for photographs of the heritage resources. The building at 144 Main Street North is also individually designated under Part IV of the Ontario Heritage Act, and 140 and 152 Main St N are further protected through Heritage Easement Agreements.

Surrounding land uses include:

- Immediately to the north are residential/commercial properties including Dixon Gardens Funeral Home
- East across Main Street North are commercial properties including the vacant Tremont Hotel building, primarily two storey in height and St Andrew’s Church
- South across Wilson Street are commercial properties, primarily two storeys in height
- West across Water Street are a residential condominium (4 storeys), two storey historic townhouses and single detached dwellings, Water Street seniors housing (6 storeys) and the Water Street Seniors Activity Centre

### **Proposal:**

The Applications are intended to facilitate the proposed 22,650m<sup>2</sup> (243,803 ft<sup>2</sup>) six storey retirement residence on the Subject Lands (the “Proposal”) (See Figure 4: Proposed Site Plan and Elevations and Appendix “B”- Perspective Elevations). Table 1 below summarizes the proposed unit types.

**Table 1: Proposed Units**

<b>Unit Type</b>	
Independent Living Units	110
Independent Supportive Living Units	131
Assisted Living Units	33
Memory Care Units	34
<b>Total</b>	<b>308</b>

Five of the existing cultural heritage resources would remain in commercial uses with the replicated building at 12 Wilson Street being incorporated into the retirement residence.



---

The amount of commercial space being retained in the development is approximately 836m<sup>2</sup> (9,000 ft<sup>2</sup>). The current development site contains approximately 6,503 m<sup>2</sup> (70,000 ft<sup>2</sup>) of commercial space

The proposal includes 162 parking spaces (120 underground). Access is provided primarily from Water St with a vehicular driveway loop drop off from Main St N.

The accompanying Zoning By-law Amendment application proposes to permit institutional uses, a six storey high building, and site-specific development and parking standards.

### **Provincial and Regional Policy Framework**

This proposal must be consistent with the Provincial Policy Statement, 2014 and conform to the Growth Plan for the Greater Golden Horseshoe, 2019, and the Region of York Official Plan. Planning staff will evaluate this proposal against the Provincial and Regional Policy Framework during the processing of this application.

### **City of Markham Policy Framework**

#### Markham Official Plan, 2014 (the “City’s Official Plan”)

The City’s Official Plan (as partially approved on November 24, 2017 and further updated on April 9, 2018) provides land use policy to guide future development and manage growth. It also provides guidance regarding cultural heritage resources and their protection.

Map 3 - Land Use designates the Subject Lands ‘Mixed Use Heritage Main Street’.

Section 9 – Area and Site Specific Policies of the Official Plan includes detailed policies to guide future development and growth in the Markham Village Heritage Centre, and specific policies for Mixed Use Heritage Main Street lands.

The purpose and effect of the proposed Official Plan amendment is to permit shared housing large scale.

#### Markham Village Heritage Conservation District Plan (the “Heritage Plan”)

The Heritage Plan provides direction related to appropriate infill development from a design and material perspective, height, scale and massing, streetscape, building typology, and addressing landmark features such as the cultural heritage resources both on the property and in the immediate area.

Staff will evaluate the Proposed Official Plan Amendment to determine if it conforms with the intent of the Official Plan and the Heritage Plan.

### **Zoning**

The subject property is zoned ‘Commercial (C2)’ under By-law 1229, as amended (See Figure 3: Area Context/Zoning). A zoning by-law amendment is required to permit institutional uses, a six storey high building and site specific development and parking standards.



---

**OPTIONS/ DISCUSSION:**

The following is a brief summary of issues raised to date. These matters, and others identified at the Public Meeting, at any community information meetings and through the circulation and detailed review of the proposal, will be addressed in a future recommendation report:

1. Cultural Heritage Resources

Staff are reviewing how each of the cultural heritage resources is being affected by the proposed development. Heritage Markham Committee will be reviewing the applications.

Issues under consideration include further protection mechanisms, restoration requirements and compatibility of the proposed development with the heritage buildings both on the site and within the immediate vicinity.

2. Commercial Uses and Parking

Staff are examining the viability of the proposed commercial uses which are proposed to be continued in the heritage buildings. The issues include the functionality of these buildings from a servicing (loading, access, delivery) perspective, and the viability of the commercial uses with no adjacent at-grade parking.

3. Review the appropriateness of the proposed built form and zoning by-law amendment

Staff are reviewing the proposed height, scale and massing of the proposed building, as it relates to the transition from the heritage buildings along Main Street and the transition from lower scale residential properties adjacent to the development. The proposed building is 7 storeys in height along Water Street and 6 storeys behind the heritage buildings fronting Main Street North. Site-specific development standards (i.e. lot frontage, setbacks, encroachments, outdoor amenity space, etc.) in the context of the existing and planned uses are being examined.

4. Materials/Design Features

The proposed use of materials, treatments and colours to address heritage district compatibility is being considered based on the concept drawings, including the potential use of integrated balconies as opposed to projecting balconies.

5. Parkland

The issue of public parkland in the immediate area and the need for it is being investigated.

6. Transportation Engineering

The suitability of an entrance driveway off of Main Street North is being examined.

7. Sustainability

The issue of sustainability is being reviewed.



8. Section 37 Contribution

Section 37 including public art contribution will be reviewed for implementation through the amending zoning by-law.

9. Technical studies/reports currently under review

Staff are in the process of reviewing a number of studies/reports submitted in support of the proposal including a Planning Justification Report, Transportation Impact Study, Functional Servicing Report and a Downstream Sanitary Sewer Capacity Analysis. Comments from internal departments and external agencies may result in changes to the Proposal.

**FINANCIAL CONSIDERATIONS**

Not applicable.

**HUMAN RESOURCES CONSIDERATIONS**

Not applicable.

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

The Proposal is being considered within the context of the City's safe and sustainable community strategic priority.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

The Proposal has been circulated to various departments and external agencies (including the Heritage Markham Committee) and is currently under review. Requirements of the City and external agencies will be reflected in the Official Plan and Zoning By-law Amendment.

**RECOMMENDED BY:**

\_\_\_\_\_  
Biju Karumanchery, M.C.I.P., R.P.P.  
Director of Planning & Urban Design

\_\_\_\_\_  
Arvin Prasad, M.C.I.P., R.P.P.  
Commissioner, Development Services

**APPLICANT/AGENT:**

SmartCentres  
Nikolas Papapetrou, Sr. Development Manager  
3200 Highway 7, Vaughan, ON L4K 5Z5  
[npapapetrou@smartcentres.com](mailto:npapapetrou@smartcentres.com)

**APPENDICES**





Appendix "A" Cultural Heritage Resources  
Appendix "B" Perspective Drawings

**FIGURES:**

Figure 1: Location Map  
Figure 2: Aerial Photo  
Figure 3: Area Context/Zoning  
Figure 4: Site Plan and Elevations



**APPENDIX “A” - Cultural Heritage Resources**

Address	Historic Name	
134 Main Street N	Fogg-Hook Bakery, 1870	
136 Main Street N	Underhill Shoe Shop, c.1881	
140 Main Street N	William & Eliza Browning House, c.1852	
144 Main Street N	Henry Wilson House, 1888	



