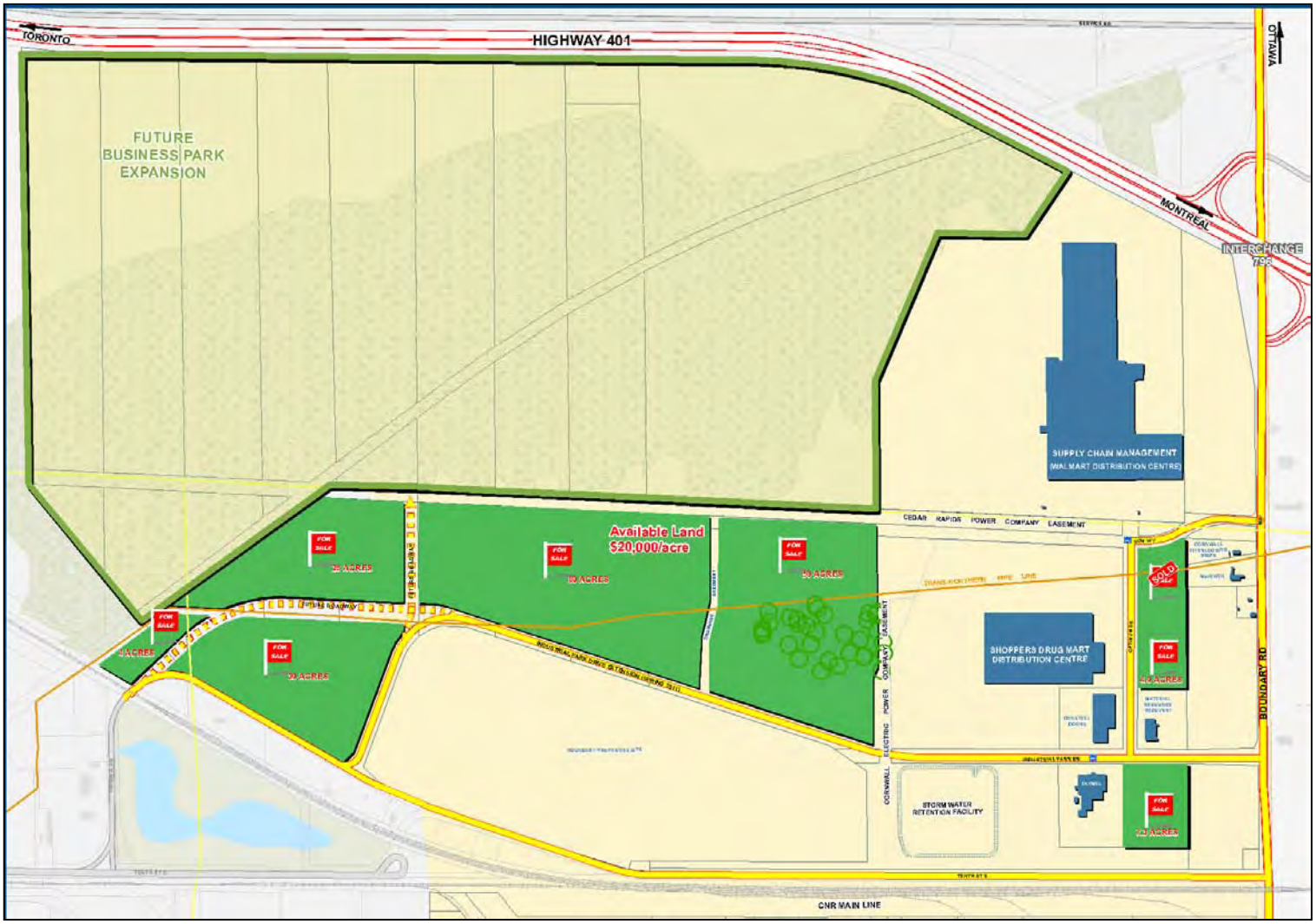
Prepared for:
City of Cornwall

Environmental Study Report



Municipal Class Environmental Assessment for the Cornwall Business Park Transportation Master Plan

GENIVAR File No. 111-15011

GENIVAR

January 2013

City of Cornwall

Cornwall Business Park Transportation Master Plan Environmental Assessment (EA) Study

Environmental Study Report

January 2013

Prepared by:

GENIVAR

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1.0 PROJECT SUMMARY

1.1 Introduction and Background

A Comprehensive Industrial Park Development Study was completed in 1981 for the Business Park lands located between Highway 401 and Tenth Street. A Final Concept Plan was developed which outlined land uses and a transportation network for the Cornwall Business Park.

Since 1981, the Cornwall Business Park has seen development occur in the southern and eastern limits of the park.

Recently, the City of Cornwall has undertaken the following development initiatives:

- Extended Industrial Park Drive westerly to Tenth Street to improve the transportation network within the Business Park. The extension results in the closure of the existing Tenth Street/Boundary Road intersection at the CN railway line as a safety improvement;
- Sold lands south of the Industrial Park Drive extension to Boundary Properties for a new distribution centre; and
- Sold lands north of the Industrial Park Drive extension to Target for a new distribution centre.

With the majority of lands sold and developed in the southern and eastern portions of the Business Park, the City of Cornwall is examining future development expansion and transportation network possibilities in the northern and western portions of the Business Park. A new transportation link in the northwestern portion of the Business Park would provide an access to McConnell Avenue (via Tollgate Road) and the interchange at Highway 401. The new transportation network would also incorporate a utilities/services (water/sewer/hydro) corridor within the road allowance and link to existing utilities in the south portion of the Business Park.

GENIVAR was retained by the City of Cornwall to complete this study as a Schedule "C" project.

Therefore, the purpose of this EA is to define a Recommended Transportation Plan within the expansion lands in the northwestern quadrant of the Cornwall Business Park. The Recommended Plan will:

- Improve the roadway network connectivity, operations and safety within the expansion lands of the Cornwall Business Park;
- Accommodate all modes of travel (bicycles, pedestrians, trucks, emergency vehicles and transit);
- Accommodate land development within the expansion lands of the Cornwall Business Park;
- Define the future roadway alignment which will allow development within the business park; and
- Receive environmental clearance for the future detail design and construction of the roadway.

The Recommended Transportation Plan provides the City with the ability to protect

property for the implementation of a new roadway to ensure growth in travel demand is accommodated and can be addressed appropriately.

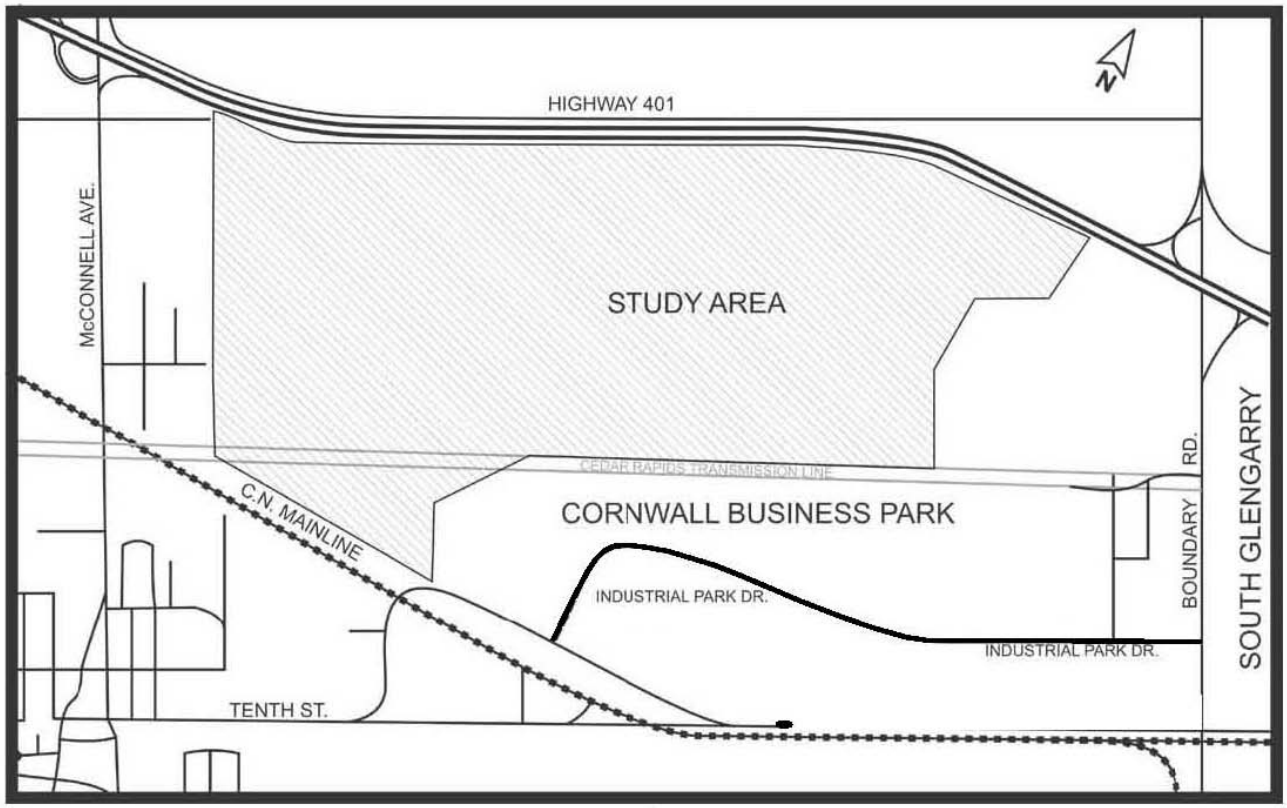
This study has been carried out in consultation with the City of Cornwall, the general public, external agencies, and consultant staff. Members of the public were invited to two (2) Public Open Houses which were held during the course of the study to present issues, alternatives, a Recommended Plan and to obtain public feedback. A Technical Advisory Committee was formed to undertake the technical aspects of the study and to communicate local concerns and preferences. The Technical Advisory Committee consisted of City of Cornwall staff and consultant staff from GENIVAR.

This Environmental Study Report (ESR) presents to the public and review agencies a description of the Environmental Assessment (EA) study process that was undertaken and the corresponding Recommended Plan that was developed as a result of the EA process. This EA was carried out in accordance with the *'Municipal Class Environmental Assessment, 2007'* as a Schedule "C" project.

1.2 **Study Area**

The Study Area is within the expansion lands in the northwestern quadrant of the Cornwall Business Park. The Study Area is illustrated in **Figure 1-1.**

Figure 1-1
Study Area



1.3 Report Organization

The EA Process was undertaken in a series of phases commencing with identifying the problem and proposed study process and culminating in the filing of this Environmental Study Report (ESR). The EA process included public consultation, an evaluation of all reasonable alternatives, and selection of a Recommended Plan. The effects on the natural, social and cultural environments, as a result of the proposed recommended plan, can be mitigated. See **Chapter 7** for a summary of the effects and mitigation measures proposed.

This ESR has been divided into eight chapters that are as follow:

1. Project Summary
2. Need and Justification
3. Approach and Consultation
4. Existing Conditions
5. Analysis and Evaluation
6. Recommended Plan
7. Areas of Environmental Sensitivities and Mitigation Measures
8. Conclusions

Technical and supporting documentation is appended to this document.

1.4 Need and Justification

The Cornwall Business Park has seen extensive development over the last several years. The need to extend Industrial Park Drive from its existing terminus westerly to Tenth Street was triggered with the planned development of two (2) large scale distribution centres (Target and Boundary Properties over the last 2 years). The construction of this extension was completed in the summer of 2012. With the development of these 2 sites, the Cornwall Business Park has essentially reached its capacity in the southern and eastern quadrants. Therefore, the City of Cornwall has planned to open up development opportunities in the northwestern quadrant of the Business Park and require the implementation of a transportation network to accommodate access to new development sites and provide connectivity with the existing local roadway network.

1.5 Municipal Class EA Process

This project was subject to the planning and design process of the Municipal Class Environmental Assessment (Class EA) for municipal projects (refer to **Section 3.2**). This study was completed as a Schedule "C" project and therefore required the preparation of this Environmental Study Report (ESR).

The Municipal Class EA is a planning and design process developed to ensure that all potential natural, social/cultural, and economic environments as well as property

and land use effects are considered when undertaking certain projects. The Municipal Engineers Association of Ontario received approval of the most current Class EA document by the Minister of the Environment in 2007.

The Class EA for municipal road projects provides a methodology for planning projects covered under the EA Act, including obtaining and documenting the necessary public input. It also outlines the methodology for preparing ESR's. The different phases of the process include:

1. Define project need and justification
2. Identify and evaluate alternative solutions and select the preferred solution
3. Identify and evaluate alternative design concepts and select the preferred alternative
4. Document the planning process in the form of an ESR (for Schedule C projects)
5. Construction and Monitoring

With the filing of this report, Phases 1 to 4 of the EA process have been completed. From this process, a Recommended Plan has been selected. This evolving design and final Recommended Plan has been based on meaningful dialogue with all affected stakeholders. The process included one Public Open House.

City of Cornwall Council endorsed the technical recommendations for this project on November 26, 2012. The ESR is being filed with the City's Clerk for the 30 day public review period beginning on January 23, 2013.

If public concerns regarding this project cannot be resolved, any person may request a Part II Order. Should the Minister of Environment deem that this is necessary; an Individual Environmental Assessment may be directed. Should no concerns be expressed to the Minister of Environment within thirty (30) days of filing the ESR and notification thereof, the project can proceed in accordance with the recommendations of the ESR.

In summary, the planning and design process undertaken for the Cornwall Business Park Transportation Master Plan EA project addresses all the requirements for the Municipal Class EA.

1.6 Analysis and Evaluation of Alternatives

1.6.1 Alternative Planning Solutions - Transportation

The analysis and evaluation of transportation alternatives was undertaken as a two-step process. Initially, alternative transportation planning solutions were assessed as required by the Class EA.

The alternative transportation planning solutions were analyzed to scope the higher level solutions that should be carried forward, then a detailed analysis was provided of various alternative designs.

The following is a list of these transportation solutions:

- ***Do Nothing*** (Maintain current transportation network);
- ***Limit/Defer Growth*** (Defer/limit new development in the northwestern portion of the Cornwall Business Park);
- ***Transportation System Management (TSM) / Transportation Demand Management (TDM)***; and
- ***New and/or Improved Roadway***.

Based on a qualitative analysis of alternative transportation planning solutions (refer to **Section 5.3**) it was recommended that a ***New and/or Improved Roadway*** was an appropriate solution to meet the future development growth in the Study Area. This recommendation was presented at the first Public Open House and supported by the public and Technical Advisory Committee.

1.6.2 Preliminary Design Analysis and Evaluation

1.6.2.1 Roadway Alignment

Seven (7) preliminary roadway design alternatives were considered for the Cornwall Business Park Master Plan project. They included:

- **Alternative 1A –** Roadway link from Tollgate Road southerly to Virginia Drive along the western limits of the Business Park;
- **Alternative 1B –** Roadway link from Tollgate Road southerly to Virginia Drive further east of the western limits of the Business Park;
- **Alternative 2A** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2B –** Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2C** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2D** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park; and
- **Alternative 3 –** Roadway link from Tollgate Road easterly to SCM Way.

The alternatives are shown in **Figure 1-2**.

The results of the evaluation exercise indicated that **Alternative 2A** was the Technically Preferred Alternative (See **Section 5.0**).