152 Main Street N	Dr. Wesley Robinson House, c 1875	
12 Wilson Street	Charles and Maria Carleton House, 1875	



---

**APPENDIX “B” - Perspective Drawings**

**Main Street N looking southwest**



**Main Street N at Wilson Street looking northwest**



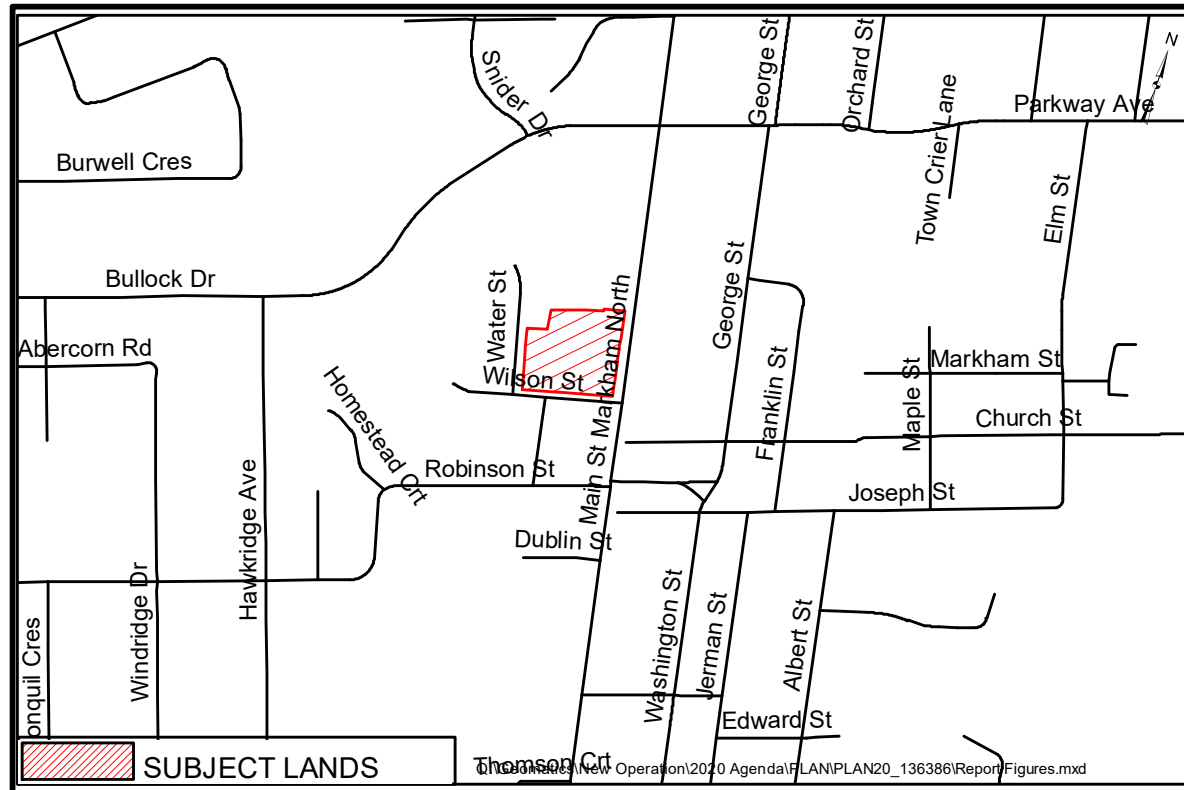


**Wilson Street – South Side of Proposed Development**

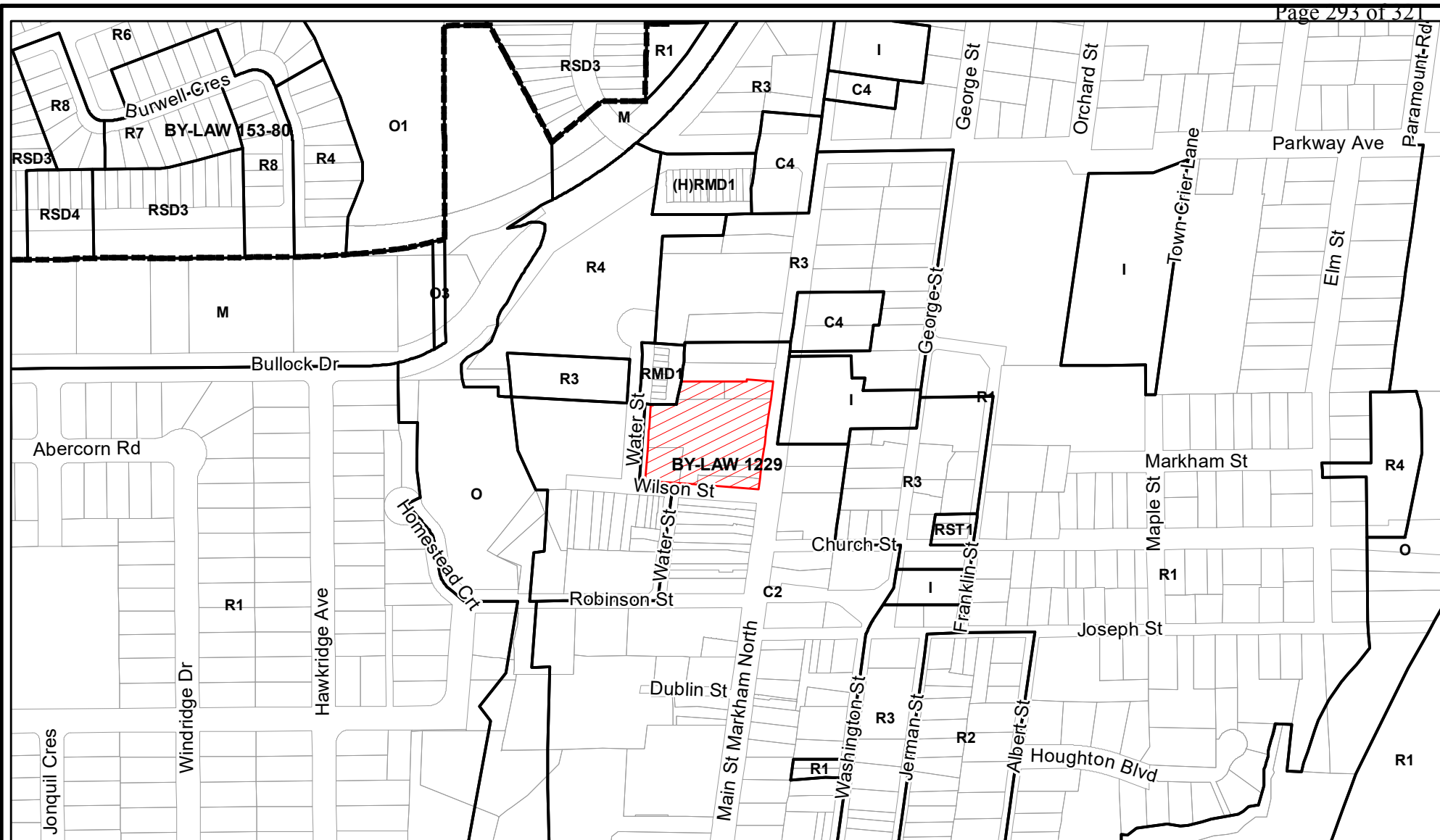


**Water Street – West Side of Proposed Development**









# AREA CONTEXT / ZONING

APPLICANT: 2637996 Ontario Inc.  
144 Main Street North

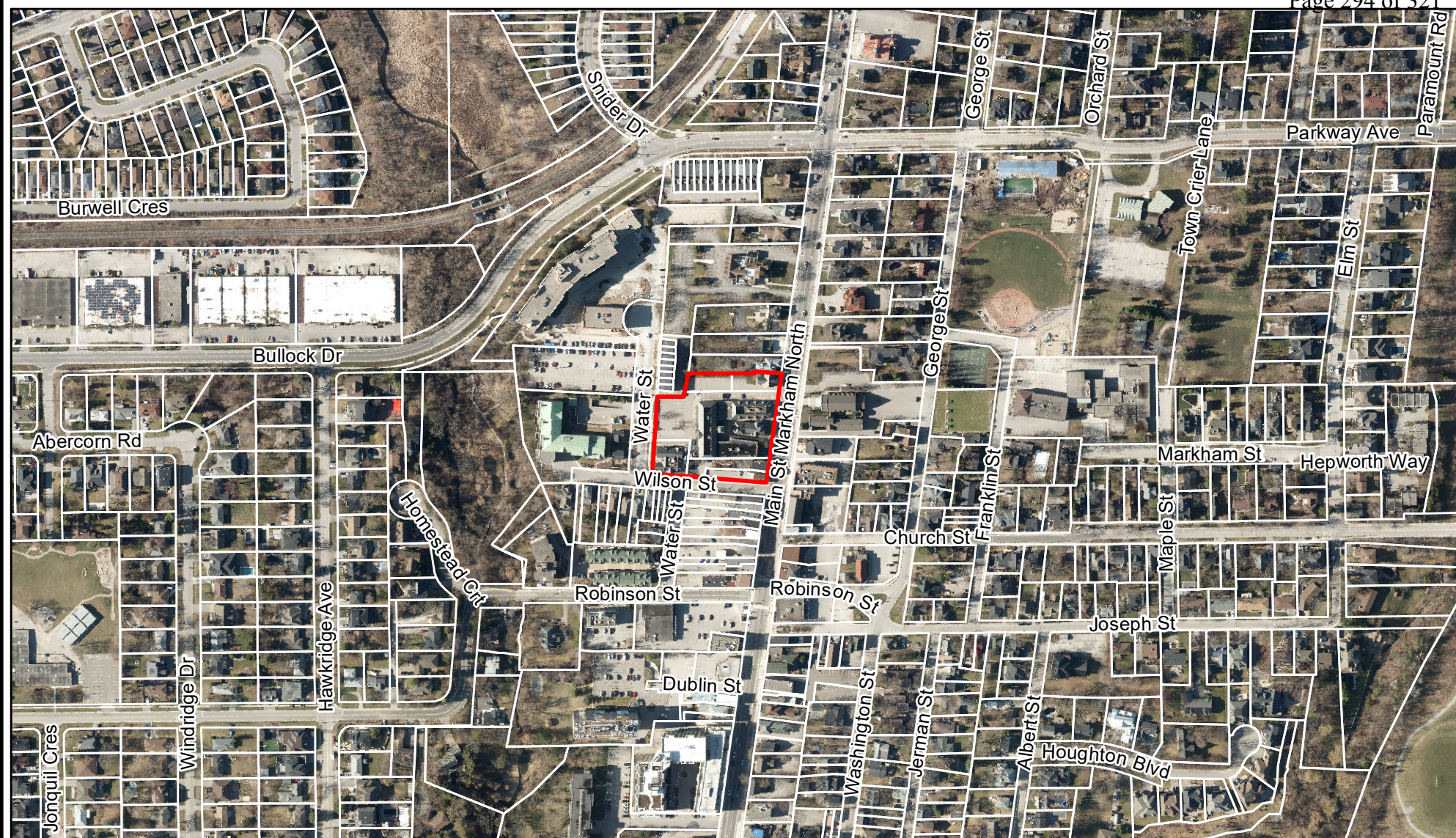
FILE No. PLAN 20 136386

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_136386\Report Figures.mxd

 SUBJECT LANDS







# AERIAL PHOTO (2020)

APPLICANT: 2637996 Ontario Inc.  
144 Main Street North

FILE No. PLAN 20 136386

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_136386\Report Figures.mxd

**MARKHAM** DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: RH

 SUBJECT LANDS

DATE: 09/03/2021

**FIGURE No. 3**







# SITE PLAN & ELEVATIONS

APPLICANT: 2637996 Ontario Inc.  
144 Main Street North

FILE No. PLAN 20 136386

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_136386\Report Figures.mxd





Report to: Development Services Committee

Meeting Date: May 3<sup>rd</sup>, 2021

**SUBJECT:** PRELIMINARY REPORT, Flato Developments Inc, Application for Draft Plan of Subdivision to create blocks for a public park, public road and residential development comprised of two (2) 8-storey buildings and townhouses in the south-west quadrant of Highway 48 and the City of Markham/ Town of Whitchurch-Stouffville municipal boundary (north of 19<sup>th</sup> Avenue), Part of Lot 31, Concession 7 (Ward 6), (File No. PLN 20 134853).

**PREPARED BY:** Stacia Muradali, M.C.I.P., R.P.P.  
Manager, East Development District

**REVIEWED BY:** Ron Blake, M.C.I.P., R.P.P.  
Senior Development Manager

#### **RECOMMENDATION:**

1. That the report titled “PRELIMINARY REPORT, Flato Developments Inc., Application for Draft Plan of Subdivision to create blocks for a public park, public road and residential development comprised of two (2) 8-storey buildings and townhouses in the south-west quadrant of Highway 48 and the City of Markham/ Town of Whitchurch-Stouffville municipal boundary (north of 19<sup>th</sup> Avenue), Part of Lot 31, Concession 7 (Ward 6), (File No. PLN 20 134853)”, be received.

#### **EXECUTIVE SUMMARY:**

Not applicable.

#### **PURPOSE:**

This report provides preliminary information on a Draft Plan of Subdivision application submitted by Flato Developments Inc. to permit residential development at the south-west corner of Highway 48 and the City of Markham/ Town of Whitchurch-Stouffville municipal boundary (Part of Lot 31, Concession 7) (the “subject land”). This report contains general information in regards to applicable Official Plan or other policies as well as other issues identified by Staff to date. The report should not be taken as Staff’s opinion or recommendation on the application.

#### **Process to date:**

The application for Draft Plan of Subdivision was deemed complete on January 22<sup>nd</sup>, 2021. A community information meeting was held on April 22, 2021. The 180 day period under the Planning Act for Council to issue a notice of decision expires on July 20<sup>th</sup>, 2021.



---

**Next steps:**

- Statutory Public Meeting will be held when appropriate.
- Recommendation Report
- Issuance of Draft Plan Approval, subdivision agreement and registration of the subdivision.
- Site plan application will be required.

**BACKGROUND:****Site and area context**

The subject site is approximately 3.6 hectares (9 acres) and is located in the south-west quadrant of Highway 48 and the City of Markham/Town of Whitchurch-Stouffville municipal boundary (the “municipal boundary”) (Figure 1). The subject land is surrounded by agricultural and rural land uses to the south and west. The Hamlet of Dickson Hill is located east of Highway 48 and there is a cemetery proposed within the hamlet. The cemetery application is currently under LPAT appeal. There is a wide range of uses north of the subject site in the Town of Whitchurch-Stouffville (“Stouffville”), including auto repair, rural and agricultural uses, a shopping centre (Smart Centre) and applications for residential development.

The Town of Whitchurch-Stouffville initiated a Highway 48 Visioning Exercise in 2019 for lands generally bounded by Stouffville Road to the north, McCowan Road to the west, 19<sup>th</sup> Avenue to the south and east of Rougeview Avenue. The study area also includes the Hamlet of Dickson Hill and the subject site. The City of Markham and the Region of York have been consulted as part of the Highway 48 Visioning Exercise. The purpose of the Highway 48 Visioning exercise was to provide a visual plan of what the study area could be in the future. The Town of Whitchurch-Stouffville recently revised the scope of the Highway 48 Visioning Exercise to a Highway 48 Corridor Land Use Study to develop a conceptual land use vision for the study area.

**Proposed development**

An application for Draft Plan of Subdivision has been submitted which proposes creating a public road block, public park block, and development blocks including future development blocks (Figure 4).

The proposed road which runs east/west (Street ‘A’) is located mainly to the north of the subject lands in Stouffville along the municipal boundary, however the most easterly portion of the proposed road (0.32 hectares) dips south into the subject lands to align with an existing access on the east side of Highway 48. Vehicular access for the proposed development will be from Street ‘A’, the proposed east/west road and there are no accesses proposed on Highway 48 for the proposed development.

There are two (2) development blocks proposed which will be comprised of 25 townhouses (Block 1) and two (2) 8-storey apartment buildings with a total of 249 apartment units (Block 2) (Figure 5). A 0.199 hectare (0.5 acre) public park (Block 4) is proposed to be located between the two (2) development blocks in the centre of the



proposed development. The draft plan also identifies Blocks 3, 5 and 6 as future development blocks.

Flato Developments Inc. describes the proposed development as an “age-friendly community”. It is suggested that the units in the proposed mid-rise buildings will be leased to adults over the age of 55. The proposed townhouses will also include purpose built secondary suites.

### **Official Plan and Minister’s Zoning Order**

#### *Official Plan*

The subject lands are designated “Countryside” in the City’s 2014 Official Plan (as partially approved on November 24<sup>th</sup>, 2017 and further updated on April 9<sup>th</sup>, 2018) ( the “2014 Official Plan”) which protects for agricultural uses and supports farming activities. As noted below, these lands are subject to a recently approved Minister’s Zoning Order. The provisions of the Minister’s Zoning Order take precedence over the 2014 Official Plan, therefore an Official Plan Amendment is not required to allow the proposed development.

#### *Zoning- Minister’s Zoning Order*

A Minister’s Zoning Order (MZO) was approved on April 24<sup>th</sup>, 2020 for the subject lands and land to the north in Whitchurch-Stouffville. The MZO permits townhouses and apartment buildings as well as accessory dwellings in each townhouse on the subject lands. The MZO permits a maximum of 500 apartment units and 34 townhouses. Retail uses and personal service shops however are specifically not permitted by the MZO.

### **Stouffville draft plan of subdivision**

The aforementioned MZO also implements land use and other zoning permissions for approximately 9.4 hectares (23 acres) of land in Stouffville, directly north of the subject lands. In Stouffville, five (5) - 6 storey apartment buildings with a total of 548 units and 98 townhouses are proposed. There is also approximately 2,040 square metres (22,000 square feet) of commercial uses proposed at grade level fronting onto the proposed east/west road (Figure 5). A draft plan of subdivision application was submitted to accommodate the development noted above and is currently under review by the Town of Whitchurch-Stouffville.

### **OPTIONS/ DISCUSSION:**

The following is a brief summary of matters raised to date. These matters, and others identified through the circulation, public consultation and detailed review of the proposal, will be addressed in a final staff recommendation report and conditions of approval:

1. Highway 48 is under the jurisdiction of the Ministry of Transportation (MTO) and the proposed access and road alignment requires approval from MTO. To date MTO has not provided formal comments for either of the subdivision applications in Stouffville or Markham, however there are on-going discussions between City staff, Stouffville staff and MTO



- 
2. Discussions are on-going with Stouffville staff respecting jurisdictional matters over the portion of the proposed east/west road located in Markham (including maintenance) and any required agreements to secure necessary arrangements.
  3. Discussions are on-going with the Region and Stouffville staff because servicing for the proposed development will cross municipal boundaries and be serviced from Stouffville. Inter-municipal agreements will be required to permit any inter-municipal servicing.
  4. Coordination between Markham and Stouffville staff will be required respecting conditions of draft plan approval for the two (2) separate subdivision applications.
  5. The Toronto and Region Conservation Authority has provided comments on the application which includes a request for a Master Environmental Servicing Plan (MESP), an updated Environmental Impact Study (EIS), confirmation of the flood plain and limit of development, and analysis of the impact of the future road crossings on adjacent natural features.
  6. Blocks 5 and 6 which are identified on the draft plan as future development blocks require further analysis to see if it is appropriate to identify them as public open space or greenway blocks and conveyed to the City.
  7. Consideration should be given to the appropriate use of Block 3.
  8. The proposed public park block (approximately 0.199 hectares) is undersized for the proposed development which requires approximately 0.668 hectares of parkland. The location of the proposed public park is also being examined as it may be more appropriately located in closer proximity to the greenway system. Staff will work with the applicant to ensure that appropriate parkland is provided.
  9. Low Impact Development (LID) measures should be incorporated throughout the development.
  10. An appropriate public art contribution through a Section 37 agreement may be required for the proposed development.
  11. Given the complexity of the servicing for the proposed development, engineering comments are still to be finalized and require further discussions with the Region of York and Stouffville.

**FINANCIAL CONSIDERATIONS**

Not applicable

**HUMAN RESOURCES CONSIDERATIONS**

Not applicable

**ALIGNMENT WITH STRATEGIC PRIORITIES:**

The proposal will be reviewed in the context of Growth Management, Municipal Services and Environment strategic priorities.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

The applications have been circulated to various departments and external agencies and are currently under review. Requirements of the City and external agencies will be reflected in a future recommendation report and/or as conditions of approval.



---

**RECOMMENDED BY:**

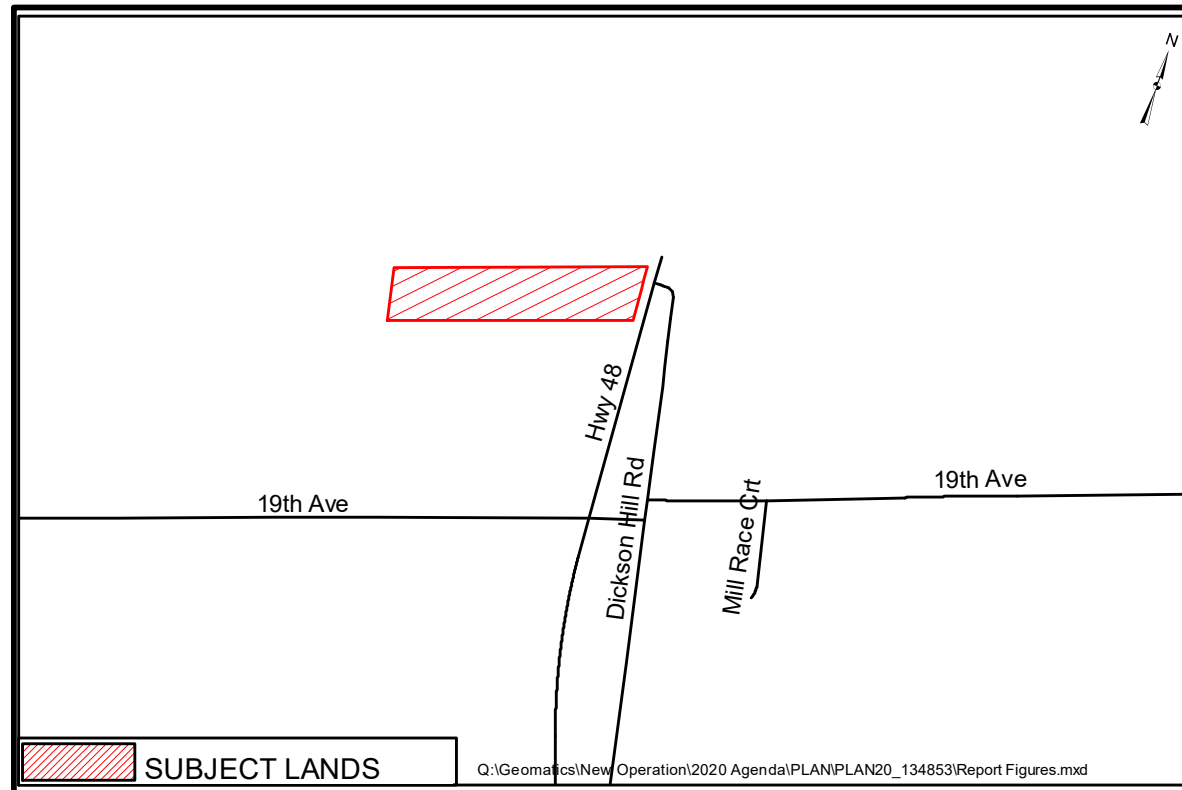
Biju Karumanchery, M.C.I.P., R.P.P.  
Director of Planning and Urban Design