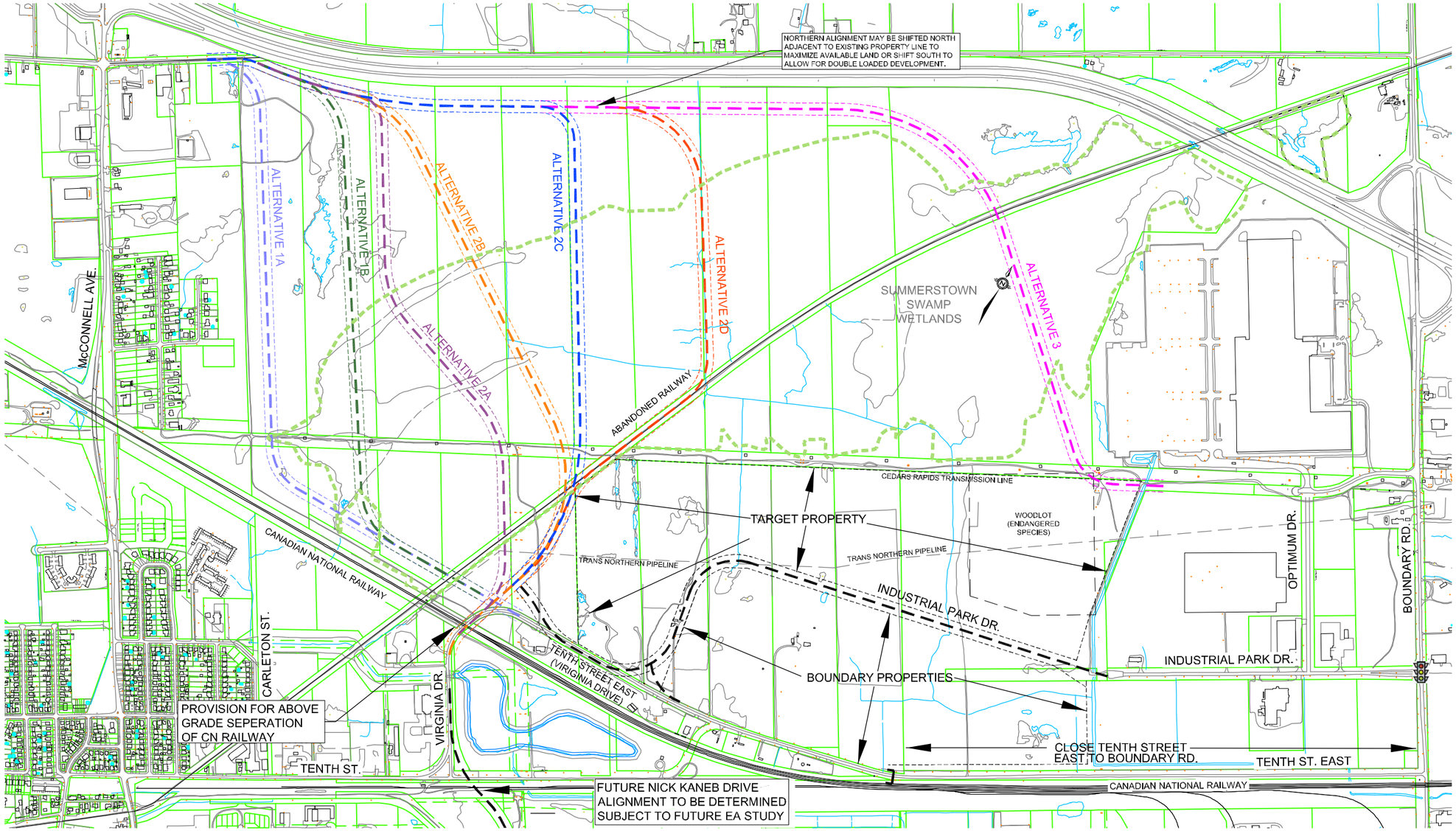


FIGURE 1-2

SCALE: N.T.S.

PRELIMINARY DESIGN ALTERNATIVES

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

Cornwall
ONTARIO CANADA

GENIVAR

1.6.3 Technically Preferred Alternative

The Technically Preferred Alternative (TPA) provides a new roadway linking Industrial Park Drive in the southern portion to Tollgate Road in the northwestern quadrant of the Business Park.

The Technically Preferred Alternative (TPA) is shown in **Figure 1-3** and includes:

- A new roadway link extending from the recently completed Industrial Park Drive to Tollgate Road in the northwestern quadrant of the Business Park;
- Accommodating development lands in the expansion area of the Cornwall Business Park;
- Providing improved roadway geometry and connectivity to accommodate increased vehicular traffic destined to and from the Cornwall Business Park from the McConnell Avenue Interchange;
- Providing an additional access point to the Cornwall Business Park;
- A provision to provide, in the future, an above grade separation at the CN Railway when traffic warrants are met for safety purposes; and
- Providing a shared corridor for infrastructure services (water, sewer, hydro).

The TPA was presented to the public at the second Public Open House.

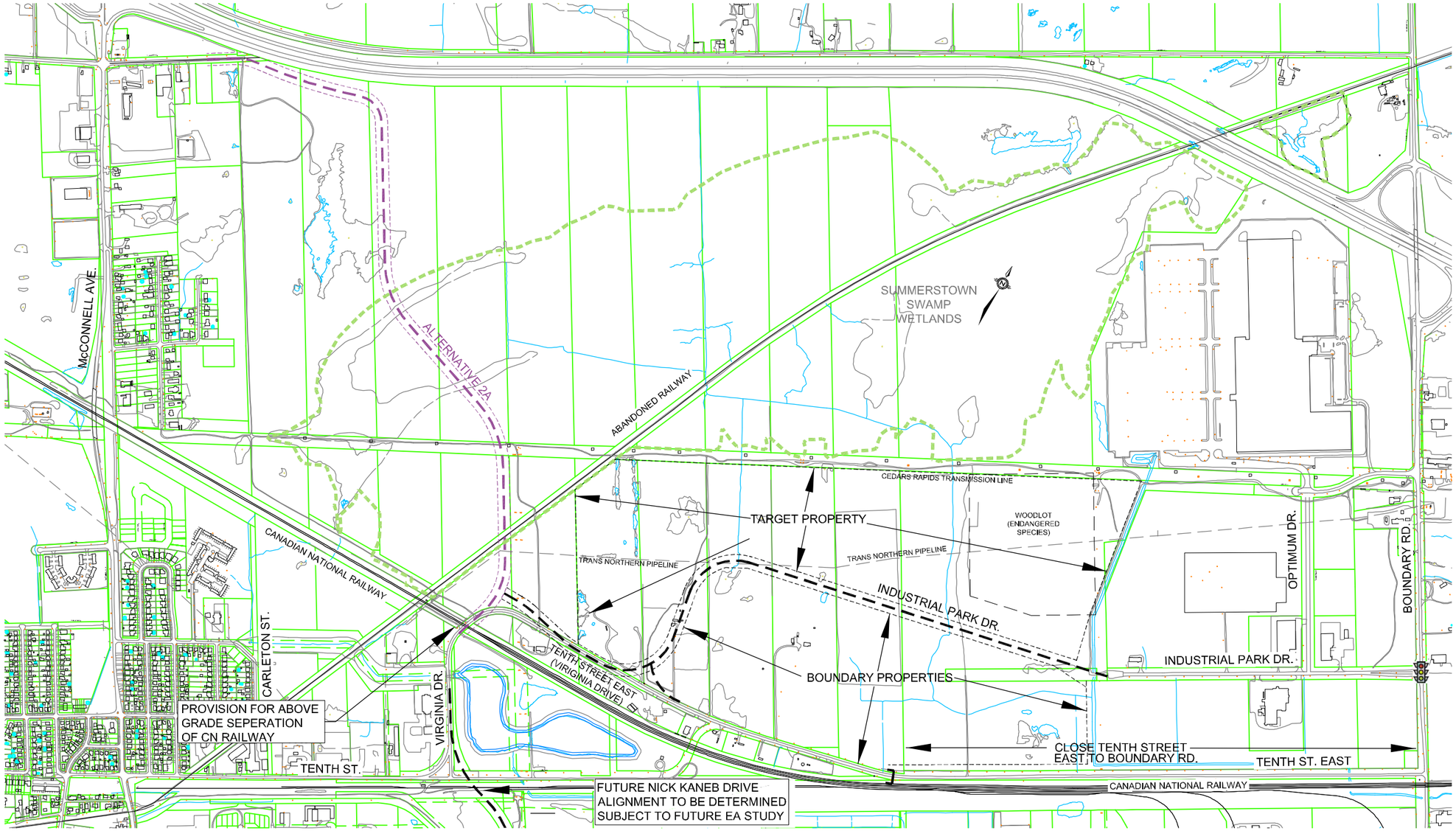


FIGURE 1-3

SCALE: N.T.S.

TECHNICALLY PREFERRED ALTERNATIVE

Cornwall
ONTARIO CANADA

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

GENIVAR

1.7 **Recommended Plan**

Following the second Public Open House, the Technically Preferred Alternative, having received input and comments from the public, agencies and Study Team, was carried forward as the Recommended Plan to be implemented following environmental approval.

The Recommended Plan is shown in **Figure 1-4.**

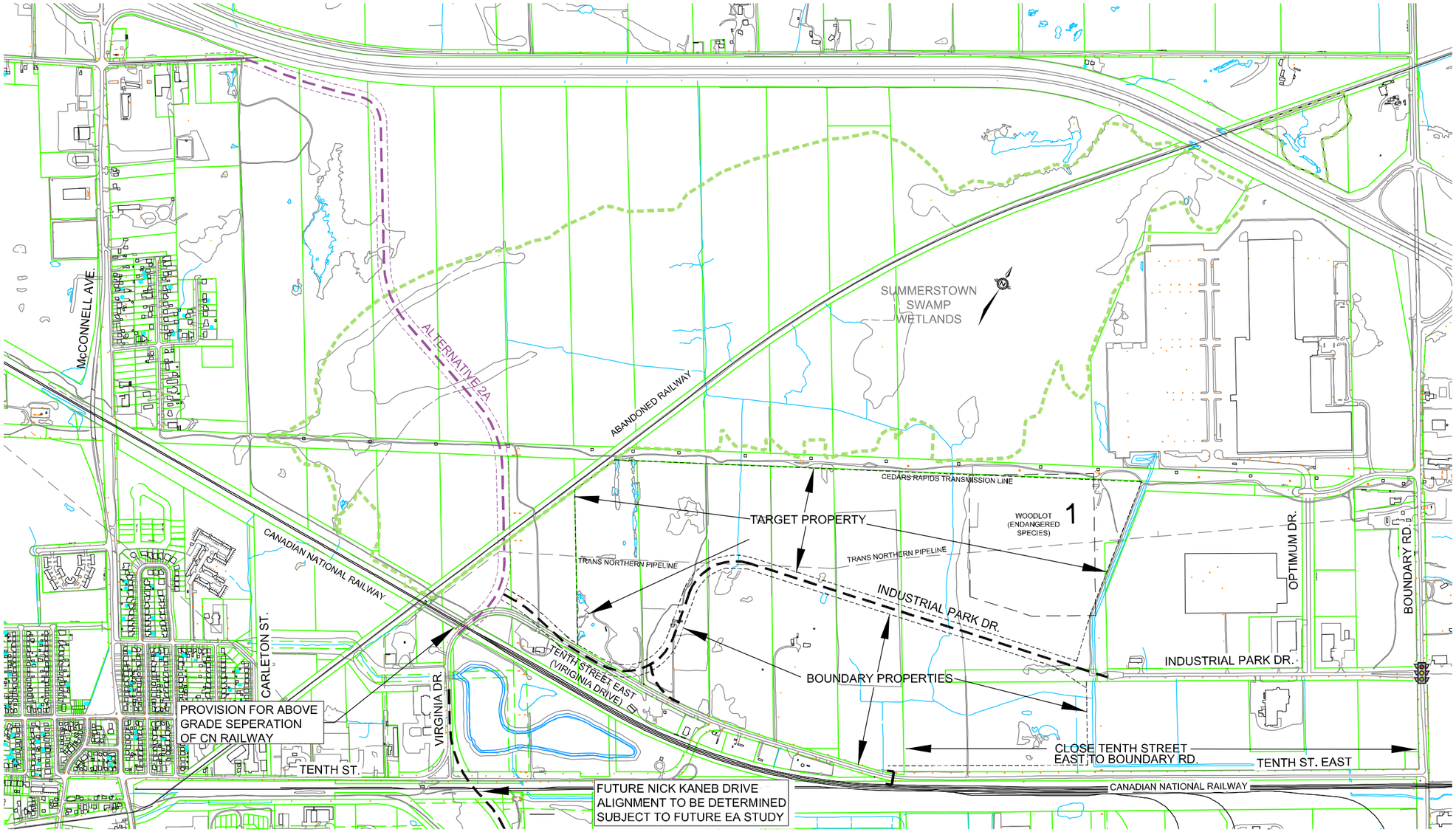


FIGURE 1-4

SCALE: N.T.S.

RECOMMENDED PLAN

Cornwall
ONTARIO CANADA

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

GENIVAR

1.8 Consultation

1.8.1 Public Consultation

The Cornwall Business Park Master Plan EA Study was carried out in accordance with the *Municipal Engineer's Association Class EA Process for Municipal Road Projects (2007)* as a Schedule "C" project. Throughout the duration of the study, regular progress meetings were held with the Technical Advisory Committee to seek input, direction and concurrence on the study findings and recommendations.

The following is a list of consultation activities for this study:

- Notification of Study Commencement/ Public Open House No. 1 to public, agencies and stakeholders – June 12, 2012;
- Public Open House No. 1 – June 19, 2012;
- Notification of Public Open House No. 2 to public, agencies and stakeholders – October 10, 2012;
- Public Open House No. 2 – October 17, 2012;
- City of Cornwall Council Presentation – November 13, 2012; and
- Notification of Study Completion to public, agencies and stakeholders – January 23, 2013.

The public consultation efforts for this study were successful. At the conclusion of the study, the majority of comments received from members of the public were positive, in support of the recommendations to construct a new roadway within the Study Area.

1.8.2 Technical Advisory Committee (TAC)

The Technical Advisory Committee (TAC) included City of Cornwall (proponent) staff and consultant staff (GENIVAR). The TAC was organized to complete the technical aspects of the study and to communicate local concerns and preferences.

1.9 Construction Costs and Implementation

The preliminary cost estimate to complete the construction of the Recommended Plan is approximately $4.0 million (See **Section 7.8**). Implementation of the roadway would only take place as development lands and services are required within the expansion lands of the Cornwall Business Park.

1.10 Conclusions

Based on the findings of this study, the Recommended Plan for Cornwall Business Park Master Plan EA recommends the construction of a 2-lane undivided arterial roadway within a 36 m road allowance from Industrial Park Drive northwesterly to Tollgate Road.

These conclusions were achieved through the application of the Class Environmental Assessment (EA) for Municipal Projects. The public and government agencies have contributed to the findings of the report through their active participation throughout the course of the study.

2.0 NEED AND JUSTIFICATION

2.1 Study Purpose

The Cornwall Business Park has seen extensive development over the last several years. The need to extend Industrial Park Drive from its existing terminus westerly to Tenth Street was triggered with the planned development of two (2) large scale distribution centres (Target and Boundary Properties over the last 2 years). The construction of this extension was completed in the summer of 2012. With the development of these 2 sites, the Cornwall Business Park has essentially reached its capacity in the southern and eastern quadrants. Therefore, the City of Cornwall has planned to open up development opportunities in the northwestern quadrant of the Business Park and require the implementation of a transportation network to accommodate access to new development sites and provide connectivity with the existing local roadway network.

A new roadway link in the northwestern quadrant also provides an additional access point to the Business Park and to Highway 401 via the McConnell Avenue Interchange. This access point would help distribute traffic to Highway 401 more evenly between the Boundary Road and McConnell Avenue Interchanges.

3.0 STUDY APPROACH AND CONSULTATION

3.1 Background

This section of the Environmental Study Report presents a discussion of the following:

- Environmental Assessment requirements;
- Study process and tasks involved in the completion of the project; and
- The study organization including:
  - Technical Advisory Committee membership;
  - Involvement of external agencies and interest groups; and
  - Public participation program.

3.2 Environmental Assessment Requirements

This project has been undertaken as a Schedule "C" Class EA as outlined in the *"Municipal Class Environmental Assessment, 2007"*. This document specifies the procedures required for road planning and servicing projects. The study process is illustrated in **Figure 3-1, Municipal Class EA Planning and Design Process**.

The study followed the Ministry Of Environment's (MOE's) five guiding principles for EA studies, namely:

- Consider all reasonable alternatives;
- Provide a comprehensive assessment of the environment;
- Utilize a systematic and traceable evaluation of net effects;
- Undertake a comprehensive public consultation program; and
- Provide clear and concise documentation of the decision-making process and public consultation program.

These principles are described in the following sections.

3.3 Study Process

The study process for the Cornwall Business Park Transportation Master Plan EA project was carried out in a series of steps commencing with study need and culminating in the filing of this ESR. The steps in the study process are as follow:

Phase 1: Identification of the problem and opportunity

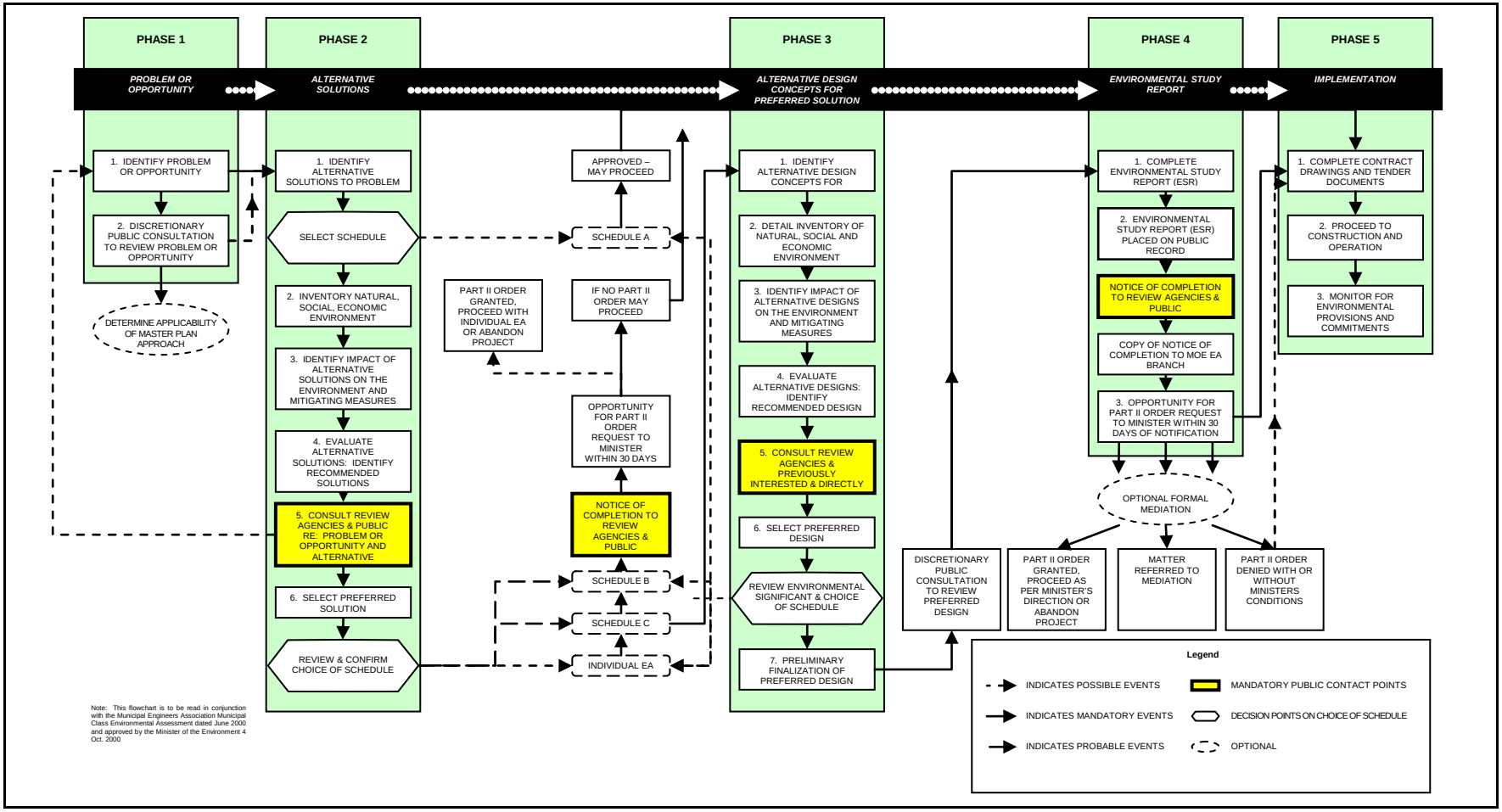
Phase 2: Environmental Inventories and Review and Confirmation of the Alternative Planning Solutions considered

Phase 3: Generation and Assessment of Design Alternatives

Phase 4: Documentation/ Environmental Study Report (ESR)

The project included effective and meaningful public consultation in each phase of the process.

Figure 3-1
Municipal Class EA Planning and Design Process



A description of the individual stages and the various activities is provided in subsequent sections of this report. **Figure 3-2, Generalized Planning Process** provides a pictorial representation of the various technical and public consultation tasks and their inter-relationships.

3.4 Study Organization

The City of Cornwall provided overall direction for the study, including technical advice and assistance relating to transportation needs, roadway element design, property, and other infrastructure elements. In addition, the City provided coordination and liaison with municipal representatives, external agencies, elected representatives, interest groups, property owners, and the public.

The specific activities for each element of the study are described in the following sections.

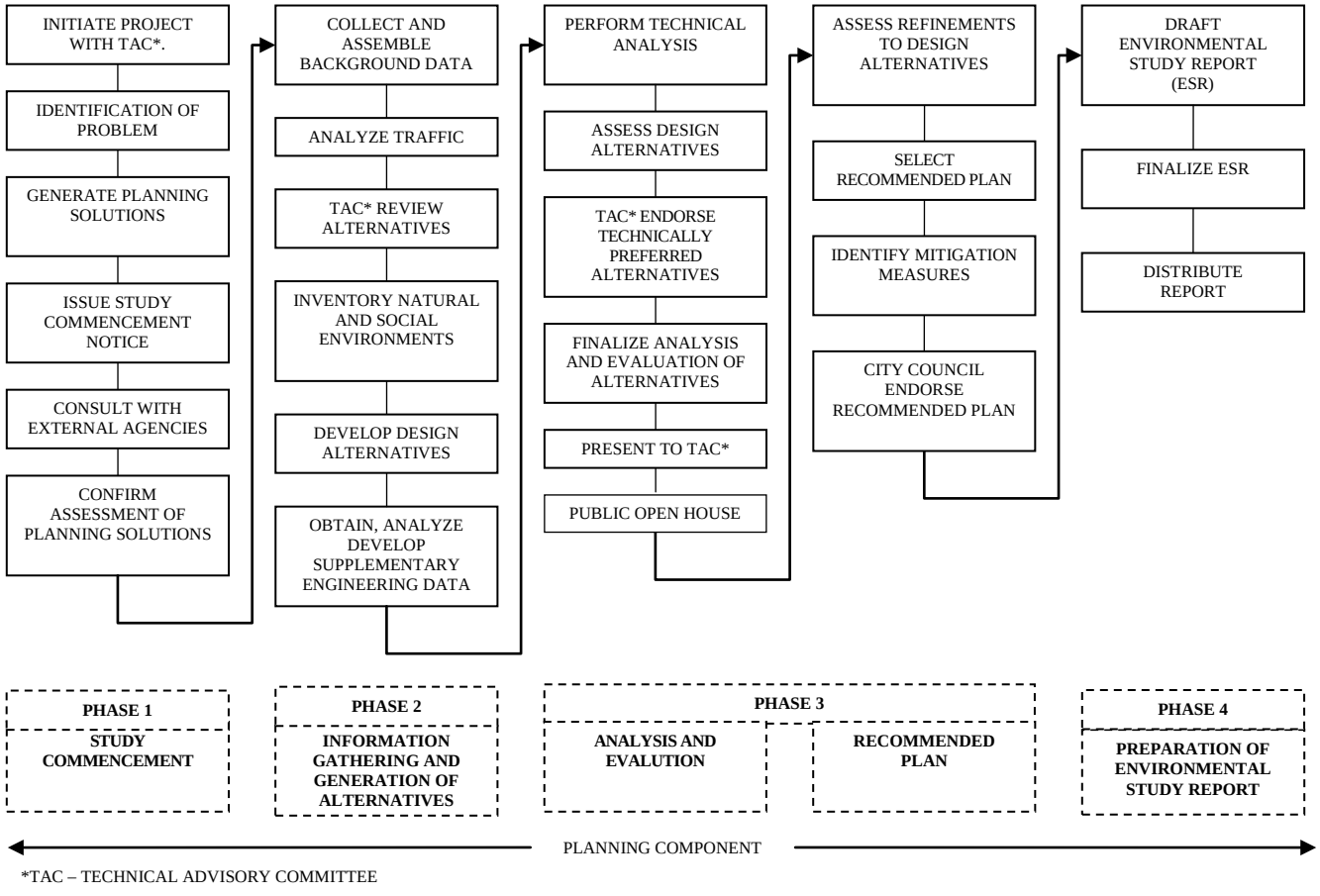
Figure 3-3 summarizes the study organization including the external agencies, study partners, project team, and Technical Advisory Committee.

3.4.1 Technical Advisory Committee (TAC)

Direction and consultation for the study was provided by a Technical Advisory Committee (TAC). The role of the TAC was to complete the technical aspects of the study and to communicate local concerns and preferences. Membership on the TAC was from the following organizations:

- City of Cornwall staff; and
- Consultant Staff (GENIVAR)

Figure 3-2
Generalized Planning Process



*TAC – TECHNICAL ADVISORY COMMITTEE

Figure 3-3
Study Organization

CONSULTANT TEAM

- GENIVAR
  - Project Management
  - Transportation
  - Class EA Process
  - Analysis and Evaluation
  - Public Consultation
- Brunton Consulting Services
  - Natural Environment
- Central Archaeology
  - Archaeology

STUDY PROPONENT
City of Cornwall

TECHNICAL ADVISORY COMMITTEE (TAC)

- City of Cornwall Staff
- Consultant Staff (GENIVAR)

EXTERNAL AGENCIES

- Ministry of the Environment
- Ministry of Culture
- Ministry of Natural Resources
- Department of Fisheries and Oceans Canada
- Ministry of Transportation
- Transport Canada
- Raisin Region Conservation Authority
- St. Lawrence Parks Commission
- Ministry of Health and Long-Term Care
- Health Canada
- Ministry of Economic Development and Trade
- Environment Canada
- St. Lawrence River Restoration Council
- Heritage Cornwall Local Architectural Conservation Advisory Committee
- St. Lawrence River Institute of Environmental Sciences
- Canadian National Railway
- Cornwall Chamber of Commerce
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Attorney General
- United Counties of SD&G
- Township of South Glengarry
- Eastern Ontario Health Unit
- Municipal Environmental Advisory Committee
- Conseil écoles publiques de l'Est de l'Ontario (French)
- Upper Canada District School Board (Public)
- Catholic District School Board of Eastern Ontario (English)
- Conseil scolaire district catholique de l'Est ontarien
- Cornwall Fire Service
- Cornwall Police Service
- Utilities (Bell Canada, Cornwall Electric, Union Gas, Trans Canada Pipeline, Atria Networks, Cogeco Cable, Trans Northern Pipelines and Cedar Rapids Transmission Company Commission)

3.4.2 Consultant Team

GENIVAR was retained to provide transportation and project management expertise and conduct specialty services related to:

- Project Management
- Transportation;
- Class EA Process;
- Analysis and Evaluation; and
- Public Consultation.

The services of several sub-consultants were also retained to provide expert advice in required areas as follows:

- Brunton Consulting Services – Wildlife/Botany; and
- Central Archaeology - Archaeology.

3.4.3 City Council

City councillors were kept informed of the study through City staff and through attendance at the Public Open Houses. City Council endorsed the Recommended Plan on November 26, 2012. Refer to **Appendix B, Council Resolution**.

3.4.4 Special Interest Groups and Other Agencies

Throughout the project, a consultative approach was used with external agencies and interest groups. All agencies/groups that either may have had information to contribute to the study, or could be affected by study proposals, were contacted.

Organizations were consulted during numerous stages of the study including data collection, development of alternatives, preparation and screening of evaluation criteria, review of the assessment of alternatives and the development of appropriate mitigation plans.

3.5 Public Open Houses

Public Open Houses (POH) were held at key milestones during the course of the study. All POHs were held at the Cornwall Civic Complex.

Announcements were placed in local newspapers prior to the Open Houses. All property owners and businesses within the Study Area were invited to the Open Houses through individual notices.

3.5.1 Public Open House No. 1

Public Open House (POH) No. 1 was held at the Cornwall Civic Complex – McLeod Room on Tuesday, June 19, 2012 between the hours of 4:00 and 7:00 pm.

The Public Open House permitted all members of the public and interest groups to view the presentation material and to discuss the project with City and consultant representatives. The purpose of the first POH was to introduce the study and present the EA process, existing conditions and preliminary alternatives.

In total, fourteen (14) persons registered at the Public Open House. Each person was provided with a comment form and encouraged to submit their written comments in the box provided or by fax/email within the 2-week comment period. In total, two (2) comment sheets /letters/e-mails were returned during the Open House and the subsequent 2-week response period. A summary of the first POH is found in **Appendix A, Public Open House Summary Reports**.

3.5.2 Public Open House No. 2

Public Open House (POH) No. 2 was held at the Cornwall Civic Complex – McLeod Room on Wednesday, October 17, 2012 between the hours of 4:00 and 6:00 pm.

The Public Open House permitted all members of the public and interest groups to view the presentation material and to discuss the project with City and consultant representatives. The purpose of the second POH was to present the evaluation of preliminary design alternatives and the Technically Preferred Alternative for the project.

In total, eleven (11) persons registered at the Public Open House. Each person was provided with a comment form and encouraged to submit their written comments in the box provided or by fax/email within the 2-week comment period. In total, three (3) comment sheets /letters/e-mails were returned during the Open House and the subsequent 2-week response period. A summary of the second POH is found in **Appendix A, Public Open House Summary Reports**.

3.6 Summary of Public Consultation

One of the key objectives of any Environmental Assessment is to provide the public, interested parties and affected agencies with the opportunity for meaningful input. In order to ensure that this objective is met, a public and agency notification program was undertaken for the Cornwall Business Park Transportation Master Plan EA. The program included several communication mechanisms as described in succeeding sections.

3.6.1 Individual Property Owner Contacts

All property owners within the Study Area were included on a study mailing list, as provided by the City, and mailed individual notices inviting them to attend the Public Open Houses that were held during the course of the project. In addition, all members of the public who participated in the study and/or were included on the mailing list received notification of the 30-day public review period of this document.

3.6.2 Newspaper Notices

Notices of the Study Commencement/ Public Open House No. 1 and Public Open House No. 2 were placed in the Cornwall Standard-Freeholder and the Journal de

Cornwall prior to the scheduled dates of the Open Houses. The newspaper notices can be found in **Appendix A, Public Open House Summary Reports**. Advertisements were placed in the aforementioned newspapers on the following dates:

- June 12, 2012 – Study Commencement and Public Open House No. 1 Notice;
- October 10, 2012 –Public Open House Notice No. 2; and
- January 23, 2013 - Notice of Study Completion.

3.6.3 Agency Contacts

In addition, correspondence with the following agencies and interest groups was made to solicit their input in the study:

Public

- Area residents/business owners/property owners

Agencies

- Ministry of the Environment
- Ministry of Culture
- Ministry of Natural Resources
- Department of Fisheries and Oceans Canada
- Ministry of Transportation
- Transport Canada
- Raisin Region Conservation Authority
- St. Lawrence Parks Commission
- Ministry of Health and Long-Term Care
- Health Canada
- Ministry of Economic Development and Trade
- Environment Canada
- St. Lawrence River Restoration Council
- Heritage Cornwall Local Architectural Conservation Advisory Committee
- St. Lawrence River Institute of Environmental Sciences
- Canadian National Railway
- Cornwall Chamber of Commerce
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Attorney General
- United Counties of SD&G
- Township of South Glengarry
- Eastern Ontario Health Unit
- Municipal Environmental Advisory Committee
- Conseil écoles publiques de l'Est de l'Ontario (French)
- Upper Canada District School Board (Public)
- Catholic District School Board of Eastern Ontario (English)
- Conseil scolaire district catholique de l'Est ontarien
- Cornwall Fire Service
- Cornwall Police Service
- Utilities
    - Bell Canada
    - Cornwall Electric
    - Union Gas
    - Trans Canada Pipeline
    - Atria Networks

- Cogeco Cable
- Trans Northern Pipelines
- Cedar Rapids Transmission Company Commission

3.6.4 First Nations Contacts

A notification program was undertaken to contact First Nations Groups and organizations for this study. Letters were sent to the following First Nations groups and organizations at the study commencement, public open house and study completion to solicit their interest or non-interest in the study:

- Indian and Northern Affairs Canada
- Ministry of Aboriginal Affairs
- Mohawk Council of Akwesasne

4.0 EXISTING CONDITIONS

Natural environmental inventories and site assessments/inspections were undertaken between June 2011 to July 2012 to review the present environmental conditions of the Study Area. Consultation with the Ministry of Natural Resources (MNR) and Raisin Region Conservation Authority (RRCA) was undertaken as well. The City of Cornwall also provided information regarding social and cultural environments and land use & property information. The inventory and site assessment provides the background information required for the evaluation of alternatives and the determination of impacts by the proposed modifications. The level of detail accounted for in each assessment reflects the complexity of the site features.

The following sections provide an overview of the information collected and provided to the Study Team throughout the Study Area. The information is divided into the following sections:

- **Section 4.1** Natural Environment Features;
- **Section 4.2** Social and Cultural Environments; and
- **Section 4.3** Land Use and Property.

4.1 Natural Environment Features

The following sub-sections summarize natural environmental features and identify the significant features to be taken into consideration during the assessment of alternatives and requirements for mitigation.

The Natural Environment Memorandums can be found in **Appendix B.**

4.1.1 Terrestrial Environment

4.1.1.1 Summerstown Swamp Wetland

The Summerstown Swamp is a Provincially Significant Wetland (PSW) extending across the northern portion of the Cornwall Business Park Property. The boundaries were established in 1984 during a classification process by the Ontario Ministry of Natural Resources (MNR) (MNR 1984). Precise determination of the PSW boundary is unusually difficult here, however, as the wetland grades into extensive low upland forest on a landscape with low topography and a high water table. The PSW delineation was re-examined in 2003 (Packman and Associates). This investigation reviewed the original MNR boundary limit in considerably more detail than the original investigation and included several changes. The wetland boundary also underwent a revision in 2005 through a City of Cornwall Official Plan Amendment (OPA).

In light of current development activities within the Business Park and the undertaking of this Environmental Assessment, a review of the amended PSW boundaries was undertaken to confirm the refinements suggested in the 2003 analysis and 2005 OPA.