Arvin Prasad, M.C.I.P., R.P.P.  
Commissioner of Development Services

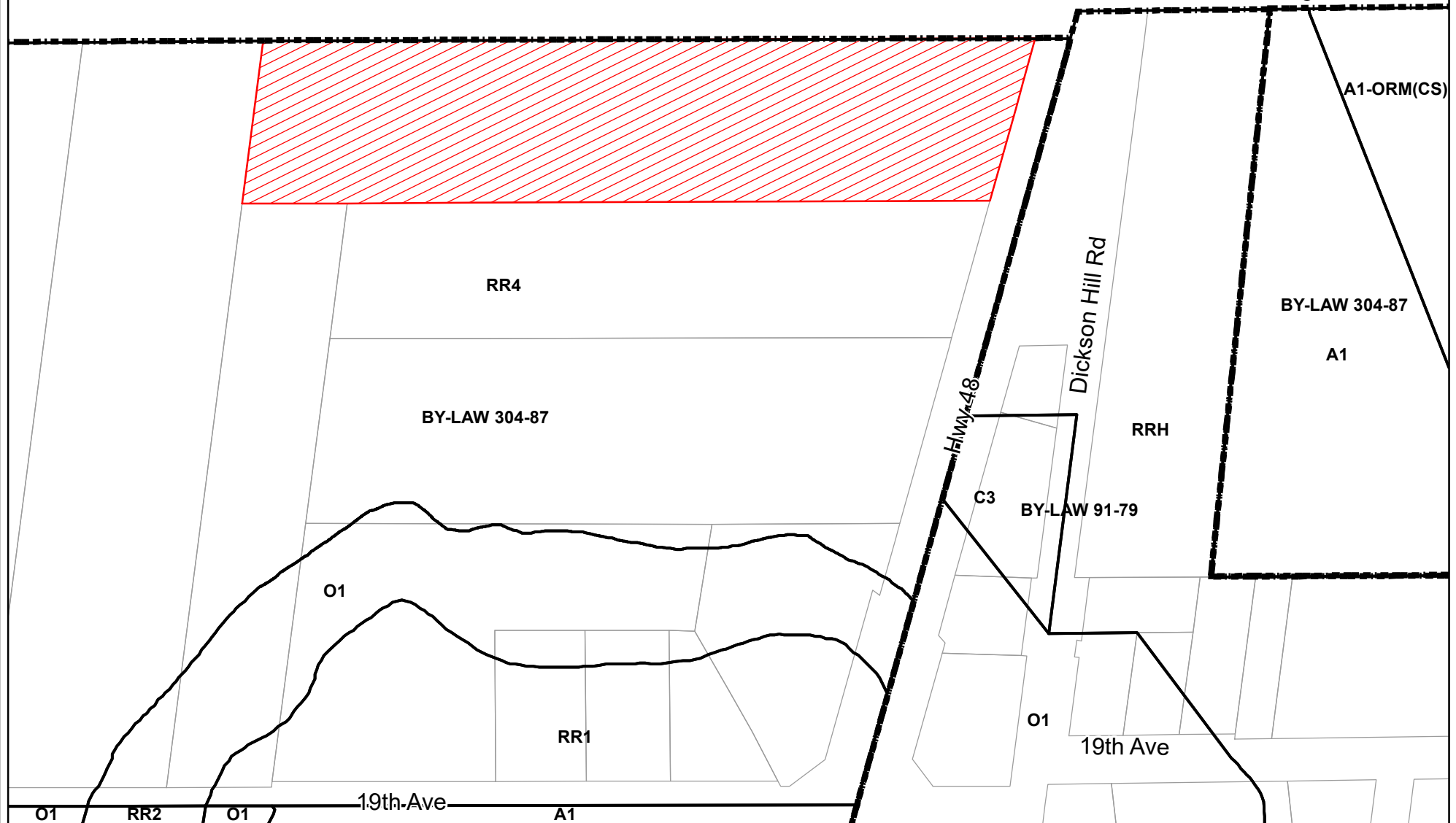
**ATTACHMENTS:**

- Figure 1: Location Map
- Figure 2: Area Context and Zoning
- Figure 3: Air Photo
- Figure 4: Proposed Draft Plan of Subdivision
- Figure 5: Conceptual Site Plan for the proposed developments in City of Markham and Town of Whitchurch-Stouffville covered in the MZO approved April 24<sup>th</sup>, 2020