The present review has determined that the Packman and Associates (2003) revision of the Summerstown Swamp boundary is a significantly more accurate and defendable representation of current PSW boundary criteria than the original 1984 MNR classification. Accordingly, with few exceptions, the present review concurs with the Packman & Associates (2003) findings and their proposed revisions of the Summerstown Swamp PSW boundary. The technical memorandum *"Summerstown Swamp (Wetland) Boundary in Cornwall Business Park"* is found in **Appendix B**.

Following this study's wetland boundary review, an investigation of potential ecological constraints on development within the wetland was examined. It was determined that no ecological constraints were identified under the terms of the *2007 Ontario Species At Risk Act (SARO)* since no Endangered or Threatened species are known to utilize areas within the Summerstown Swamp. An Ontario-designated Special Concern species, Golden-winged Warbler, was noted briefly in southeastern portion of the PSW in 2011; it was not noted again and is not believed to have established residency. The common reptile Snapping Turtle (Ontario-designated Special Concern) is known from the larger area and also is expected to occur but Special Concern species are not subject to SARO protective measures.

The *Provincial Policy Statement (PPS)* makes it clear that public utilities such as roadways are exempt from Provincially Significant Wetland (PSW) restrictions although private structures and other landscape alterations within the PSW are largely prohibited. Satisfaction of PPS protective requirements by potential development in the adjacent areas (area extending 120 m out from PSW boundary) will need to focus on protecting that area's surface water enhancement capacity. A vegetated buffer along the margin of the PSW (15 to 30 m wide) would satisfy this requirement. The technical memorandum *"Potential development constraint of Provincially Significant Wetland designation in northwestern section of the Cornwall Business Park"* is found in **Appendix B**.

4.1.1.2 Bobolink

The bobolink is a grassland or field species of bird whose nests are built on the ground. It feeds primarily at ground level on insects, seeds, grains, and spiders. The portion of the Cornwall Business Park under review (north of the Hydro corridor) is unsuitable for Bobolink as it is covered by either scrubby woodland, wooded wetland or sparse meadows. The detailed *"Species At Risk Bobolink in Cornwall Business Park Study Area"* memorandum is found in **Appendix B**.

4.2 Social and Cultural Environments

4.2.1 Stage 1 Archaeological Background Study

A Stage 1 Archaeological Assessment of the study area was conducted in accordance with the *Ontario Heritage Act (2005)* and the Ontario Ministry of Culture's (MCL) draft *Standards and Guidelines for Consultant Archaeologists (2009)*. The Stage 1 archaeological assessment involved a background study to provide detailed documentary research providing a record of the archaeological and land use history and present conditions of the study area. Specifically, the background study provides information about previous archaeological fieldwork around the study area, its geography and history, and current land conditions. A property inspection was also undertaken to document the existing conditions of the study area.

The project site area is comprised of approximately 260 hectares and is located within the southeastern corner of Stormont County, within the City of Cornwall limits. A site visit was conducted on September 28, 2011 in order to document the geography, topography and current conditions of the study area and to determine if the property retained archaeological potential.

The property was also extremely flat and had very poor drainage.

Areas of moderate to high archaeological potential are limited to a few sections around the limits of the project area, although it is probable that the southern sections may also be low-lying and wet. The reason is due to the presence of the Summerstown Swamp which encompasses the majority of the property. Historically this area is characterized by a lack of residential, commercial, industrial, and even agricultural development.

Based on the results of the property inspection, although significant portions of the study area have been previously disturbed or contain physical features with no or low archaeological potential, there are several areas that remain undisturbed and contain moderate to high archaeological potential.

In light of these results, the following recommendations are made:

1. Areas that have been identified as having moderate to high potential are located within treed areas. It is recommended that these areas undergo a Stage 2 test pit survey, where shovel-sized test pits, no smaller than 30 cm in diameter, be excavated into the first 5 cm of subsoil to examine for stratigraphy, cultural features, or evidence of fill at 5 m intervals. Soil should be screened through mesh no greater than 6 mm and all test pits should be backfilled.
2. In areas that have been deemed to have moderate to high potential for the discovery of archaeological remains, but test pitting is deemed to be difficult or impossible because of undisturbed forest floors that exhibit a shallow soil horizon, a surface inspection be

conducted in place of test pitting. Surface inspection should be carried out by clearing at least a 2 m diameter of vegetation using a soft-toothed leaf rake with close hands and knees visual inspections. If archaeological resources are encountered, clear a 10 m square around the positive cleared area. If the positive cleared area continues beyond the 10 m, resume clearing 2 m areas at 5 m intervals, noting where the positive cleared areas end.

Please refer to **Appendix C, Stage 1 Archaeological Background Study.**

4.2.2 Noise

Future sound levels within the Study Area will be a function of the traffic generated by development. As such, the need for noise mitigation for all new development will be the responsibility of the developers of each of these sites. No noise sensitive residential receiver sites were present in the study area.

4.3 Land Use and Property

The Study Area falls within the north portion of the expansion lands of the Cornwall Business Park (north of the Hydro Corridor). Two (2) designations (Zoning By-law) are found in this portion of the Business Park, Environmental Constraint Area and Manufacturing. The Environmental Constraint Area encompasses the Summerstown Swamp Wetland Area. Manufacturing lands are found in the north and northwestern portion of the Business Park. The City of Cornwall recently had the western portion of the Business Park re-zoned from residential to manufacturing. The following major businesses are found to the south and east of the Study Area:

- Supply Chain Management (Wal-Mart Distribution Centre);
- Target Distribution Centre;
- Shoppers Drug Mart Distribution Centre;
- Olymel;
- Gensteel Doors;
- Material Resource Recovery; and
- Boundary Properties (future development site)

The above noted existing conditions are illustrated in **Figure 4-1**, **Existing Business Park Conditions**.

4.4 Phase 1 Environmental Site Assessment (ESA)

Independently from this project, the City of Cornwall has undertaken Phase 1 ESAs for several properties within the expansion lands of the Cornwall Business Park. These Phase 1 ESAs have been undertaken to determine if any private lands the City wish to acquire for development have the potential to be contaminated. The following reports have been undertaken for the City:

- 121-25025-00 - Phase I ESA of 5 Parcels Located Along Highway 401, Cornwall, ON
- 11106040 - Phase I ESA - Malyon Tenth Street, Concession 2, Part Lot 3, Cornwall, ON
- 10106084 - Phase I ESA – 1431 Tenth Street East, Cornwall, ON

OTTAWA

INTERCHANGE 792

TORONTO

TOLLGATE RD E

SERVICE RD

HIGHWAY 401

McCONNELL AV

FUTURE BUSINESS PARK EXPANSION

CITY OF CORNWALL OWNED LAND

MONTREAL

INTERCHANGE 796

SUPPLY CHAIN MANAGEMENT (WALMART DISTRIBUTION CENTRE)

GERALD ST

MORRIS ST

ST ANTOINE ST

PARC ASHWOOD GREENS PARK

CEDAR RAPIDS POWER COMPANY EASEMENT

TARGET DISTRIBUTION CENTRE (UNDER CONSTRUCTION)

SCM WY

CORNWALL INTERLOCKING BRICK

MacEWEN

TRANS-NORTHERN PIPE LINE

FUTURE LOGISTICS DEVELOPMENT SITE

OPTIMUM DR

SHOPPERS DRUG MART DISTRIBUTION CENTRE

FOR SALE 4 ACRES

FUTURE LOGISTICS DEVELOPMENT SITE

BOUNDARY RD

DAPRAT AV

PARC DAPRAT PARK

TWELFTH ST E

MATERIAL RESOURCE RECOVERY

GENSTEEL DOORS

INDUSTRIAL PARK DR

CORNWALL ELECTRIC POWER COMPANY EASEMENT

MIRON AV

GRAND AV

GUY ST

CARLETON ST

ELEVENTH ST E

VIRGINIA DR

BOUNDARY PROPERTIES DEVELOPMENT SITE

TENTH ST E

STORM WATER RETENTION FACILITY

FOR SALE 7 ACRES

OLYMEL

FOR SALE 7 ACRES

LINEAR STORM WATER RETENTION FACILITY

BOUSQUET AV

OLIVER LN

CNR MAIN LINE

CNR TEAM TRACK FACILITY

LAMINACORR

SIGMAPOINT

WESTTURENE

AIR LIQUIDE

LAURIER LAMINATIONS

SPARTECH

XACTICS

JOHNS MANVILLE

NINTH ST E

MARLEAU AV

ALICE ST

GUY ST

CARLETON ST

HALDIMAND CR

IROQUOIS DR

PATRICIA PL

STORMONT DR

LOCHIEL ST

KENYON CR

NICK KANEB DR

GLENVIEW BV

HAMILTON CR

GLEN OAKS CT

LYNN ST

FURNITURE VILLAGE

MULTI DOORS & WINDOWS

EASTERN ONTARIO CATHOLIC DISTRICT SCHOOL BOARD

SIGMAPOINT

OXYGENE REGIONALE

WOLSELEY

FOR SALE 2 ACRES

RAY-JANS

JOHN GORDON CONSTRUCTION

CPH

UNION GAS

MACK DR

VILLENEUVE TANK LINES CTR TRUCKLOAD

DINGWALL LOGISTICS

ULTRAMAR

CORNWALL WAREHOUSING

EWOOD DR

Township of South Stormont

CORNWALL CENTRE RD

SOUTH BRANCH RD

5.0 ANALYSIS AND EVALUATION

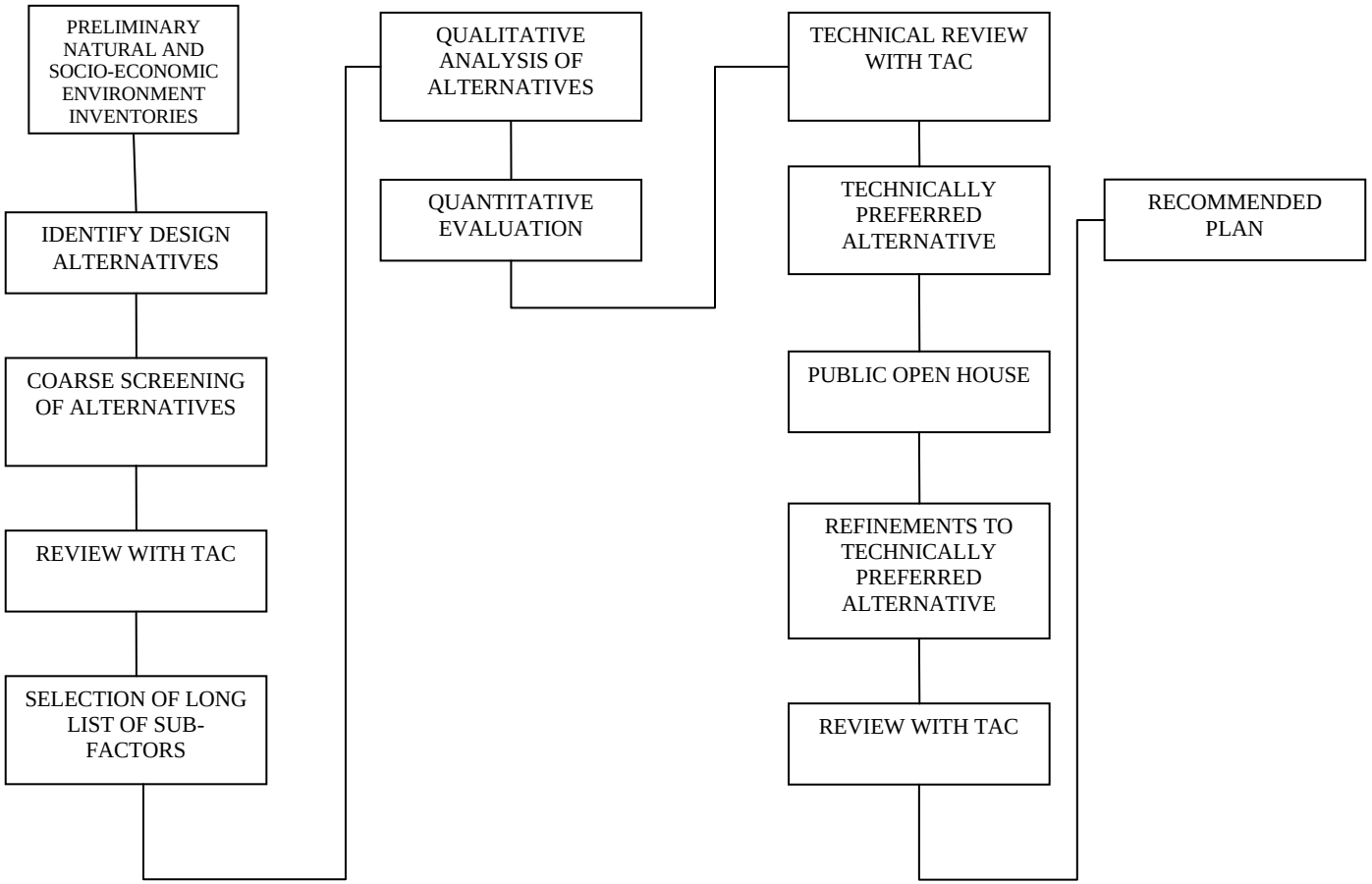
This Chapter describes the approach used to develop, analyze and evaluate roadway alternatives for the Cornwall Business Park Transportation Master Plan EA Study. The information collected and documented is applied not only to the planning and design, but also to the mitigation of impacts associated with construction, operation, and maintenance.

The assessment and evaluation of alternatives must be traceable, defendable and documented.

5.1 Evaluation Process

This study's evaluation process is illustrated in **Figure 5-1, Evaluation Flowchart**. The following sections describe the methodology, analysis and evaluation, and the resulting Technically Preferred Alternative (TPA) and Recommended Plan.

Figure 5-1
Evaluation Flowchart



5.2 Evaluation Methodology

This section documents in detail the formal evaluation approaches used in this study as the primary tool for selecting the Technically Preferred Alternative (TPA) for the project.

5.2.1 Qualitative Assessment

There are numerous methods available for the assessment and evaluation of alternatives, each with a variety of advantages and disadvantages. In situations where there are a limited number of alternatives to be compared or few measurable differences between the alternatives, the qualitative method is an acceptable evaluation approach. The use of simple qualitative and narrative assessments is an accepted methodology for the evaluation of alternatives where there are few alternatives and there is substantial agreement for the study recommendations. In this study, the Technical Advisory Committee (TAC) reviewed the alternatives being evaluated and endorsed when the qualitative approach would be followed.

For the alternatives being compared, a long-list of assessment factors and sub-factors is considered for each set of alternatives. Those factors and sub-factors, which have meaningful differences among the alternatives, are then carried forward for use in the evaluation.

For the qualitative approach, the long list of criteria (including factors and sub-factors) allow for the identification of all benefits and impacts. The alternatives are evaluated by relative comparison to each other, using the rating scale and symbols as illustrated on **Table 5-1.** There is no absolute measure of effect but rather the effects are categorized into one of three levels.

The selection of a preferred alternative is based on a subjective comparison of the alternatives and ranking of options which generally have good performance for most sub-factors where there are differences among alternatives. This also includes a qualitative assessment of any sub-factors which are considered the most important in the decision-making process.

Table 5-1
Qualitative Evaluation Rating Symbols

Relative Rating	Symbol
Good in comparison	✓
Neutral in comparison	–
Poor in comparison	✖

For this study the qualitative evaluation approach was used for the evaluation of planning solutions and the analysis and evaluation of preliminary design alternatives.

5.3 Alternative Planning Solutions - Transportation

The assessment of Planning Solutions is found below. The results of the assessment recommended carrying forward a 'Basket' of Transportation Planning Solutions (or Alternatives to the Project). These recommendations were endorsed by the public at Public Open House. Planning Solutions included:

- ***Do Nothing*** (Maintain current transportation network);
- ***Limit/Defer Growth*** (Defer/limit new development in the northwestern portion of the Cornwall Business Park);
- ***Transportation System Management (TSM) / Transportation Demand Management (TDM)***; and
- ***New and/or Improved Roadway*** - Carried forward as the preferred planning solution.

It was recommended that "***New and/or Improved Roadway***" be carried forward as the preferred transportation strategy to meet travel and safety needs. The preferred Planning Solution (or "Alternative to" the undertaking) will be described as the "Undertaking".

5.4 Preliminary Design Alternatives

The following seven (7) preliminary design alternatives were considered for the study:

- **Alternative 1A –** Roadway link from Tollgate Road southerly to Virginia Drive along the western limits of the Business Park;
- **Alternative 1B –** Roadway link from Tollgate Road southerly to Virginia Drive further east of the western limits of the Business Park;
- **Alternative 2A** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2B –** Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2C** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park;
- **Alternative 2D** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park; and
- **Alternative 3 –** Roadway link from Tollgate Road easterly to SCM Way.

These alternatives are illustrated in **Figure 5-2**.

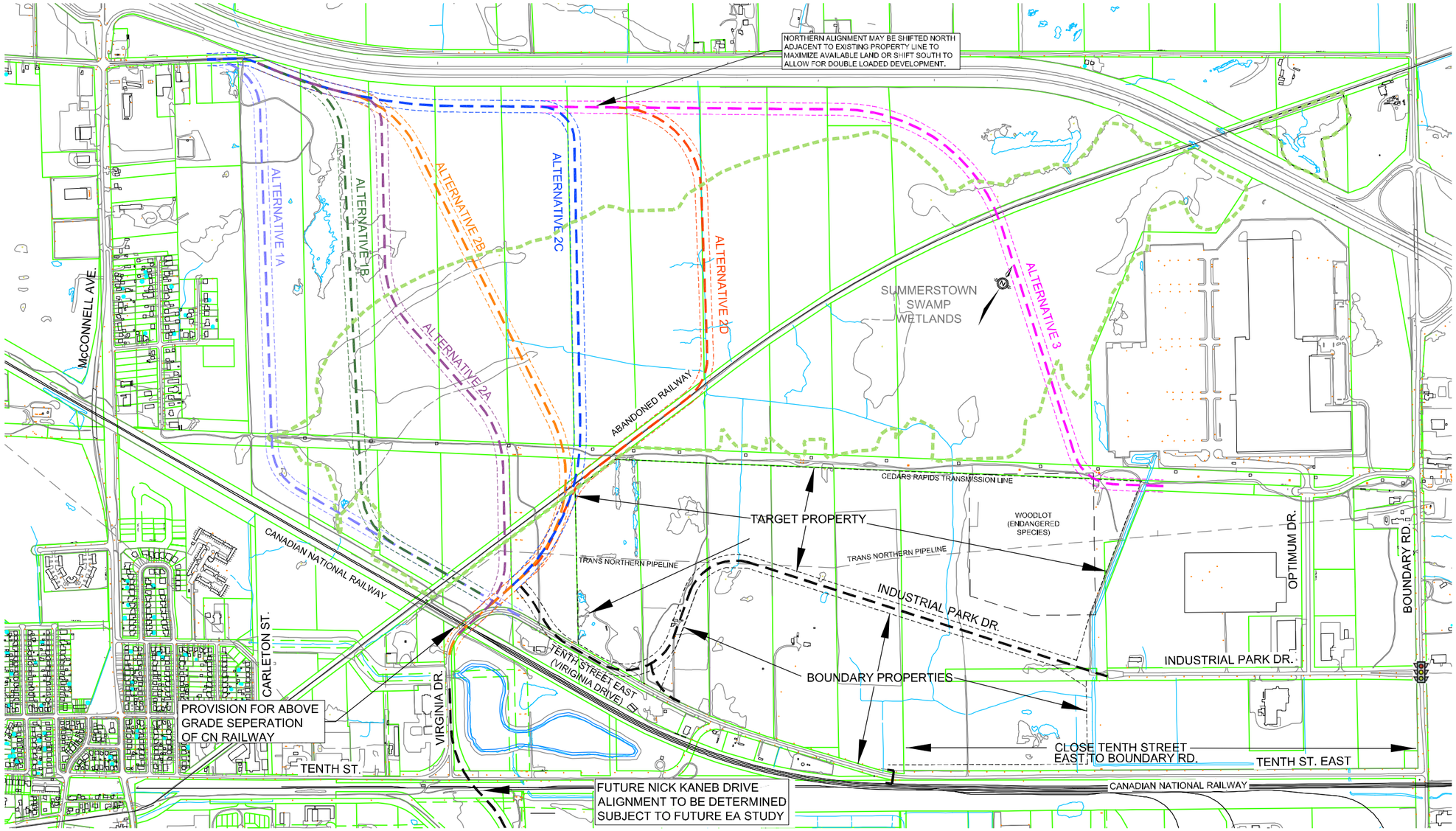


FIGURE 5-2

SCALE: N.T.S.

PRELIMINARY DESIGN ALTERNATIVES

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

Cornwall
ONTARIO CANADA

GENIVAR

5.5 Analysis and Evaluation of Preliminary Design Alternatives

Preliminary Design Alternatives were evaluated utilizing the qualitative approach. **Table 5-2** illustrates the assessment of alternatives for the Cornwall Business Park Transportation Master Plan project.

The following global factors and sub-factors were utilized in the qualitative analysis of alternatives for the Study Area:

- **Transportation**
  - Roadway Connectivity
  - Railway Safety
  - Direct Access from south to McConnell Ave./Highway 401 Interchange
  - Traffic Relief along McConnell Ave. (from Marleau Ave. To Tollgate Rd.)
- **Natural Environment**
  - Impact Summerstown Swamp Wetland
  - Impact to Organic Soils
  - Multiple Crossing through Wetland
- **Land Use and Property**
  - Impact to Residential Community west of Business Park
  - Potential to Maximize Large Developable Lots
  - Conformity to Official Plan
  - Benefit from Potential Change in Land Use Designation
- **Cost**
  - Road Construction Cost
  - Services Costs

5.6 Technically Preferred Alternative

The Technically Preferred Alternative (TPA) for the Cornwall Business Park Transportation Master Plan EA is **Alternative 2A** - Roadway link from Tollgate Road southerly to Virginia Drive within the central area of the Business Park.

The Technically Preferred Alternative (TPA) provides a new roadway linking Industrial Park Drive in the southern portion to Tollgate Road in the northwestern quadrant of the Business Park and includes:

- A new roadway link extending from the recently completed Industrial Park Drive to Tollgate Road in the northwestern quadrant of the Business Park;
- Accommodating development lands in the expansion area of the Cornwall Business Park;
- Providing improved roadway geometry and connectivity to accommodate increased vehicular traffic destined to and from the Cornwall Business Park from the McConnell Avenue Interchange;
- Providing an additional access point to the Cornwall Business Park;
- A provision to provide, in the future, an above grade separation at the CN Railway when traffic warrants are met for safety purposes; and

- Providing a shared corridor for infrastructure services (water, sewer, hydro).

The TPA is shown in **Figure 5-3**.

Table 5-2
Cornwall Business Park Master Plan EA
Analysis and Evaluation of Preliminary Design Alternative

(✓ Good in comparison, - Neutral in comparison, × Poor in comparison)

Criteria	Alternative 1A	Alternative 1B	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 2D	Alternative 3
Transportation							
• Provides connectivity from the Northwest to the Southeast	✓	✓	✓	✓	✓	✓	✓
• Potential for future above grade crossing at CNR crossing	×	×	✓	✓	✓	✓	-
• Provides direct/efficient access from south portion of Business Park to McConnell Ave./Highway 401 Interchange	✓	✓	✓	✓	✓	-	×
• Relief to McConnell Ave. corridor between Marleau Ave. and Tollgate Rd.	✓	✓	✓	✓	✓	-	×
Natural Environment							
• Roadway impact through Summerstown Swamp Wetland boundary	✓ **(0.95 ha)**	× **(2.8 ha)**	× **(2.9 ha)**	× **(2.8 ha)**	× **(2.9 ha)**	× **(3.9 ha)**	× **(2.3 ha)**
• Roadway impact to area of organic soil (Core wetland area)	- **(1.2 ha)**	- **(1.4 ha)**	- **(1.1 ha)**	- **(1.3 ha)**	- **(1.5 ha)**	- **(1.1 ha)**	× **(3.6 ha)**
• Impact to wetland with multiple crossings (i.e. separate roadway and services corridors)	✓	✓	✓	✓	✓	×	×
Land Use & Property							
• Impact to residential community west of Business Park lands	×	-	✓	✓	✓	✓	✓

Table 5-2
Cornwall Business Park Master Plan EA
Analysis and Evaluation of Preliminary Design Alternative

(✓ Good in comparison, - Neutral in comparison, × Poor in comparison)

Criteria	Alternative 1A	Alternative 1B	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 2D	Alternative 3
• Potential to maximize large developable lots within Business Park	-	✓	✓	-	-	×	×
• Conformity to Official Plan (Shared roadway and services corridor)	✓	✓	✓	✓	✓	×	×
• Greatest likelihood to benefit from potential change in land use designation in southwest portion of existing wetland boundary	✓	✓	✓	-	-	-	×
Cost							
• Road Construction Cost	- **($3.9 million)**	- **($4.1 million)**	- **($4.0 million)**	- **($4.1 million)**	× **($4.9 million)**	× **($5.4 million)**	× **($8.0 million)**
• Services Costs (Maintain services in same corridor as roadway)	✓	✓	✓	✓	-	×	×
• **Overall Summary**	× This alternative does not provide the necessary future transportation and roadway safety measures and impacts the adjacent residential community	× This alternative does not provide the necessary future transportation and roadway safety measures	✓ This alternative provides the necessary transportation and roadway safety measures while minimizing social impacts and maximizing development potential. It is recommended as the Technically Preferred Alternative	× This alternative is similar to alternative 2A but does not maximize development potential	× This alternative does not maximize development potential and has a higher cost impact	× This alternative has greater impact on the Provincially Significant Summerstown Swamp Wetland, presents a more circuitous route, does not maximize development potential and has a higher cost impact	× This alternative does not provide the necessary future transportation connectivity measures, has greater impact on organic soils, does not maximize development potential and has a higher cost impact

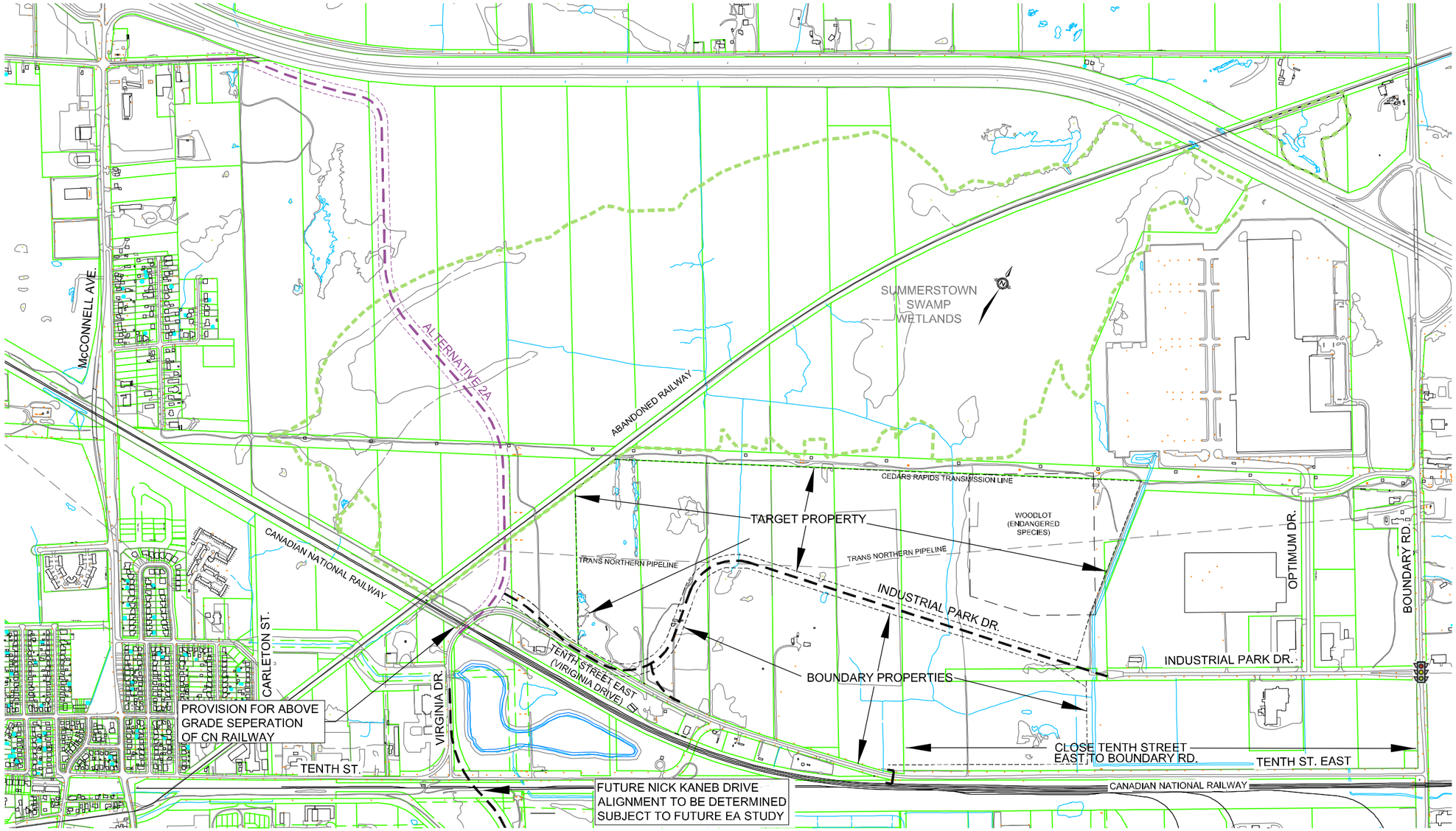


FIGURE 5-3

SCALE: N.T.S.

TECHNICALLY PREFERRED ALTERNATIVE

Cornwall
ONTARIO CANADA

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

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6.0 RECOMMENDED PLAN

The Recommended Plan for the Cornwall Business Park Transportation Master Plan EA was finalized following comments received from the second Public Open House. The Recommended Plan for the roadway improvements is therefore based on both the Technical Advisory Committee's evaluation and public and stakeholder comments.

6.1 Summary of Recommended Transportation Plan

Alternative 2A was selected and endorsed by the Technical Advisory Committee as the long term Recommended Plan.

The Recommended Plan provides the following beneficial elements:

- A new roadway link extending from the recently completed Industrial Park Drive to Tollgate Road in the northwestern quadrant of the Business Park;
- Accommodating development lands in the expansion area of the Cornwall Business Park;
- Providing improved roadway geometry and connectivity to accommodate increased vehicular traffic destined to and from the Cornwall Business Park from the McConnell Avenue Interchange;
- Providing an additional access point to the Cornwall Business Park;
- A provision to provide, in the future, an above grade separation at the CN Railway when traffic warrants are met for safety purposes; and
- Providing a shared corridor for infrastructure services (water, sewer, hydro).

The roadway will be completed with the following characteristics:

- 36 m road allowance;
- 3.5 m vehicles lanes;
- 1.5 m bicycle lanes; and
- 1 m gravel shoulders.

The Recommended Plan is shown in **Figure 6-1**. The Recommended Cross Section is shown in **Figure 6-2**.

The City of Cornwall will consider future development proposals and interests of potential businesses/industries which may develop within the expansion lands of the Business Park. Minor modifications to the future roadway alignment may be implemented to accommodate these future site development plans. Site plan approvals will be required from the City of Cornwall and other outside agencies (MTO, MNR, RRCA) for new developments within the Business Park.

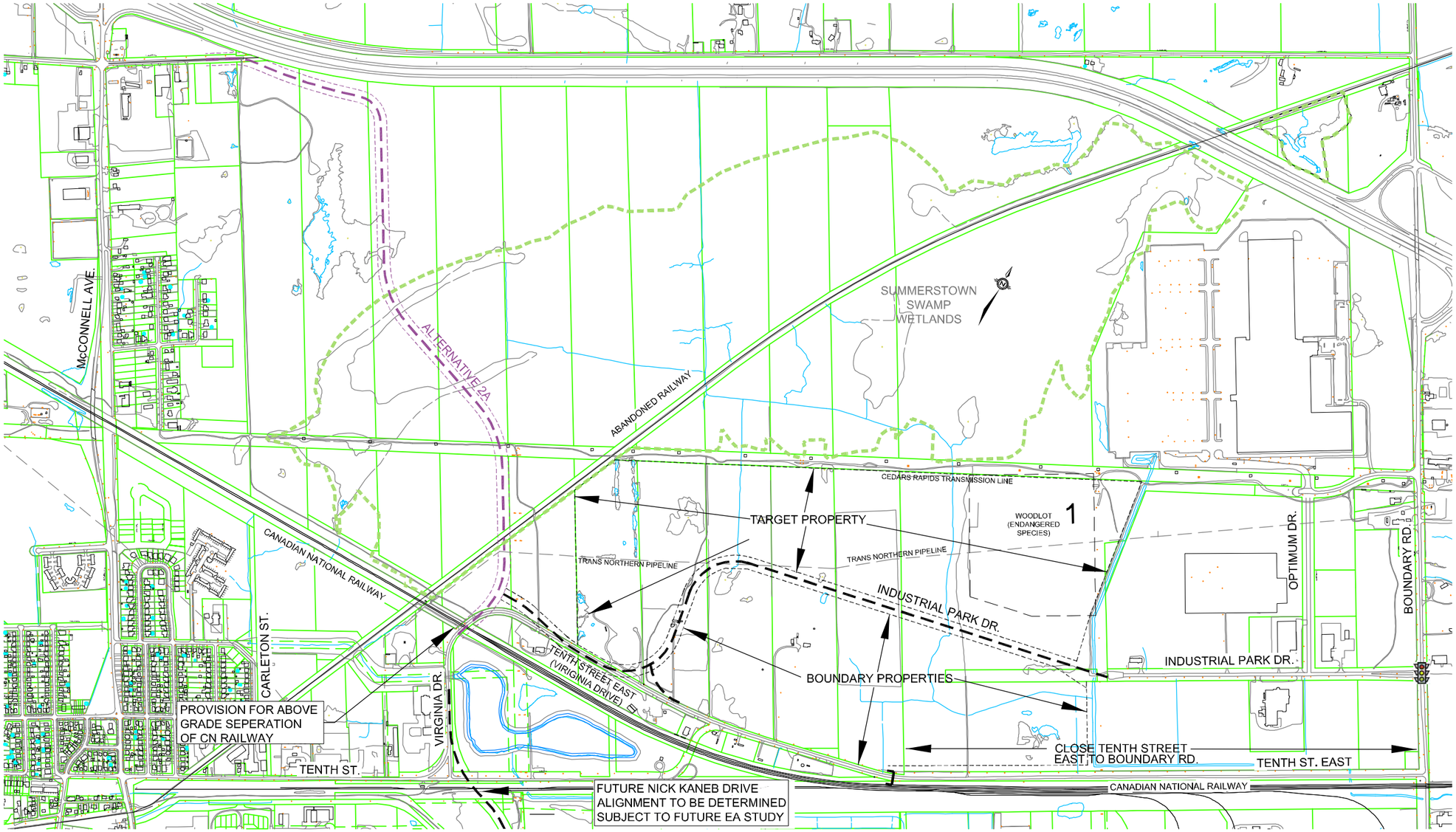

FIGURE 6-1

SCALE: N.T.S.