# AREA CONTEXT / ZONING

APPLICANT: FLATO Developments Inc.  
Highway 48

FILE No. PLAN 20 134853

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_134853\Report Figures.mxd

**MARKHAM** DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

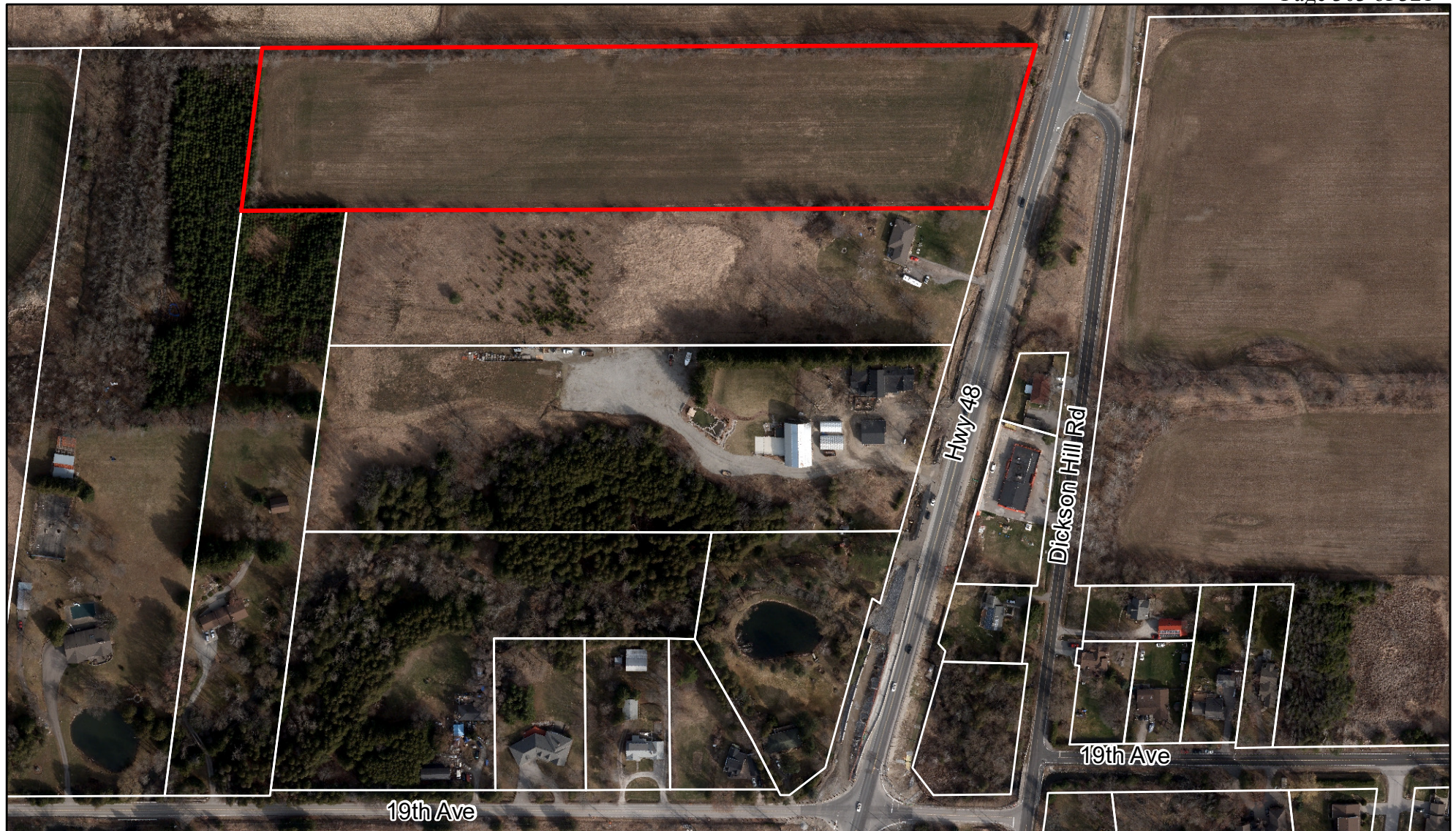
Checked By: SM

DATE: 31/03/2021

**FIGURE No. 2**

 SUBJECT LANDS





# AERIAL PHOTO (2020)

APPLICANT: FLATO Developments Inc.  
Highway 48

FILE No. PLAN 20 134853

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_134853\Report Figures.mxd

**MARKHAM** DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: SM

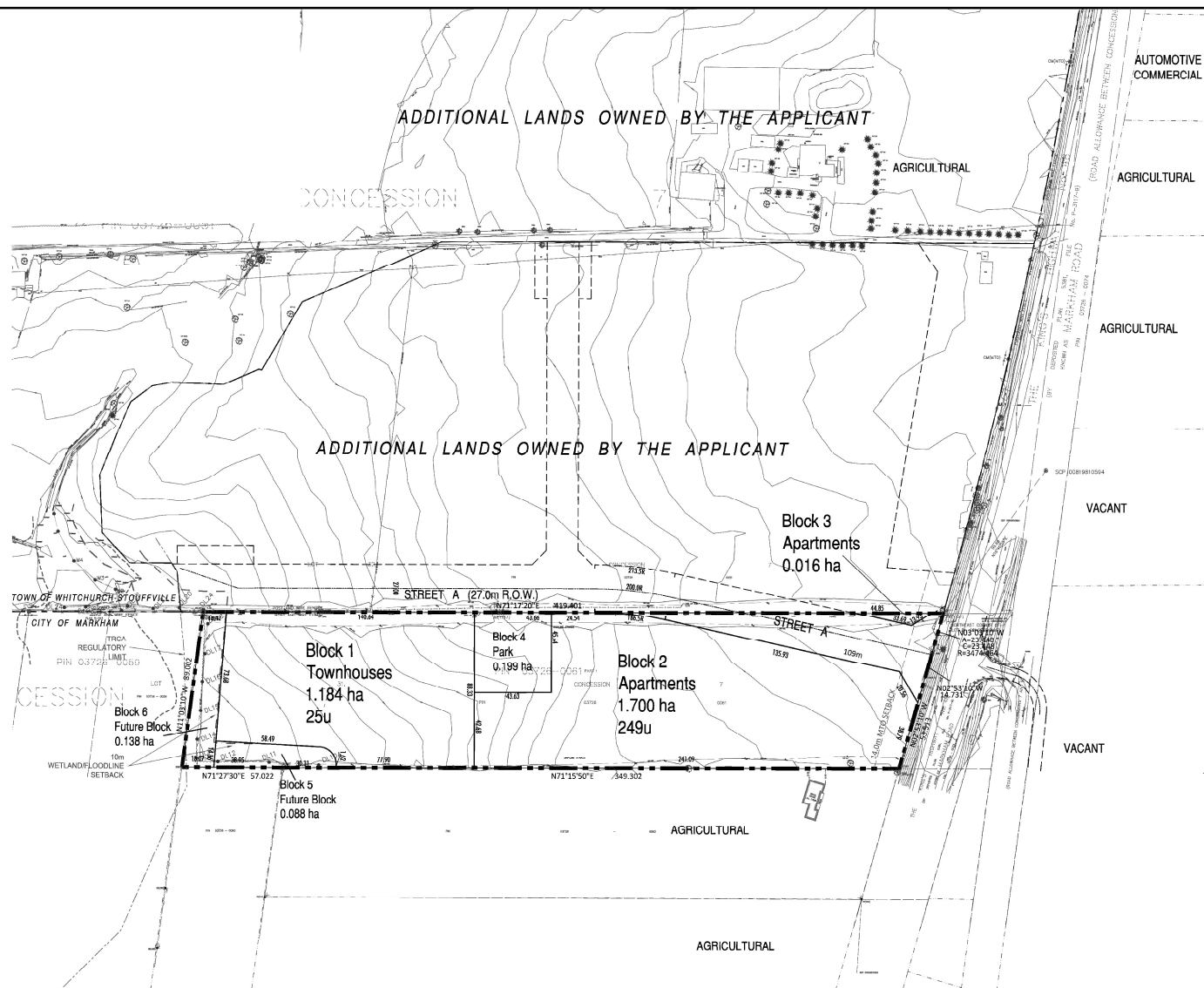
DATE: 31/03/2021

**FIGURE No. 3**

 SUBJECT LANDS







# PROPOSED DRAFT PLAN OF SUBDIVISION

APPLICANT: FLATO Developments Inc.  
Highway 48

FILE No. PLAN 20 134853

Q:\Geomatics\New Operation\2020 Agenda\PLAN\PLAN20\_134853\Report Figures.mxd



DEVELOPMENT SERVICES COMMISSION

Drawn By: RT

Checked By: SM

DATE: 31/03/2021

FIGURE No. 4





## FIGURE No. 5







## Markham Sub-Committee Meeting Minutes

**April 20, 2021, 9:00 AM - 12:00 PM**  
**Electronic Meeting**

Sub-Committee Members	<p>Regional Councillor Jack Heath</p> <p>Councillor Karen Rea</p> <p>Councillor Andrew Keyes</p> <p>Deputy Mayor Don Hamilton (Ex-Officio)</p> <p>Regional Councillor Jim Jones (Ex-Officio)</p> <p>Councillor Keith Irish (Ex-Officio)</p>
Regrets	Councillor Amanda Collucci
Council Members	<p>Councillor Isa Lee</p> <p>Regional Councillor Joe Li</p>
Staff	<p>Andy Taylor, CAO</p> <p>Claudia Storto, City Solicitor</p> <p>Arvin Prasad, Commissioner, Development Services</p> <p>Biju Karumanchery, Director, Planning &amp; Urban Design</p> <p>Brian Lee, Director, Engineering</p> <p>Ron Blake, Senior Development Manager,</p> <p>Stacia Muradali, Acting Manager, Development, East District</p> <p>Aqsa Malik, Planner I</p> <p>Laura Gold, Council &amp; Committee Coordinator</p>

### **1. CALL TO ORDER**

That the Markham Sub-Committee convened at 6:03 PM with Regional Councillor Jack Heath in the Chair.

### **2. DISCLOSURE OF PECUNIARY INTEREST**

There were no disclosures of pecuniary interest.



Markham Sub-Committee

April 20, 2021

2 | Page

### **3. OFFICIAL PLAN AND ZONING BY-LAW AMENDMENT APPLICATIONS APPEALED TO LPAT 10-20 FINCHAM AVENUE, FILE NO.: OP/ZA 18 108216**

Ron Blake, Senior Manager of Development, provided a summary of the development proposal located at 10-20 Fincham Avenue for low-rise townhomes and semi-detached dwellings.

Asqa Malik, Planner I, provided a presentation entitled Markham Official Plan and Zoning Amendment Applications Appealed to LPAT, 10-20 Fincham Inc. The presentation provided an overview of the area context, the official plan and zoning, the conceptual plan, comments from the community information and statutory public meetings, staff comments, and proposed renderings of the development proposal.

Claudia Storto, City Solicitor advised that the applicant has appealed the development application to the Local Planning Appeal Tribunal (LPAT). The applicant was able to appeal the decision, as the City did not make a decision on the development application within the timeframe specified in the *Planning Act*. Once a development application has been appealed to LPAT, the jurisdiction to make a decision on the development application becomes the Tribunal's and not local Council. The applicant can still make minor changes to the application prior to it being presented at LPAT.

Regional Councillor Jack Heath advised that Council's decision is now to decide how it will position itself at LPAT. This discussion will occur in a confidential session and the decision will not be reported out, as it is now a legal matter. Deputations on the item will still be permitted at the meeting in the open session.

Members of the public provided the following feedback on the development proposal:

#### **Elizabeth Brown**

- Suggested the development proposal is too dense and is not compatible with the existing neighbourhood;
- Suggested that three storey semi-detached dwellings should not be permitted on such narrow lots.
- Concerned in regards to the semi-detached dwellings boxy design, third floor balconies (due to privacy concerns), and that they are freehold and do not share common amenities with the townhomes;
- Suggested that the semi-detached dwellings on Fincham Avenue should comply with the existing neighbourhoods Zoning By-Law;
- Concerned that the development proposal has increased in density since its original proposal in 2019;
- Suggested that the Marmill townhomes are an example of townhouses that are complimentary to the existing neighbourhoods.



Markham Sub-Committee

April 20, 2021

3 | Page

**Chris Rogge**

- Concerned regarding the three storey semi-detached dwellings that are being built adjacent to his property, and that the development proposal is not compatible with characteristics of the neighbourhood;
- Concerned regarding the impact the development proposal will have on traffic, and on the intersection at 16<sup>th</sup> and Fincham Avenue;
- Concerned that development proposal has increased in density since its original proposal in 2019.

**Sheila Coleman**

- Concerned in regards to how the development proposal will impact her property value, and the aesthetics of the neighbourhood;
- Concerned that two townhomes with their sides facing Fincham Avenue will create a wall like appearance;
- Concerned that the development proposal lacks green space;
- Encouraged single detached houses to be built on the subject lands;

**Ron Thaker**

- Concerned for the potential of a “walled” like appearance if the sides of the 3 storey townhomes are facing Fincham Avenue;
- Asked what the developer’s intentions are in regards to landscaping, and fencing at 16<sup>th</sup> and Fincham Avenue.

**Merv Lesch**

- Concerned that the development proposal will create traffic congestion on Fincham Avenue, and the impact it will have on the intersection at 16<sup>th</sup> and Fincham Avenue;
- Concerned that the development proposal does not fit the character of the neighbourhood, and that it will negatively impact the aesthetics of the neighbourhood;
- Asked if the development proposal should include an entrance to 16<sup>th</sup> Avenue;
- Suggested that the impact development proposals have on existing neighbourhoods should be considered when reviewing development applications.

**Tim Watkinson**

- Suggested that the majority of neighbourhood is in opposition to the development proposal;
- Concerned that the townhomes with their sides facing Fincham Avenue will create a wall like appearance.



Markham Sub-Committee

April 20, 2021

4 | Page

**Andrew Cornell**

- Concerned about the impact the development proposal will have on traffic.

Staff responded to inquiries from the Committee and the public, the applicant has provided some landscaping on 16<sup>th</sup> Avenue, but more details regarding the landscaping will be provided through the site plan approval process. Staff will also look at the possibility of having a walkway on the eastern boundary of the property, as part of this process. The subject lands are currently zoned for commercial uses.

Councillor Karen Rea thanked the residents for attending the meeting and for providing their feedback, and summarized the residents' concerns. Councillor Rea noted that the same zoning should apply to this development proposal as applies to Bryant Drive and Fincham Avenue, and suggested that the lot frontage should be consistent with existing properties on these streets.

Regional Councillor Jack Heath advised that this item will be brought back to a future Development Services Committee meeting, and that residents attending tonight's meeting will be notified when it is on the agenda.

Committee requested that on a go forward basis staff advise Council when a development application is able to be appealed so that Members of Council can make more informed decisions.

Moved by Councillor Karen Rea  
Second Councillor Andrew Keyes

1. That the presentation entitled "Official Plan and Zoning By-Law Amendment Applications appealed to LPAT, 10-20 Fincham Avenue, File No: OP/ZA 18 108216, 10-20 Fincham Inc." be received; and,
2. **That the deputations from Elizabeth Brown, Chris Rogge, Sheila Coleman, Ron Thacker, Merv Lesch, Tim Watkinson, Andrew Cornell, be received; and,**
3. **That the communications from Sheila Coleman, and Derek Martin, be received; and further,**
4. **That the Markham Sub-Committee recommends that the Development Services Committee not endorse the application; and,**
5. **That the applicant come back with a more suitable application.**

**Carried**

**ADJOURNMENT**

The Markham Sub-Committee meeting adjourned at 7:57 PM.





Report to: Development Services Committee

Meeting Date: May 3, 2021

**SUBJECT:** City of Markham Comments on *Planning Act* Changes regarding Subdivision Control and Consents in Bill 276

**PREPARED BY:** Francesco Santaguida, Assistant City Solicitor, Ext. 3583  
Bradley Roberts, Manager – Zoning and Special Projects, Ext. 2800

### RECOMMENDATION:

- 1) That this report be forwarded to the Minister of Municipal Affairs and Housing as the City of Markham's Comments with respect to ERO Number 019-3495;
- 2) That this report be forwarded to the Provincial Standing Committee on General Government as the City of Markham's Comments with respect to Bill 276, *Supporting Recovery and Competitiveness Act, 2021*;
- 3) That Council for the City of Markham does not support the following changes to the *Planning Act* related to:
  - a. the Proposed Minister's Consent Order; and
  - b. allowing purchasers of land to apply for a consent;
- 4) That Council for the City of Markham supports the proposed one-year extension for an applicant to fulfill conditions of a consent, and that the *Planning Act* be amended to allow the extension to be delegated to staff;
- 5) That Council for the City of Markham request an additional change to the *Planning Act* that allows for land to merge automatically where it is required by a condition of the consent; and
- 6) That Staff be authorized and directed to do all things necessary to give effect to this resolution.

### EXECUTIVE SUMMARY:

On April 15, 2021, the Provincial Government released [Bill 276, the Supporting Recovery and Competitiveness Act, 2021](#) and released a request for comments through the Environmental Registry of Ontario ([ERO number 019-3495](#)). Comments are due through the ERO by May 25, 2021.

The proposed changes to the *Planning Act* relate to Section 50 (Subdivision Control), Section 51 (Plans of Subdivision) and Section 53 (Consents). Many of the changes are "housekeeping" changes, related to legal issues that have arisen over the years. However, there are a few proposed changes that would affect the City's interests:



- 
1. The creation of a “Minister’s Consent Order” to issue a Consent or a Certificate of Validation without the matter being considered by Council or the Committee of Adjustment.
  2. Allowing purchasers of a property to apply for a consent to sever land.
  3. A one-year extension of the initial one-year timeframe to fulfil any conditions for a consent.

Staff have concerns about the introduction of a new “Minister’s Consent Order” as it has the ability to override local planning decisions related to land divisions. Staff also have concerns about allowing purchasers to apply for a consent to sever land, as it presents implementation challenges for the City in dealing with these types of applications.

Staff are supportive of the proposed one-year extension to comply with any conditions of a consent. Staff request that the Province provide Council with the express authority to delegate the power to extend the compliance timeframe to staff in order for the process to operate most efficiently.

Lastly, for consents that seek to add land to another parcel, staff request that the Province consider adding an amendment that allows properties to merge automatically if the municipality applies a condition requiring the land to merge.

**PURPOSE:**

This report is to advise Council of the recent proposed changes to the *Planning Act*, and to seek instructions to provide comments on these changes to the Minister of Municipal Affairs and Housing and the Provincial Standing Committee of General Government.

**BACKGROUND:**

On April 15, 2021, the Provincial Government released Bill 276, the *Supporting Recovery and Competitiveness Act, 2021* and released a request for comments through the Environmental Registry of Ontario (ERO number 019-3495). Through the ERO posting, the Province has asked for comments to be provided by May 25, 2021.