RECOMMENDED PLAN

Cornwall
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CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

GENIVAR

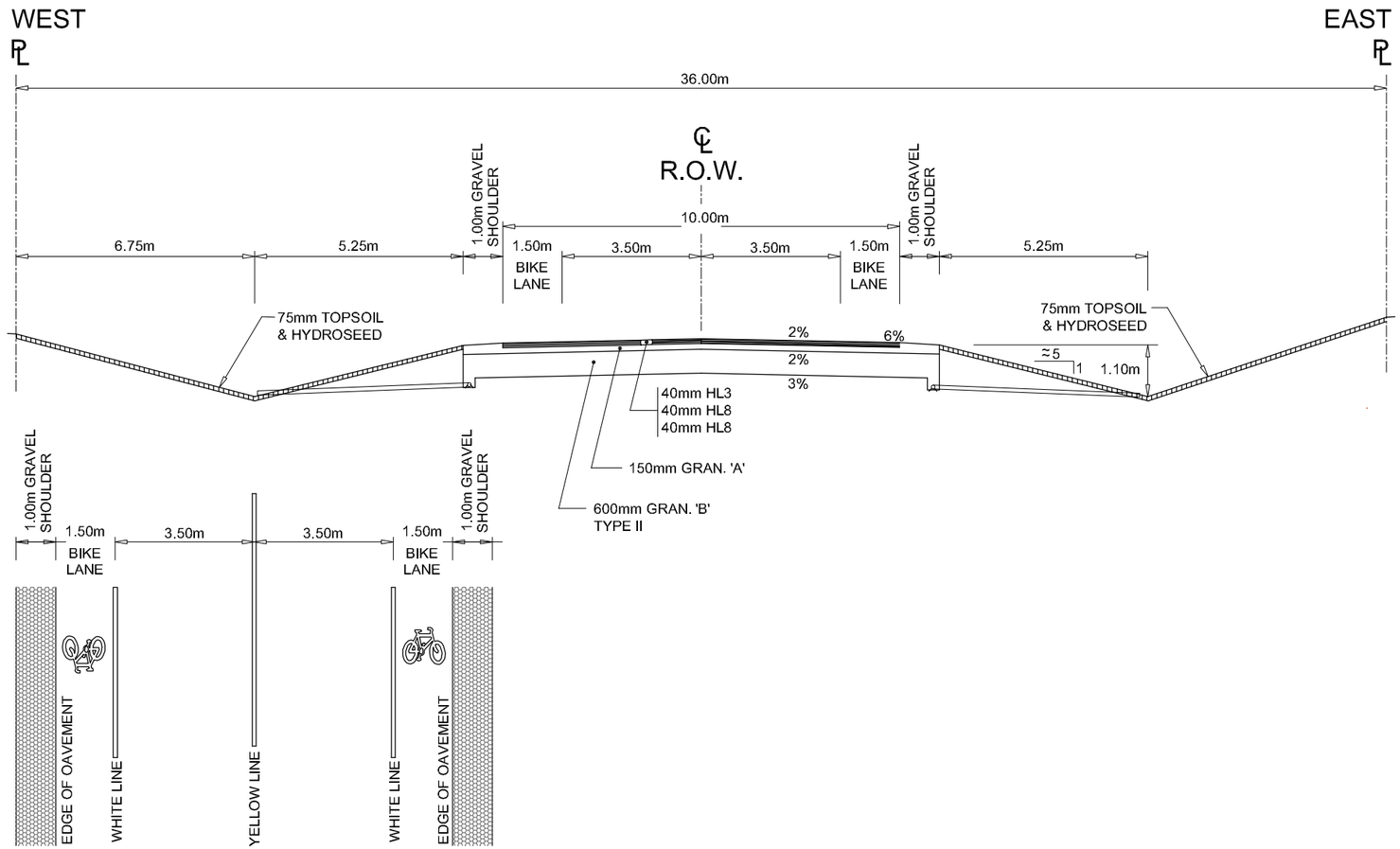


FIGURE 6-2

SCALE: N.T.S.

RECOMMENDED CROSS SECTION

CORNWALL BUSINESS PARK
TRANSPORTATION MASTER PLAN EA

Cornwall ONTARIO CANADA

GENIVAR

7.0 AREAS OF ENVIRONMENTAL SENSITIVITIES AND MITIGATION MEASURES

The remaining areas of concern, related to the Recommended Plan, will be mitigated to minimize or remove any detrimental effects. The following subsections provide a description of areas of mitigation that will be considered during the implementation phase of the project. This includes:

- the natural, social, and cultural environments;
- land use, and property;
- construction material management;
- implementation requirements; and
- municipal services.

In addition, this section will discuss the following:

- estimated construction costs;
- downstream/cumulative impacts;
- summary of remaining areas of concern;
- 30-Day public review; and
- modification process.

7.1 Natural Environment Concerns

Natural environment concerns include surface water, erosion and sediment control, groundwater, and vegetation.

Surface Water

As part of the implementation of the Recommended Plan, roadside ditching will be constructed throughout the length of the new roadway to accommodate storm water run-off. The run-off will be directed to either existing or new stormwater retention ponds within the Business Park.

The effective implementation of erosion and sediment control measures, spill contingencies and the implementation of best management practices during construction will be required.

Erosion and Sediment Control Plan

During the construction phase of the project, interim solutions will be required to deal with surface water run-off and corresponding offshoot effects such as erosion and sedimentation. Solutions could involve a combination of measures including:

- Providing ditching where possible until run-off can be redirected to the permanent ditching;
- Implementing erosion and sediment control measures (i.e. hay bales placed in strategic locations); and
- Pumping excess water run-off from the construction site and/or local detour routes as required and discharging into nearby ditching.

A Plan will be prepared to manage the flow of sediment into storm sewers and surface water. This plan will be based on best control management practices including the

Guideline on Erosion and Sediment Control at Urban Construction Sites. The design elements associated with the plan will be identified in the detail design process and construction specifications. To mitigate any unforeseen areas predisposed to erosion or sedimentation, the contractor will be required to prepare an erosion and sedimentation control plan prior to commencing work on the site. The plan will be prepared to the satisfaction of the City.

Fisheries and Aquatic Habitat

No fisheries and/or aquatic habitat concerns are known or suspected in the study area.

Although no fisheries and/or aquatic habitat concern are known in the study area, an overall preliminary Environmental Protection Plan has been developed in order to identify measures to mitigate the impacts of the roadway improvements. These measures are recommended for implementation to address the anticipated components of related construction activities, which have the potential to negatively affect the natural environment environment and will require management. The following major components of a future environmental protection plan are presented:

- The establishment of erosion/sediment controls will be necessary at construction sites to enclose utility excavations and exposed ground for roadway construction to prevent migration of sediments towards the Summerstown Swamp Wetland. Erosion control fencing should be placed around all ongoing construction activity areas as well as at adjacent locations where supplies or excavated materials and imported fills may be temporarily stored. Fencing is to be checked routinely for effectiveness and regularly cleared of silt accumulation to ensure the integrity of erosion prevention/sediment containment measures. Areas of exposed soil, especially newly graded areas that cannot be immediately stabilized with the final surface treatments are to be treated with straw mulch, erosion blanket, sod, or hydroseed, depending on the specific circumstances.

- The possibility of dewatering for utilities placement has the potential to introduce sediments to the local watercourses. Methods must be identified for isolating construction activities from aquatic habitats and suitable methods must be developed for reintroduction of dewatering effluent to the watercourse without impact. Where it becomes necessary to dewater excavation areas, effluent should be directed over grassed areas. Filter bags may necessarily be attached to pump outlets, which must be located no closer than 30 m from any water body. Settling ponds, swales and check dams and/or any other measures must be incorporated as

necessary to prevent sedimentation of the adjacent watercourses. A Permit to Take Water (PTTW) may be required from the Ministry of the Environment.

- Any removal of trees and shrubs must be minimized given the limited vegetation cover. Approved vegetation clearing should only be undertaken before the onset of the avian breeding season, as per the federal *Migratory Birds Act*. Tree cutting should only be permitted after August 1 and before May 1 to prevent destruction of migratory bird nests. Upon the completion of construction, disturbed areas should be replanted with site-appropriate indigenous trees and shrubs. Snow fencing must be utilized to protect any existing vegetation and to delineate areas not to be disturbed by construction activities.

- Operating, refuelling and maintenance of construction equipment and the handling and storage of toxic materials (e.g. fuel, lubricants, form oils, paints, wood preservatives, and other chemicals) must be carried out in such a way as to avoid contamination of soils, groundwater and surface waters. Temporary materials and equipment storage locations must be approved. Measures must be in place to reduce the risk of spills and to minimize impacts of accidental spills during construction, including a contingency plan ready for immediate implementation that includes immediate reporting of incidents to MOE's Spills Action Centre. In addition, there must be adequate measures to prevent or capture and contain any debris and spills resulting from construction activities. All such measures and procedures will conform to pertinent provincial requirements.

- The implementation of stormwater quality best management practices is recommended to accommodate new pavement surface areas. As well, opportunities to retrofit existing roadway surfaces and direct runoff to new stormwater quality treatment facilities should be pursued to aid in the surface water quality improvement effort.

Groundwater

The study area, once development is planned to begin, will be serviced by the municipal water supply. Where required, construction activities will incorporate measures to mitigate impacts to the groundwater.

Natural Environment

Impact mitigation will focus on minimizing or avoiding impacts within the Summerstown Swamp Wetland. The overall impact of development along the roadway corridor, however, is expected to have a minor net impact on natural environment features and functions. There are no Species At Risk constraints presently active within the study area. Through discussions with the MNR and RRCA,

several potential opportunities to mitigate and enhance the ecological function of the wetland will be developed. These opportunities include:

- Minimizing the Right-of-Way of the new roadway through the Summerstown Swamp Wetland area to reduce natural environment impacts;
- Utilizing open footed concrete culverts to provide natural passageways for animals/reptiles; and
- Creating open marsh ponds within the wetland to create habitat.

7.2 Social and Cultural Environment Concerns

Archaeological and Heritage

The Recommended Plan will impact several areas with moderate to high archaeological potential; therefore, a Stage 2 Archaeological Assessment is required as part of the detail design phase of the project.

The following tasks are recommended as part of the Stage 2 Archaeological Assessment:

- Areas that have been identified as having moderate to high potential are located within treed areas. It is recommended that these areas undergo a Stage 2 Archaeological Assessment test pit survey, where shovel-sized test pits, no smaller than 30 cm in diameter, be excavated into the first 5 cm of subsoil to examine for stratigraphy, cultural features, or evidence of fill at 5 m intervals. Soil should be screened through mesh no greater than 6 mm and all test pits should be backfilled.
- In areas that have been deemed to have moderate to high potential for the discovery of archaeological remains, but test pitting is deemed to be difficult or impossible because of undisturbed forest floors that exhibit a shallow soil horizon, a surface inspection be conducted in place of test pitting. Surface inspection should be carried out by clearing at least a 2 m diameter of vegetation using a soft-toothed leaf rake with close hands and knees visual inspections. If archaeological resources are encountered, clear a 10 m square around the positive cleared area. If the positive cleared area continues beyond the 10 m, resume clearing 2 m areas at 5 m intervals, noting where the positive cleared areas end.

In the unlikely event that deeply buried archaeological deposits are discovered in the course of construction, any construction work will immediately cease and the Cultural Programs Branch, Ontario Ministry of Culture, should be contacted immediately at (416) 314-7123. In the event that human remains are encountered, the proponent should immediately cease all construction work and contact the Cultural Programs Branch, Ontario Ministry of Culture, and the Registrar of Cemeteries Regulation Section of the Ontario Ministry of Consumer Business Services at (416) 326-8404.

Traffic Impacts

With new development within the expansion lands of the Business Park and the introduction of a new roadway (via Tollgate Road), it is probable that there would be an increase in traffic volumes along Tollgate Road and McConnell Avenue at the Highway 401 interchange. Any new development site within the northwest portion of the Business Park or commencement of the design of the Tollgate Road easterly extension will trigger the requirement for a traffic impact study to determine the potential impact to the existing Cornwall and MTO (*As long as the proposed development falls under MTO's jurisdiction or area of influence as stipulated by the Public Transportation and Highway Improvement Act and any other pertinent legislation*) transportation networks as part of their site plan approval or roadway design development. The traffic impact study(s) will require approval from both the City of Cornwall and the MTO for site plan and/or roadway design approval, and as such, these two jurisdictions will stipulate the intersections to be included in the traffic impact study.

7.3 Land Use and Property

The Recommended Plan requires property acquisition from two (2) property owners. Financial compensation will be provided for the purchase of lands required. Permission to access adjacent properties will be acquired by the contractor prior to construction.

The new roadway extension can be implemented without requiring any roadway closures.

7.4 Preliminary Mitigation Summary

Table 7-1 summarizes the potential environmental impacts and proposed mitigation for the project.

Table 7-1
Preliminary Mitigation Summary

Potential Environmental Impact	Concerned Agency/ Stakeholder	Mitigation
Surface Water/Stormwater Runoff		• Stormwater will be directed to roadside ditching and stormwater management facilities
Erosion and Sediment Control	MOE	• Providing ditching where possible until run-off can be redirected to the permanent ditching • Implementing erosion and sediment control measures (i.e. hay bales placed in strategic locations) • Pumping excess water run-off from the construction site and/or local detour routes as required and discharging into nearby ditching • Erosion and Sediment Control Plan will be based on best control management practices including the *Guideline on Erosion and Sediment Control at Urban Construction Sites*. The design elements associated with the plan will be identified in the detail design process and construction specifications • To mitigate any unforeseen areas predisposed to erosion or sedimentation, the contractor will be required to prepare an erosion and sedimentation control plan prior to commencing work on the site. The plan will be prepared to the satisfaction of the City.
Natural Environment	MNR, RRCA	• Environmental Protection Plan that

Table 7-1
Preliminary Mitigation Summary

Potential Environmental Impact	Concerned Agency/ Stakeholder	Mitigation
		will be responsible for implementing measures during construction that prevent any sediments/petroleum products from entering watercourses (i.e. using silt fencing, check dams and debris capture devices) • Adjacent to all watercourses, storage of materials and refuelling of equipment will be prohibited. • Implement Risk Management Plan to reduce potential negative effects • Implement erosion and sediment controls to minimize downstream affects • Other measures include vegetation control, site grading, spill control, dewatering activities, and site restoration Through discussions with the MNR and RRCA, several potential opportunities to mitigate and enhance the ecological function of the wetland will be developed. These opportunities include: • Minimizing the Right-of-Way of the new roadway through the Summerstown Swamp Wetland area to reduce natural environment impacts • Utilizing open footed concrete culverts to provide natural passageways for animals/reptiles • Creating open marsh ponds within the wetland to create habitat

Table 7-1
Preliminary Mitigation Summary

Potential Environmental Impact	Concerned Agency/ Stakeholder	Mitigation
Impact to Potential Archaeological Lands	Ministry of Culture	• Areas that have been identified as having moderate to high potential are located within treed areas. It is recommended that these areas undergo a Stage 2 Archaeological Assessment test pit survey, where shovel-sized test pits, no smaller than 30 cm in diameter, be excavated into the first 5 cm of subsoil to examine for stratigraphy, cultural features, or evidence of fill at 5 m intervals. Soil should be screened through mesh no greater than 6 mm and all test pits should be backfilled. • In areas that have been deemed to have moderate to high potential for the discovery of archaeological remains, but test pitting is deemed to be difficult or impossible because of undisturbed forest floors that exhibit a shallow soil horizon, a surface inspection be conducted in place of test pitting. Surface inspection should be carried out by clearing at least a 2 m diameter of vegetation using a soft-toothed leaf rake with close hands and knees visual inspections. If archaeological resources are encountered, clear a 10 m square around the positive cleared area. If the positive cleared area continues beyond the 10 m, resume clearing 2 m areas at 5 m intervals, noting where the positive cleared areas end. • In the unlikely event that deeply

Table 7-1
Preliminary Mitigation Summary

Potential Environmental Impact	Concerned Agency/ Stakeholder	Mitigation
		buried archaeological deposits are discovered in the course of construction, any construction work will immediately cease and the Cultural Programs Branch, Ontario Ministry of Culture, should be contacted immediately at (416) 314-7123. In the event that human remains are encountered, the proponent should immediately cease all construction work and contact the Cultural Programs Branch, Ontario Ministry of Culture, and the Registrar of Cemeteries Regulation Section of the Ontario Ministry of Consumer Business Services at (416) 326-8404.
Noise Impacts	Public	• Noise restrictions during construction
Traffic Impact to Existing Transportation Network	City of Cornwall, MTO	• With new development within the expansion lands of the Business Park and the introduction of a new roadway (via Tollgate Road), it is probable that there would be an increase in traffic volumes along Tollgate Road and McConnell Avenue at the Highway 401 interchange. • Any new development site within the northwest portion of the Business Park or commencement of the design of the Tollgate Road easterly extension will trigger the requirement for a traffic impact study to determine the potential impact to the existing Cornwall and MTO (*As*

Table 7-1
Preliminary Mitigation Summary

Potential Environmental Impact	Concerned Agency/ Stakeholder	Mitigation
		long as the proposed development falls under MTO's jurisdiction or area of influence as stipulated by the Public Transportation and Highway Improvement Act and any other pertinent legislation) transportation networks as part of their site plan approval or roadway design development. • The traffic impact study(s) will require approval from both the City of Cornwall and the MTO for site plan and/or roadway design approval, and as such, these two jurisdictions will stipulate the intersections to be included in the traffic impact study.
Utility Impacts	Cedars Rapids Transmission (CRT)	• Liaise with CRT during detail design to ensure roadway clearance from transmission lines
Property Access to adjacent properties	Property Owners	• If required, contractor will acquire permission to enter adjacent properties prior to construction
Property Acquisition	Property Owners	• Financial Compensation

7.5 Construction and Material Management Plans

Several construction management plans will also be developed to account for temporary impacts to adjacent residents due to construction activities. This includes noise, dust and vehicular delay impacts.

Shoring Plan

The contractor will be responsible for selecting and designing the excavation and support methods required throughout the contract. The procedures shall be submitted to the City to ensure safe installation of services.

Dewatering Plan

The contractor will be responsible for submitting to the City its method(s) on how to handle groundwater during service installations to ensure safe installation of services. Should dewatering involve storage or diversion of water in excess of 50,000 litres per day, a Permit to Take Water will be required.

Pre-Construction Inspection

The contractor will be responsible for completing a pre-construction inspection of buildings, and structures within and around the vicinity of the work area for both the interior and exterior conditions. This inspection will ensure that the state of a building and/or structure is satisfactorily documented prior to construction to resolve possible claims by residents or building owners during and after construction.

Vibration Monitoring Plan

The contractor will be responsible for completing an initial vibration analysis based on existing conditions. During the course of construction, the contractor shall complete vibration monitoring in order to control the amount and effects of vibration from construction operations.

Construction Waste Management Plan

General management and disposal of construction waste and debris by the contractor will be similar to the guidelines and practices of the Ontario Provincial Standard Specifications (OPSS) 180 and shall conform to *Ontario's Environmental Protection Act* and associated regulations (notably Regulation 347) and if applicable, to the *Ontario Dangerous Goods Transportation Act* and the *Canadian Transportation of Dangerous Goods Act*.

Environmental Protection Plan

It will be the responsibility of the contractor to ensure that no contamination, waste or other substances, which may be detrimental to the environment, will enter the environment as either a direct or indirect result of construction. In this regard, any floating debris resulting from construction which accumulates in drainage ditches and/or creeks is to be immediately cleaned up and disposed of. Any spills or contamination, waste or other substances which may be detrimental to aquatic life or water quality will also be immediately cleaned up.

The contractor will be responsible for implementing measures during construction that prevent any sediments / petroleum products from entering the watercourse (i.e. using silt fencing, check dams and debris capture devices). Adjacent to all watercourses, storage of materials and refuelling of equipment will be prohibited.

Emergency Response Plan

The preparation of an Emergency Response Plan by the contractor shall allow for full emergency services access during the construction period, such that access is maintained to all residential properties and other land uses in the event of an emergency. Additionally, the emergency response plan should include provisions for providing temporary services to end users in the event of a construction-related service outage or other service disruption. A Spills Response and Reporting Plan will be prepared and adhered to by the contractor.

Management of Contaminated Materials

The MOE and Construction Manager should be notified immediately upon discovery of any contaminated material encountered within the construction area. If contaminated materials or contaminated groundwater are encountered within the construction limits, these are to be removed and disposed of in accordance with all applicable Acts and Regulations. Recommendations regarding material, handling, storage and remediation/disposal will be incorporated and monitored during construction.

Traffic Control Plan

The contractor will be responsible for developing a plan which outlines procedures for controlling vehicular and pedestrian traffic movements. The plan may include items such as staging sequences, work, public, and emergency vehicle access and egress, public access and separation from hazardous areas, temporary barriers, removal of old pavement marking, and traffic control layouts and devices. This plan shall be submitted to the City for approval.

7.6 Municipal Services

Municipal services, including future watermains, storm sewers, hydro and sanitary sewers will be constructed within the road allowance as part of the construction of the roadway.

7.7 Estimated Construction Costs and Implementation

The preliminary cost estimate to complete the construction of the Recommended Plan is approximately $4 million. The estimated costs do not include traffic signals, or municipal services such as watermains and sanitary sewers. Implementation of the roadway would only take place as development lands and services are required within the expansion lands of the Cornwall Business Park.

7.8 Council Approval

The City of Cornwall Council endorsed the Recommended Plan on November 26, 2012. Refer to **Appendix D, Council Resolution.**

7.9 Summary of Remaining Areas of Concern

Remaining areas of concern which will require more in-depth review at the detail design stage of the project include:

- Carry out detailed engineering survey

7.10 30-Day Public Review

A 30-day public review of this ESR began on January 23, 2013 following Council approval. During this period, there will be an opportunity for an individual to request a *Part II Order* which is a request for the project to be "bumped-up" to an Individual Environmental Assessment.

7.11 Modification Process

Should there be a need in the future to make a change to the Recommended Plan once the EA process has been completed and prior to construction, it will be necessary to determine whether a minor or major change is required. A major change would require an amendment to this EA (as prescribed in the Municipal Class EA, 2007), whereas a minor change would not.

A major change would be defined as a significant shift of roadway alignment (i.e. 10 m or greater horizontal shift or 1 m or greater vertical change) for the Recommended Plan that would generate impacts not accounted for in the original EA. An addendum to this EA would need to be completed to document the change and allow for public and agency review of the proposed change.

A minor change may be defined as a design change in lane and shoulder widths, intersection improvements, minor horizontal or vertical alignment refinement and/or underground infrastructure. Minor changes would be dealt with during the detail design phase and would not require public consultation.

8.0 CONCLUSIONS

The findings of this report were based on the application of the Environmental Assessment (EA) process, as outlined in the Class Environmental Assessment (EA) for Municipal Roads. The principles and methodology of the EA process assisted the Technical Advisory Committee in the analysis and evaluation of alternatives and the selection of the Recommended Plan. The participating public and government agencies have directly and indirectly endorsed these findings through their active participation throughout the course of the study.

This Environmental Study Report (ESR) will be filed with the City Clerk and be available for review at the City's engineering department, local library and City Hall. If public concerns regarding this project cannot be resolved, any person may request that the Minister of Environment requires the proponent to comply with Part II of the EA Act (which addresses individual EA's). If no concerns are expressed within 30 days of filing this document and notification thereof, the project can proceed in accordance with the recommendations of the ESR.

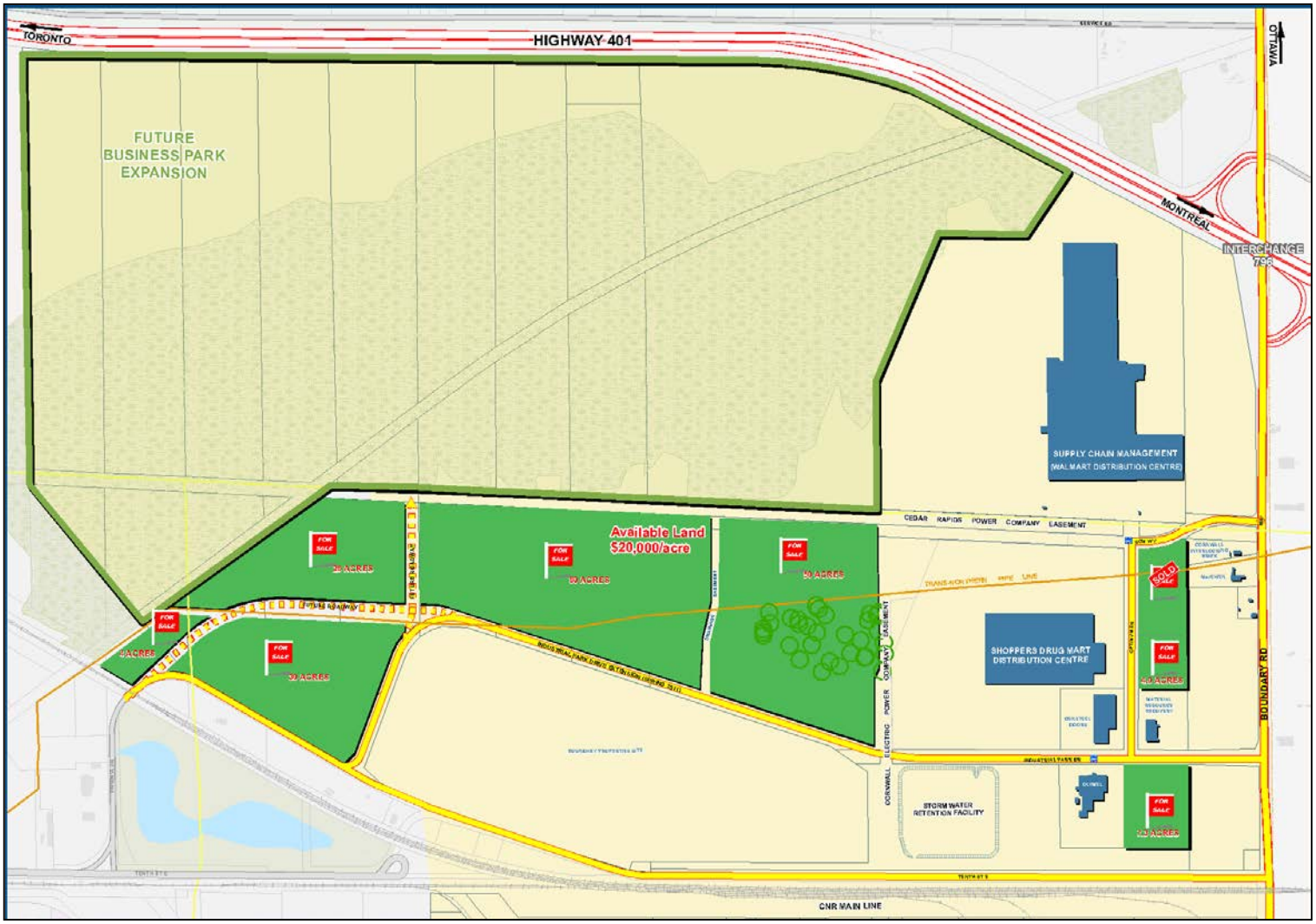
Specifically, the approval of the ESR will enable the City of Cornwall to carry out detail design followed by construction.

Appendix A

Public Open House Summary Reports

Prepared for:
City of Cornwall

Public Open House No. 1
Summary Report



Municipal Class Environmental Assessment for the Cornwall Business Park Master Plan

GENIVAR File No. 111-15011

GENIVAR

July 2012

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Appendices

1.0 INTRODUCTION

This report, prepared by GENIVAR, documents the first Public Open House (POH) meeting held as part of the Municipal Class Environmental Assessment (EA) process to examine roadway alternatives within the Cornwall Business Park expansion area. This meeting is one element of an open and consultative process with the public for this project.

This study is being undertaken by the City of Cornwall; the purpose of which is to:

- Prepare an EA and a secondary transportation plan following an integrated process meeting the Planning Act requirements to serve the Cornwall Business Park Master Plan; and
- Obtain environmental clearance for the future construction and operation of the roadway.

1.1 Study Area

The study area is shown in **Figure 1**.

1.2 Public Open House No. 1 Date and Location

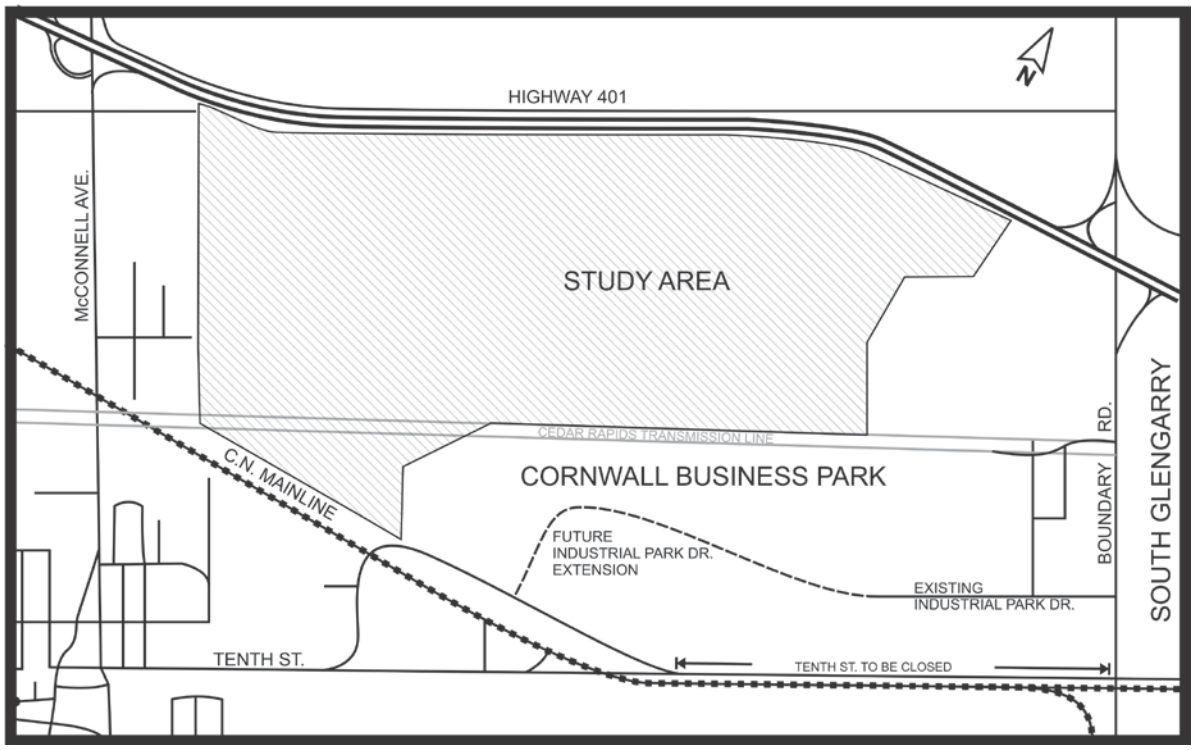
The Public Open House was held:

Tuesday, June 19, 2012
Cornwall Civic Complex
McLeod Room
100 Water Street
Cornwall, ON
4:00 to 7:00 pm

The purpose of the first Public Open House was to present the following:

- The integrated planning process;
- Existing environmental conditions;
- Preliminary design alternatives; and
- Obtain public comments.

Figure 1
Study Area



2.0 PUBLIC AND AGENCY CONSULTATION

One of the key aspects of the project is to provide the public, interested parties and affected agencies with the opportunity for meaningful input. In order to ensure this objective is met, a public and agency notification program was undertaken.

The program included a number of communication mechanisms, discussed below.

2.1 Individual Contact Notification

Notification of Public Open House No. 1 was communicated to all affected residents, external agencies and interested groups.

Individual notices were mailed to property owners within and adjacent to the Study Area. A database of property owner names was provided by the City of Cornwall.

A sample of the notice is provided in **Appendix A**.

2.2 Newspaper Notice

A newspaper notice for Public Open House No. 1 was placed in the following local newspapers prior to the event:

- Cornwall Standard Freeholder: Tuesday, June 12th, 2012; and
- Le Journal de Cornwall: Tuesday, June 12th, 2012.