The proposed changes to the *Planning Act* relate to Section 50 (Subdivision Control), Section 51 (Plans of Subdivision) and Section 53 (Consents). Several of the changes relate to “housekeeping” changes that many real estate, legal and conveyancing practitioners have sought for a number of years, and do not affect the City’s administration of Consent applications.

There are some proposed changes that would affect the administration of Consent applications, including:

1. The creation of a “Minister’s Consent Order” to issue a Consent or a Certificate of Validation without the matter being considered by Council or the Committee of Adjustment.
2. Allowing purchasers of a property to apply for a consent to sever land.



- 
3. A one-year extension of the initial one-year timeframe to fulfil any conditions for a consent.

**DISCUSSION:****Staff have concerns with the proposed Minister's Consent Order, and allowing purchasers to apply for a consent prior to closing a sale.**

The Proposed Bill 276 contains changes that would allow the Minister to issue an order, with conditions, that would grant a consent in place of a municipality. The Minister may grant specific consents or certificates of validation, or may require that all consents after the order is made be reviewed and granted by the Minister.

Staff have concerns with this provision, as it allows the Minister to stand in the place of Council/Committee of Adjustment without a public process. There is no provision for members of the public to provide input or comments on an application for a consent to the Minister.

Staff also have concerns with allowing a purchaser of a property to apply for a consent prior to the closing of the transaction. Currently, only the owner of the land, or the owner's agent can apply for a consent. Allowing purchasers to apply for a consent prior to the closing of a transaction would place an additional administrative burden on City staff who would have to determine if an applicant has the authority to apply for a consent. This change could also create administrative issues related to who is responsible for clearing conditions. Consents would also have to be contingent on the sale of the property, resulting in a period of uncertainty prior to closing.

**Staff support the proposed one-year extension to fulfil any consent conditions, and request ability to delegate extension to staff**

City staff often receive requests to extend the *Planning Act*'s one-year deadline to clear conditions on an approved consent. Staff are unable provide any relief due to the *Planning Act* deadline. As a result, Staff support the proposed extension. Staff request that the Province expressly allow for Council to delegate such requests to staff, to ensure that these requests can be addressed quickly and efficiently.



### **Staff request an additional change in the legislation to require that lot additions merge with the parent lot**

Where an applicant seeks to add land to an existing lot, there is often a requirement for the severed parcel to merge with the lot seeking the addition. In order to comply with the requirement in the City's zoning by-laws that a building not be built on a property line, staff seek conditions that require the merger of the severed parcel with the existing lot. Without the parcels merging, the severed parcel can be sold separately from the existing lot. Figure 1 shows an example of this issue.

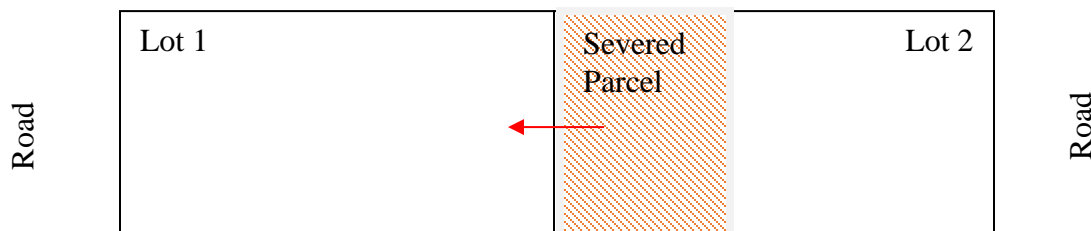


Figure 1: Example of a severance application in a Plan of Subdivision where a merger is required. Lot 2 is requesting to sever part of its land to add to Lot 1.

In the example shown in Figure 1, the City would seek a condition of approval for the consent that would require the Severed Parcel to merge with Lot 1. In order to effect the merger under the *Planning Act*, a deeming by-law would be required, which would require additional time and expense. Without the deeming by-law, the severed parcel could be sold to a third party without proper road access.

To address this situation, staff request that the Province consider an additional amendment to the *Planning Act* that automatically merges the severed lot with the existing lot where required by a condition of a consent.

### **FINANCIAL CONSIDERATIONS**

Not Applicable.

### **HUMAN RESOURCES CONSIDERATIONS**

Not Applicable.

### **ALIGNMENT WITH STRATEGIC PRIORITIES:**

The Report aligns with the City's Strategic Priorities related to Growth Management.

### **BUSINESS UNITS CONSULTED AND AFFECTED:**

The Zoning and Special Projects Team in the Development Services Commission and the Legal Department have been consulted.



---

**RECOMMENDED BY:**

---

Claudia Storto, City Solicitor and  
Director of Human Resources

---

Arvin Prasad, Commissioner of  
Development Services



## Notice of Motion: GTA West Corridor (413 Highway)

**Moved by** Markham Regional Councillor Jim Jones

**Seconded by** Councillor Ward 7 Khalid Usman

### GTA WEST CORRIDOR (413 HIGHWAY)

At the April 21<sup>st</sup> Development Services Committee meeting, Committee members will be requested not to support the GTA West Corridor (413 Highway) and Transmission Corridor by adopting the following Motion:

- I) **WHEREAS** Ontario farming and food processing together employ one million persons and generate over \$35 billion economic benefits annually; and
- II) **WHEREAS** the Greater Golden Horseshoe is the third largest agricultural producer in North America after California and Chicago; and
- III) **WHEREAS** the Province of Ontario is proposing to develop the GTA West Corridor by razing 2,000 acres of pristine farmlands, some of which are Class A and Class B farmlands and many of which will immediately cease to be farmed and other lands, over time, which will be developed for non-agricultural uses; and
- IV) **WHEREAS** the Minister of Agriculture, Food and Rural Affairs has not completed an Agricultural Impact Assessment for the GTA West Corridor; and
- V) **WHEREAS** the proposed GTA Corridor will lead to greater demand for development with more than 33,000 acres of Whitebelt lands in the Greater Golden Horseshoe (Caledon and Vaughan) leading to greater urban sprawl and development that is not supportive of transit investment; and
- VI) **WHEREAS** the proposed GTA West Corridor will cut across 85 waterways, and destroy protected Greenbelt lands including 7 entire woodlots, 220 important wetlands and valley land features, 10 different species-at-risk and hundreds of acres of vulnerable wildlife habitat,
- VII) **WHEREAS** the Greenbelt Plan's permission for new infrastructure which negatively impacts key natural heritage features, key hydrologic features or key hydrologic areas requires determination that there is "no reasonable alternative" and this has not been established through a planning process; and
- VIII) **WHEREAS** the 59-kilometre proposed 413 highway is an old idea, dropped by the previous government after a highly esteemed panel found it would save commuters less than a minute while increasing carbon emissions; and

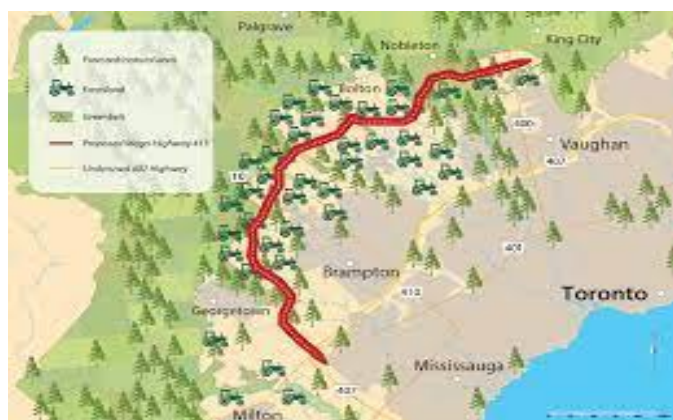


Figure 1 - Proposed 413 Highway Route

50-59 kilometres long

Estimated Costs – Between \$6 Billion to 15 Billion Dollars

Rumored to be a Toll Highway

413 saves 30 seconds to 30 minutes versus using the 407 Tolled Hwy, but

Hwy 413 is 13.6 kms longer. I think they mean the 401 Hwy

Consultants didn't look at the 407 Hwy as a solution for the trucks



Figure 2 – Existing 400-407 Route

Currently Existing – 45.4 Kilometres Long where 413 starts and finish

407 Hwy is Underutilized –Trucks don't take it because of the tolls

Metrolinx GO-Rail Transit Network is an underutilized asset

413 Highway would Save 30 minutes if alternative was to use the 401 Hwy.

Using the 407 Highway would be 10-12 minutes faster than 413 Hwy.



- ix. **WHEREAS** the current Provincial government revived the \$6 billion to \$15 billion GTA West Corridor proposal in 2018, saying it could relieve congestion issues in the fast-growing Toronto suburbs and boost Ontario's economic recovery from COVID-19.
- x. **WHEREAS** several reasonable alternatives to the GTA West Corridor exist including congestion pricing on other highways, shifting truck traffic to the under-utilized 407 Highway including the reduction or elimination of tariffs, transportation system management on other highways (ramp metering, speed harmonization, compass etc (freight, rail improvements. underpasses) and developing the east-west 407 rail transitway including its potential for high-speed electric rail transitway; and
- xi. **WHEREAS** the final recommendation of the Stage 1 Provincial Environmental Assessment (2012) was to first put in place the transportation system management components, rapid transit, freight rail improvements and expansion of existing highways prior to constructing the new expressway; and
- xii. **WHEREAS** the City of Markham has taken reasonable measures to mitigate against climate change which reduce greenhouse gas emissions (GHGs); and
- xiii. **WHEREAS** responding to the climate emergency requires immediate re-evaluation of all transportation plans as greenhouse gas emissions (GHG's) from transportation which is the highest single source of emissions; and
- xiv. **WHEREAS** the proposed GTA 413 Highway Corridor involves destruction of woodlots which are important carbon absorbers and help clean the air; and
- xv. **WHEREAS** the Province must take immediate measures to decrease GHG through alternatives such as increasing public transit, including the necessary local public transit networks, to enable broad access to the higher order transit including high-speed electric trains; and
- xvi. **WHEREAS** the City of Markham has consistently supported transit orientated community development including a high-speed rail transit corridor alongside the 407 Highway to address long term inter-regional transportation solutions and to enhance integration with the development of our communities and supported rail integrated communities along both the GO transit rail lines and the 407 rail transitway; and
- xvii. **WHEREAS** the preferred route for the GTA West 413 highway will increase traffic in the western portion of York Region without appropriate transit solutions; and
- xviii. **WHEREAS** the Toronto Regional Conservation Authority (TRCA), which is the regulatory authority for developments in flood plains, wetlands and valley lands, has also raised concerns about the potential impact of the proposed GTA West Corridor as well as the streamlined Environmental Assessment process; and
- xix. **WHEREAS** the Environmental Assessment undertaken by the previous provincial government was shelved because of strong objection to the GTA Corridor by an expert panel in the fields of rural development, renewable cities, agriculture, environment and efficient transportation who sounded alarms over predicted irreversible ecological harm caused by the uncontrolled, low density urban sprawl enabled by the Corridor; and
- xx. **WHEREAS** Transit Oriented Communities (TOCs) positively contribute toward a more environmentally friendly and economically sustainable communities. TOCs reduce the reliance on car-dependent trips for all members of the community, therefore reducing Vehicle Miles Travelled (VMT) and also reducing the high costs of auto ownership thus contributing to achieving affordable housing outcomes; and



- xxi. **WHEREAS** TOC is based on development above or around an existing, planned or yet-to-be planned piece of transport infrastructure, the path chosen will affect the level of complexity involved. TOD around stations can act as a catalyst for market-led densification ultimately resulting in creative, transit supportive communities while providing significant land value uplift; and
- xxii. **WHEREAS** Strategic land-use planning requires public policy that communicates TOC as integral to a community's long-term vision with supportive official plan and zoning provisions that facilitate density and mixed land use. TOC can be applied based on a range of high densities. Some outlying city areas may focus on developments that offer access to transit connecting to employment venues and high-density downtowns, which boast a mixture of residential, employment, retail and entertainment options. Making TOC an integral consideration in city planning allows urban designers and land use/transportation planners to establish essential ingredients for future development and economic growth; and
- xxiii. **WHEREAS** the Regional Municipality of York passed a resolution on March 18, 2021 requesting a Federal Environmental Impact study for the proposed 413 Highway (GTA West Corridor), and
- xxiv. **WHEREAS** the 407 Highway was created in order to relieve congestion on 401 Highway, but the 407 was tolled, thereby limiting the amount of relief provided by the 407 Highway; and
- xxv. **WHEREAS** the need for rapid transit in the GTA is long overdue and in greater need than the 413 Highway to accommodate growth requirements of the Provincial Government's Growth Plan; and
- xxvi. **WHEREAS** concerned citizens of Markham and a significant number of reputable organizations have demanded cancellation of the GTA West Corridor project, including: Environmental Defense, the David Suzuki Foundation, the Federation of Urban Neighborhoods, Gravel Watch, Halton Environmental Network, National Farmers' Union-Ontario, Rescue Lake Simcoe Coalition, Sustainable Vaughan, Concerned Citizens of King Township (CCKT), Transport Action Ontario, Greenbelt Council, the Wilderness Committee and Sustainable Mississauga; as well as formal opposition of Councils from the municipalities of Halton Hills, Orangeville, Vaughan, Brampton, Mississauga, King and the City of Toronto; and
- xxvii. **WHEREAS** the Ontario NDP Party, Ontario Liberal Party and Ontario Green Party have all announced their opposition to the GTA West Corridor.

**THEREFORE, BE IT RESOLVED:**

1. **THAT** the Council of the City of Markham strongly objects to the proposed GTA West Corridor and Transmission Corridor as it is currently defined; and
2. **THAT** the Council of the City of Markham continues to support an integrated rail transit network which includes high speed rapid rail transit running along beside the 407 highway; and
3. **THAT** the Council of the City of Markham fully supports the Environmental Defense request for a Federal Environmental Impact Study pursuant to s.9(1) of the Impact Assessment Act (I.A.A.), prior to any advancement of this project; and
4. **THAT** the Council of the City of Markham supports the Province undertaking an economic evaluation and time travel analysis of Highway 407 versus the proposed 413 Highway including the potential for congestion and non-peak hour pricing; and
5. **THAT** if the GTA West Corridor does not proceed, that capital costs of funding the proposed GTA West Corridor should be redirected to provide for rapid transit for the Regions of York and Peel such as investment in the 407 rail transitway, improved GO service on the Kitchener and Milton lines, a new GO transit line to Bolton and LRT/BRT on Major Mackenzie; and



6. **THAT** the Council of the City of Markham recommends that the Province undertake a comprehensive economic benefits analysis of the potential for transit orientated communities along the 407 Highway and GO rail transit network and new LRT/BRT lines versus the cost of urban sprawl triggered by the proposed 413 Highway; and
7. **THAT** the Province undertake a review of the Provincial Government Growth Plan for the Greater Golden Horseshoe and the GTA Regional Transportation Plan / Sustainable Communities Strategy to provide holistic comprehensive policies for achieving affordable housing near transit stations including policies to achieve the Province's goal of 50 percent of all new housing over the next twenty-five years being within a half mile of fixed guideway rail transit or high frequency (15 minutes or less, peak hour) bus transit. The Province must also update its affordable housing program to recognize the relationship between housing affordability and transit including the positive role of housing near rail transit TOC stations to improve the operational efficiency of the province's investment in mass transit; and
8. **That** the Province, in undertaking consultation on the proposed GTA West Corridor, ensure that holistic, comprehensive integrated land use planning for the whole of the northern GTA is considered including planning the northern communities for land use and transit prior to considering new roads including the GTA West Corridor; and
9. **AND FURTHER THAT** this Resolution be forwarded to the Premier of Ontario, Doug Ford, the Minister of Transportation, Hon. Caroline Mulroney, MPP York-Simcoe, Hon Jeff Yurek, MPP, the Minister of Environment and Climate Change, Hon. Stephen Lecce, MPP King-Vaughan, Hon. Kinga Surma, Associate Minister of Transportation GTA, Hon. Steve Clarke, Minister of Municipal Affairs and Housing, the Toronto and Region Conservation Authority, Phil Verster, President and CEO, Metrolinx and all Municipalities of the Region of York and as well as the Region of Peel.



cc. Hon Caroline Mulroney, Minister, Ministry of Transportation, [minister.mto@ontario.ca](mailto:minister.mto@ontario.ca)  
 and MPP, York-Simcoe, [caroline.mulroneyca@pc.ola.org](mailto:caroline.mulroneyca@pc.ola.org)  
 Hon Kinga Surma, MPP, Etobicoke Centre, Associate Minister of Transportation GTA, [kinga.surma@pc.ola.org](mailto:kinga.surma@pc.ola.org)  
 Hon. Jeff Yurek, MPP, Elgin-Middlesex-London, Minister of the Environment, Conservation & Parks [minister.mecp@ontario.ca](mailto:minister.mecp@ontario.ca)  
 Hon. Stephen Lecce, MPP, King-Vaughan, Minister of Education, [Stephen.lecce@pc.ola.org](mailto:Stephen.lecce@pc.ola.org)  
 Hon. Ernie Hardeman, MPP, Oxford, Minister of the Agriculture, Food and Rural Affairs, [Ernie@pc.ola.org](mailto:Ernie@pc.ola.org)  
 Hon. Steve Clarke, MPP, Leeds-Grenville, Thousand Islands, Rideau Lake, Kingston, Minister of Municipal Affairs and Housing, [Steve.Clrke@pc.ola.org](mailto:Steve.Clrke@pc.ola.org)  
 Hon. Paul Calandra, Minister Without Portfolio, MPP, Markham-Stouffville, [paul.calandra@pc.ola.org](mailto:paul.calandra@pc.ola.org)  
 Hon. Victor Fedeli, MPP, Nipissing, Minister of Economic Development, Job Creation and Trade, [vic.fedeli@pc.ola.org](mailto:vic.fedeli@pc.ola.org)  
 Hon. Michael Tibollo, MPP, Vaughan, Ministry of Health, [Michael.tibollo@pc.ola.org](mailto:Michael.tibollo@pc.ola.org)  
 Logan Kanapathi, MPP, Markham-Thornhill, [logan.kanapathi@pc.ola.org](mailto:logan.kanapathi@pc.ola.org)  
 Gila Martow, MPP, Thornhill, [Gila.Martow@pc.ola.org](mailto:Gila.Martow@pc.ola.org)  
 Billy Pang, MPP, Markham-Unionville, [billy.pang@pc.ola.org](mailto:billy.pang@pc.ola.org)  
 Michael Parsa, MPP, Aurora-Oak-Ridges-Richmond Hill, [Michael.parsaco@pc.ola.org](mailto:Michael.parsaco@pc.ola.org)  
 Daisy Wai, MPP, Richmond Hill, [Daisy.waico@pc.ola.org](mailto:Daisy.waico@pc.ola.org)  
 Hon Omar Alghabra, MP, Mississauga Centre, Federal Minister of Transport, [Omar.Alghabra@parl.gc.ca](mailto:Omar.Alghabra@parl.gc.ca)  
 Hon Marie Claude Bibeau, MP, Minister of Agriculture and Agr-Food, Compton-Stanstead, [Marie-Claude.Bibeau@parl.gc.ca](mailto:Marie-Claude.Bibeau@parl.gc.ca)  
 Hon. Melanie Joly, MP, Ahuntsic-Cartierville, Minister of Economic Development, [Melanie.Joly@parl.gc.ca](mailto:Melanie.Joly@parl.gc.ca)  
 Hon. Catherine McKenna, MP, Ottawa-Centre, Minister of Infrastructure and Communities, [Catherine.McKenna@parl.gc.ca](mailto:Catherine.McKenna@parl.gc.ca)  
 Hon. Seamus O'Regan, MP, St. John's South-Mount Pearl, Minister of Natural Resources, [Seamus.oregan@parl.gc.ca](mailto:Seamus.oregan@parl.gc.ca)  
 Hon. Deb Schulte, MP, King-Vaughan, Minister of Seniors, [Deb.Schlte@parl.gc.ca](mailto:Deb.Schlte@parl.gc.ca)  
 Hon. Jonathan Wilkinson, MP, North Vancouver, Minister of Environment and Climate Change, [Jonathan.Wilkinson@parl.gc.ca](mailto:Jonathan.Wilkinson@parl.gc.ca)  
 Leona Alleslev, MP Aurora-Oak Ridges-Richmond Hill, [Leona.Alleslev@par.gc.ca](mailto:Leona.Alleslev@par.gc.ca)  
 Helena Jaczek, MP, Markham-Stouffville, [Helena.Jaczek@parl.gc.ca](mailto:Helena.Jaczek@parl.gc.ca)  
 Bob Saroya, MP, Markham-Unionville, [Bob.Saroya@parl.gc.ca](mailto:Bob.Saroya@parl.gc.ca)  
 Hon Mary Ng, MP Markham-Thornhill, Minister of Small Business, Export Promotion & International Trade, [Mary.Ng@parl.gc.ca](mailto:Mary.Ng@parl.gc.ca)  
 Peter Kent, MP, Thornhill, [Peter.Kent@parl.gc.ca](mailto:Peter.Kent@parl.gc.ca)  
 Francesco Sorbara, MP, Vaughan-Woodbridge, [Francesco.Sorbara@parl.gc.ca](mailto:Francesco.Sorbara@parl.gc.ca)  
 Majid Jowhari, MP, Richmond Hill, [Majid.Jowhari@parl.gc.ca](mailto:Majid.Jowhari@parl.gc.ca)  
 Phil Verster, President and CEO, Metrolinx, [ceo@metrolinx.com](mailto:ceo@metrolinx.com)  
 John McKenize, CEO, Toronto and Region Conservation Authority (TRCA) [info@trca.ca](mailto:info@trca.ca)  
 Andrea Horwath, MPP, Hamilton Centre, Leader of the Official Opposition & Ontario NDP Party, [horwatha-qp@ndp.on.ca](mailto:horwatha-qp@ndp.on.ca)  
 Steven Del Duca, Leader of the Ontario Liberal Party, [info@ontarioliberal.ca](mailto:info@ontarioliberal.ca)  
 David McFadden, Chairman 407ETR, [David.McFadden@Gen4.ca](mailto:David.McFadden@Gen4.ca)  
 Javier Tamargo, President and CEO 407ETR, [jtamargo@407etr.com](mailto:jtamargo@407etr.com),  
 Wayne Emmerson, Chairman and CEO, York Region, [wayne.emmerson@york.ca](mailto:wayne.emmerson@york.ca)  
 Chris Raynor, Clerk, Regional Municipality of York, [regional.clerk@york.ca](mailto:regional.clerk@york.ca)  
 Stephen Huycke, Clerk, Town of Richmond Hill, [Stephen.huycke@richmondill.ca](mailto:Stephen.huycke@richmondill.ca)  
 Michael DeRond, Clerk, Town of Aurora, [MdeRond@aurora.ca](mailto:MdeRond@aurora.ca)  
 Gillian Angus-Traill, Clerk, Town of Whitchurch-Stouffville, [Gillian.angustrail@townofws.ca](mailto:Gillian.angustrail@townofws.ca)  
 Fernando Lamanna, Clerk, Town of East Gwillimbury, [flamanna@eastgwillimury.ca](mailto:flamanna@eastgwillimury.ca)  
 Lisa Lyons, Clerk, Town of Newmarket, [llyons@newmarket.ca](mailto:llyons@newmarket.ca)  
 Rachel Dillabough, Deputy Clerk, Town of Georgina, [rdillabough@georgina.ca](mailto:rdillabough@georgina.ca)  
 Kim Kitteringham, Clerk, City of Markham, [KKitteringham@markham.ca](mailto:KKitteringham@markham.ca)  
 Todd Coles, City Clerk, City of Vaughan, [Todd.Coles@vaughan.ca](mailto:Todd.Coles@vaughan.ca)  
 Laura Hall, Director and Township Clerk, Town of Caledon, [laura.hall@caledon.ca](mailto:laura.hall@caledon.ca)  
 Kathryn Lockyer, Regional Clerk, Region of Peel, [regional.clerk@peelregion.ca](mailto:regional.clerk@peelregion.ca)



## **Yonge North Subway Extension (YNSE) Markham Three (3) Station Area Study**

Moved by: Regional Councillor Jim Jones

Seconded by: Councillor Ward 1 Keith Irish

### **Notice of Motion: Yonge North Subway Extension - Markham Three Station Area Study**

**WHEREAS** the Province is undertaking the planning studies for the Yonge North Subway Extension (YNSE); and,  
**WHEREAS** on March 18, 2021 Metrolinx released the Initial Business Case that affects the City of Markham and recommends advancing design of the YNSE; and

**WHEREAS** the Initial Business Case proposes up to four stations along the 8-kilometre subway extension and a new easterly route realignment at Royal Orchard that proposes the subway travel under an established residential neighbourhood in order to connect to the GO/CN Corridor; and,

**WHEREAS** intensification and redevelopment needs to occur along major rapid rail transit corridors like Yonge Street to support Provincial growth direction and to build sustainable communities, including the realization of transit-oriented communities; and,

**WHEREAS** the City undertook a study in 2020 entitled “Yonge North Subway Intensification Analysis” to identify development potential and population and employment forecasts and densities within the Steeles Avenue, Clark Avenue, Royal Orchard Boulevard, Langstaff Gateway and Richmond Hill Centre Station Areas that was provided to Metrolinx as input into the Initial Business Case for the YNSE; and further,

**WHEREAS** it is necessary for the City to undertake additional technical work to confirm the Transit Oriented Community potential surrounding Steeles, Clark and Royal Orchard Station areas as preliminary work toward a Secondary Plan exercise for the Yonge Street Corridor and to inform the YNSE process.

### **Therefore, now be it resolved:**

1. That the City of Markham immediately initiate the secondary plan for the Yonge Street Corridor approved as part of the 2020 Capital budget including more detailed analysis of growth potential along the corridor through a Preliminary Design Business Case which will include land use/built form study as preliminary work towards development of the Yonge Street Corridor Secondary Plan to confirm development potential and a preliminary land use concept, including 3D modelling and financial analysis, for three distinct areas along the Yonge Corridor, generally located within the Region’s “2020 Proposed Major Transit Station Areas, September 2020”, including:
  - a. Steeles Subway Station (MTSA 7) and lands within its 800-metre catchment area to the north,  
**(eastern boundary is Dudley Avenue, northern boundary is the CN tracks, western boundary is Yonge Street and southern boundary is Steeles Avenue)**
  - b. Clark Subway Station (MTSA 6) and lands within its 800-metre catchment area; and **(eastern boundary is Dudley Avenue, north boundary is Elgin Street, Yonge Street is the western boundary, and the CN tracks are the southern boundary)**
  - c. Royal Orchard Subway Station (MTSA 70) and lands within its 800-metre catchment area; and **(Royal Orchard is the southern boundary, Yonge Street is the western boundary, southern boundary of Holy Cross Cemetery is the northern boundary and eastern boundary to be determined)**



2. That staff initiate the RFP process for the Preliminary Design Business Case and report back on remaining stages of the secondary plan exercise including a project schedule and resourcing of the secondary plan process; and
3. That the interview committee be comprised of the Thornhill Subcommittee, the CAO, the Commissioner of Development Services, the Director of Planning and Urban Design and a representative of the Purchasing Division; and,
4. That Markham staff be authorized and directed to do all things necessary to give effect to this resolution and report back to Development Services Committee at completion of the study.

Hon Caroline Mulroney, Minister, Ministry of Transportation, [minister.mto@ontario.ca](mailto:minister.mto@ontario.ca)

and MPP, York-Simcoe, [caroline.mulroneyca@pc.ola.org](mailto:caroline.mulroneyca@pc.ola.org)

Hon Kinga Surma, MPP, Etobicoke Centre, Associate Minister of Transportation GTA, [kinga.surma@pc.ola.org](mailto:kinga.surma@pc.ola.org)

Hon. Jeff Yurek, MPP, Elgin-Middlesex-London, Minister of the Environment, Conservation & Parks [minister.mecp@ontario.ca](mailto:minister.mecp@ontario.ca)

Hon. Stephen Lecce, MPP, King-Vaughan, Minister of Education, [Stephen.lecce@pc.ola.org](mailto:Stephen.lecce@pc.ola.org)

Hon. Steve Clarke, MPP, Leeds-Grenville, Thousand Islands, Rideau Lake, Kingston, Minister of Municipal Affairs and Housing, [Steve.Clrke@pc.ola.org](mailto:Steve.Clrke@pc.ola.org)

Hon. Paul Calandra, Minister Without Portfolio, MPP, Markham-Stouffville, [paul.calandra@pc.ola.org](mailto:paul.calandra@pc.ola.org)

Hon. Victor Fedeli, MPP, Nipissing, Minister of Economic Development, Job Creation and Trade, [vic.fedeli@pc.ola.org](mailto:vic.fedeli@pc.ola.org)

Hon. Michael Tibollo, MPP, Vaughan, Ministry of Health, [Michael.tibollo@pc.ola.org](mailto:Michael.tibollo@pc.ola.org)

Logan Kanapathi, MPP, Markham-Thornhill, [logan.kanapathi@pc.ola.org](mailto:logan.kanapathi@pc.ola.org)

Gila Martow, MPP, Thornhill, [Gila.Martow@pc.ola.org](mailto:Gila.Martow@pc.ola.org)

Billy Pang, MPP, Markham-Unionville, [billy.pang@pc.ola.org](mailto:billy.pang@pc.ola.org)

Michael Parsa, MPP, Aurora-Oak-Ridges-Richmond Hill, [Michael.parsaco@pc.ola.org](mailto:Michael.parsaco@pc.ola.org)

Daisy Wai, MPP, Richmond Hill, [Daisy.waico@pc.ola.org](mailto:Daisy.waico@pc.ola.org)

Hon. Catherine McKenna, MP, Ottawa-Centre, Minister of Infrastructure and Communities, [Catherine.McKenna@parl.gc.ca](mailto:Catherine.McKenna@parl.gc.ca)

Hon. Deb Schulte, MP, King-Vaughan, Minister of Seniors, [Deb.Schlte@parl.gc.ca](mailto:Deb.Schlte@parl.gc.ca)

Leona Alleslev, MP Aurora-Oak Ridges-Richmond Hill, [Leona.Alleslev@par.gc.ca](mailto:Leona.Alleslev@par.gc.ca)

Helena Jaczek, MP, Markham-Stouffville, [Helena.Jaczek@parl.gc.ca](mailto:Helena.Jaczek@parl.gc.ca)

Bob Saroya, MP, Markham-Unionville, [Bob.Saroya@parl.gc.ca](mailto:Bob.Saroya@parl.gc.ca)

Hon Mary Ng, MP Markham-Thornhill, Minister of Small Business, Export Promotion & International Trade, [Mary.Ng@parl.gc.ca](mailto:Mary.Ng@parl.gc.ca)

Peter Kent, MP, Thornhill, [Peter.Kent@parl.gc.ca](mailto:Peter.Kent@parl.gc.ca)

Francesco Sorbara, MP, Vaughan-Woodbridge, [Francesco.Sorbara@parl.gc.ca](mailto:Francesco.Sorbara@parl.gc.ca)

Majid Jowhari, MP, Richmond Hill, [Majid.Jowhari@parl.gc.ca](mailto:Majid.Jowhari@parl.gc.ca)

Phil Verster, President and CEO, [Metrolinx](mailto:Metrolinx), [ceo@metrolinx.com](mailto:ceo@metrolinx.com)

John McKenize, CEO, Toronto and Region Conservation Authority (TRCA) [info@trca.ca](mailto:info@trca.ca)

Wayne Emmerson, Chairman and CEO, York Region, [wayne.emmerson@york.ca](mailto:wayne.emmerson@york.ca)

Chris Raynor, Clerk, Regional Municipality of York, [regional.clerk@york.ca](mailto:regional.clerk@york.ca)

Stephen Huycke, Clerk, Town of Richmond Hill, [Stephen.huycke@richmondill.ca](mailto:Stephen.huycke@richmondill.ca)

Todd Coles, City Clerk, City of Vaughan, [Todd.Coles@vaughan.ca](mailto:Todd.Coles@vaughan.ca)