The newspaper notices are found in **Appendix A**.

2.3 City of Cornwall Website

Notification and information regarding Public Open House No. 1 was also provided on the City of Cornwall's website at www.cornwall.ca

2.4 Agency Contacts

Agency contact letters were sent to the following external agencies and interest groups:

- Ministry of the Environment
- Ministry of Culture
- Ministry of Natural Resources
- Department of Fisheries and Oceans Canada
- Transport Canada
- Raisin Region Conservation Authority
- St. Lawrence Parks Commission
- Ministry of Health and Long-Term Care
- Health Canada
- Ministry of Economic Development and Trade
- Environment Canada
- St. Lawrence River Restoration Council
- Heritage Cornwall Local Architectural Conservation Advisory Committee
- St. Lawrence River Institute of Environmental Sciences
- Canadian National Railway
- Cornwall Chamber of Commerce
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Attorney General
- United Counties of SD&G
- Township of South Glengarry

- Eastern Ontario Health Unit;
- Cornwall Transit;
- Municipal Environmental Advisory Committee;
- Conseil écoles publiques de l'Est de l'Ontario (French)
- Upper Canada District School Board (Public)
- Catholic District School Board of Eastern Ontario (English)
- Conseil des Ecoles District Catholique de Langue Français
- Cornwall Fire Service
- Cornwall Police Service
- Bell Canada
- Cornwall Electric
- Union Gas
- Atria Networks
- Cogeco Cable
- Trans Northern Pipelines
- Cedar Rapids Transmission Company Commission

2.5 First Nations Contacts

Contact letters were sent to the following First Nations groups and agencies:

- Indian and Northern Affairs Canada
- Ministry of Aboriginal Affairs
- Mohawk Council of Akwesasne

3.0 PUBLIC OPEN HOUSE NO. 1

Public Open House (POH) No. 1 was held at the Cornwall Civic Complex – McLeod Room on Tuesday, June 19th, 2012 between the hours of 4:00 and 7:00 pm.

The Public Open House permitted all members of the public and interest groups to view the presentation material and to discuss the project with City and consultant representatives. The POH presentation boards are provided in **Appendix B**.

In total, fourteen (14) persons registered at the Public Open House. Each person was provided with a comment form and encouraged to submit their written comments in the box provided or by fax/email within the 2-week comment period. In total, two (2) comment sheets /letters/e-mails were returned during the Open House and the subsequent 2-week response period. Copies of the completed comment forms are provided in **Appendix C**. A summary of the comments/issues provided is outlined in **Chapter 4.0**.

4.0 SUMMARY OF WRITTEN COMMENTS

The written comments/concerns received at the Public Open House are summarized below in **Table 1.**

Table 1
Summary of POH Written Comments

Area of Concern	Number Of Respondents	Comment Sheet Reference No.
Issue/Concern from a utility company regarding the location of their transmission towers	1	1
Information Request	1	2

5.0 CONCLUSIONS

General support for examining roadway alternatives within the expansion area of the Cornwall Business Park was received from the public at the Open House.

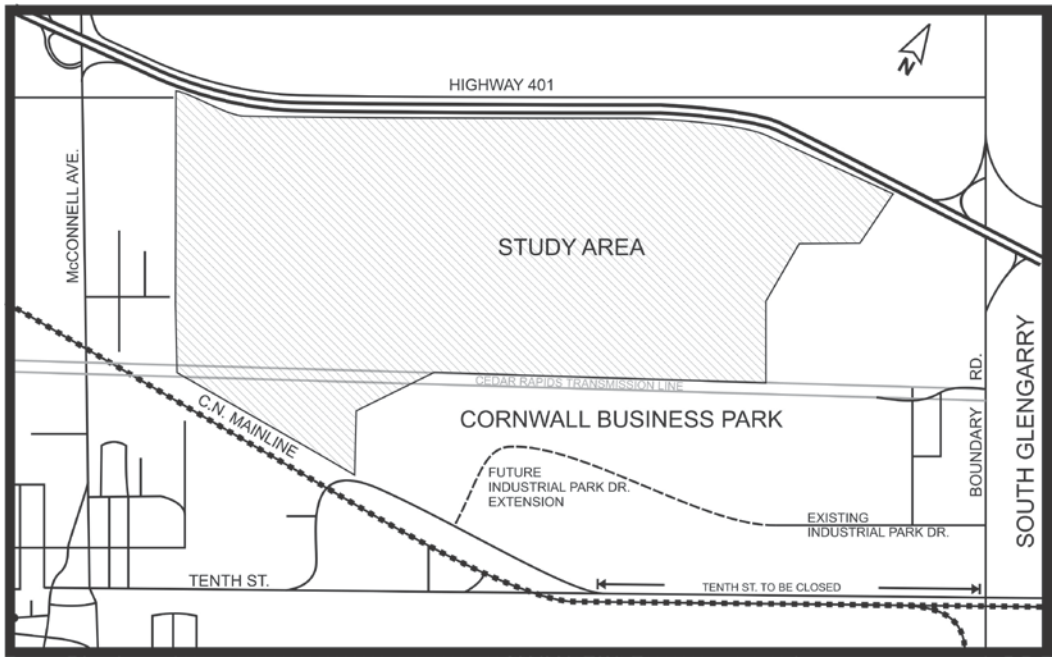
APPENDICES

Appendix A
Contact and Newspaper Notice

Study Commencement – Public Open House No. 1 Notice

Municipal Class Environmental Assessment
for the Cornwall Business Park Master Plan

The City of Cornwall has initiated a Municipal Class Environmental Assessment (EA) for the Cornwall Business Park Master Plan. This study will follow an integrated planning process (Municipal Class Environmental Assessment process integrated with the Planning Act) which will provide an updated Secondary Transportation Plan for the Cornwall Business Park Master Plan. The integrated planning process is included in Section A.2.9 of the Municipal Class EA. A Schedule "C" planning process under the Municipal Class Environmental Assessment will be followed. This study will examine the future expansion land within the Cornwall Business Park. The study area is shown below.



The objectives of this study include the following:

- Preparation of an EA and a secondary transportation plan following an integrated process meeting the Planning Act requirements to serve the Cornwall Business Park Master Plan; and
- Obtain environmental clearance for the future construction and operation of the roadway.

A Public Open House (POH) meeting has been scheduled and will be held as follows:

Tuesday, June 19th, 2012
Cornwall Civic Complex
McLeod Room (2nd Floor)
100 Water Street
Cornwall, ON
4:00 to 7:00 pm

For more information please contact:

Mark Boileau
Economic Development Manager
City of Cornwall
Cornwall Economic Development
100 Water Street, Suite 104
Cornwall ON K6H 6G4
Tel: (613) 933-0074
Fax: (613) 933-0745
mboileau@cornwall.ca

Pascal Pitre, P. Eng., M.Pl.
Project Manager
GENIVAR
15 Fitzgerald Road
Ottawa, ON K2G 9G1
Tel: (613) 829-2800
Toll Free: 1-866-537-5289
Fax: (613) 829-8299
pascal.pitre@genivar.com

We are interested in hearing comments from individuals, groups, and the general public. Comments and information regarding this study are being collected to assist the City of Cornwall in meeting the requirements of the Environmental Assessment Act. This information will be maintained on file for use during the study, and may be included, with the exception of personal information, in the study documentation. Any persons interested in being included on the study mailing list or obtaining information regarding the project should contact the consultant project manager.

Appendix B
POH No. 1 Presentation Boards

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Welcome

Welcome to the first Public Open House for the Municipal Class Environmental Assessment (EA) for the Cornwall Business Park.

Please feel free to view the presentation material and the background reports at the Resource Table. Should you have any questions regarding the material, or any other aspect of the study, please speak to any of the City or Consultant study team members in attendance.

We encourage you to provide your comments in writing. Comment sheets are available at the registration desk. Please deposit completed forms in the comment box or mail/ fax/ e-mail to the address at the bottom of the form. We also encourage you to record your attendance at the registration desk.

There is an opportunity at any time during the EA process for interested persons to provide comments. Any comments received pertaining to the study will be collected under the Environmental Assessment Act and, with the exception of personal information, will become part of the public record.

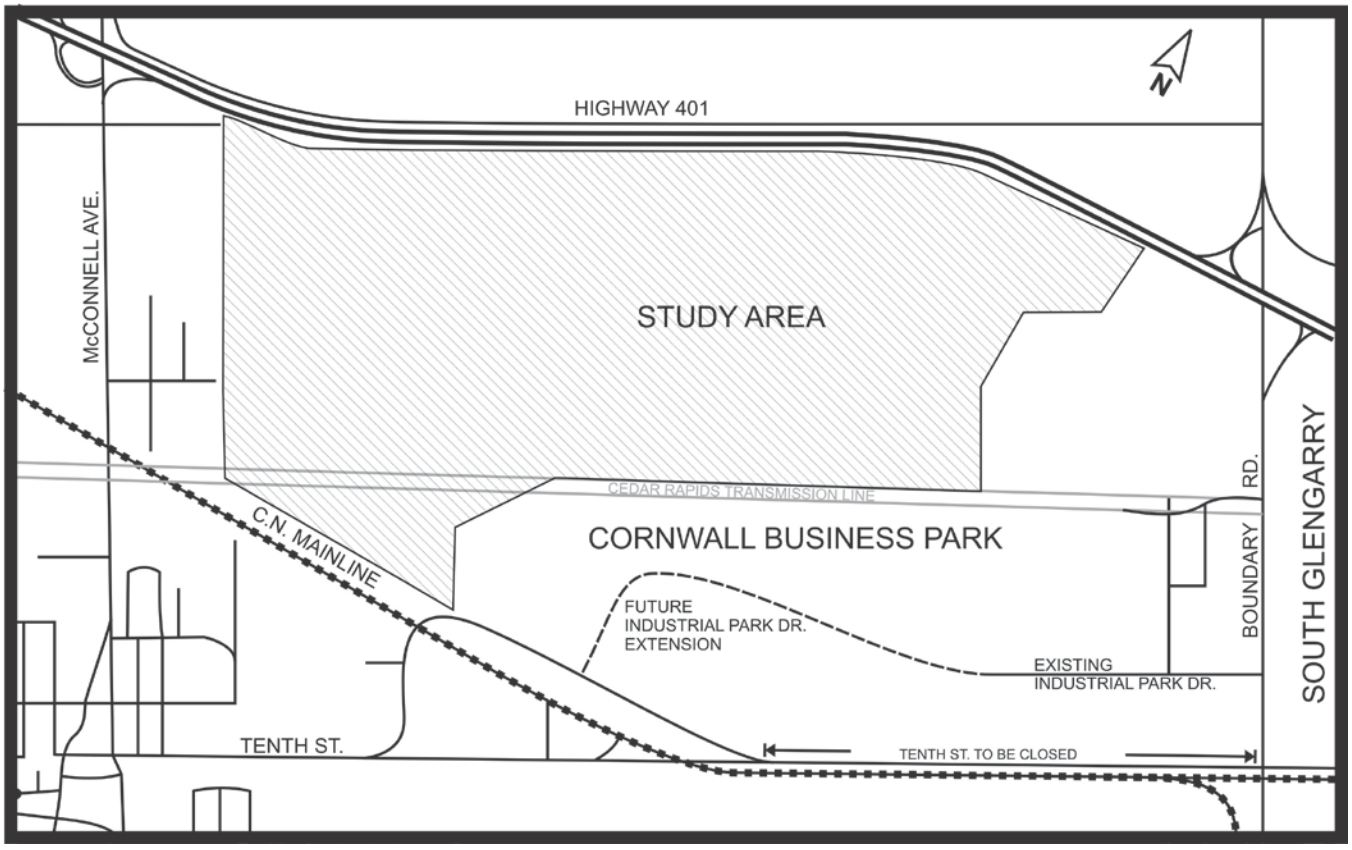
Study Goal

The objectives of this study include the following:

- Preparation of an EA and a secondary transportation plan following an integrated process meeting the Planning Act requirements to serve the Cornwall Business Park Master Plan; and
- Obtain environmental clearance for the future construction and operation of the roadway.

**Land Use designations within the Business Park will be defined later as customers approach the City to acquire lands for development.*

Study Area


HIGHWAY 401
McCONNELL AVE.
STUDY AREA
CEDAR RAPIDS TRANSMISSION LINE
C.N. MAINLINE
CORNWALL BUSINESS PARK
FUTURE
INDUSTRIAL PARK DR.
EXTENSION
EXISTING
INDUSTRIAL PARK DR.
BOUNDARY RD.
SOUTH GLENGARRY
TENTH ST.
TENTH ST. TO BE CLOSED

Background

A Comprehensive Industrial Park Development Study was completed in 1981 for the Business Park lands located between Highway 401 and Tenth Street. A Final Concept Plan was developed which outlined land uses and a transportation network for the Business Park.

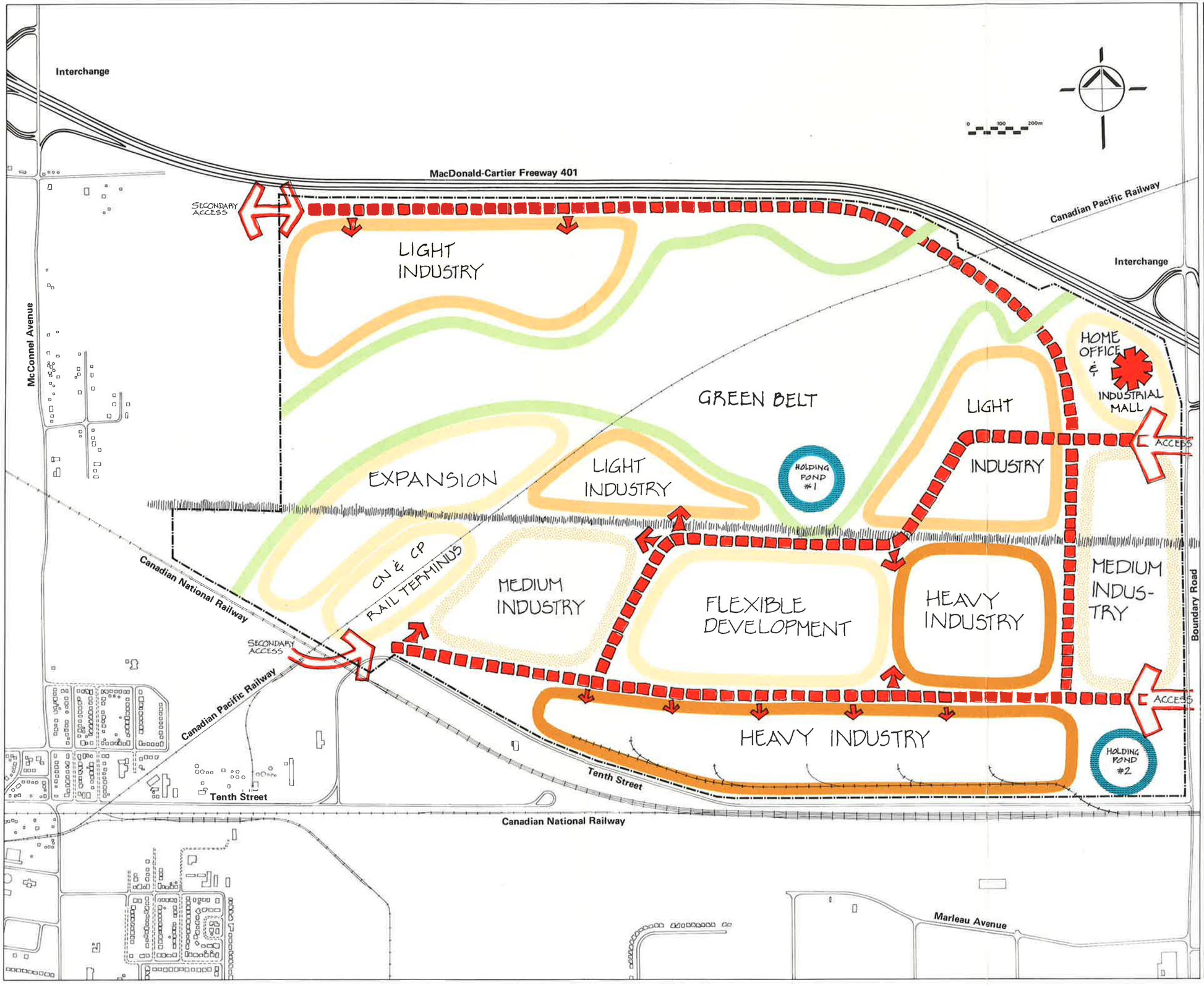
Since 1981, the Cornwall Business Park has seen development occur in the eastern limits of the park. Walmart, Shoppers Drug Mart, Olymel, Gensteel Doors have developed sites within the Business Park since that time.

Recently, the City of Cornwall has undertaken the following development initiatives:

- Construction of extending Industrial Park Drive westerly to Tenth Street to improve the transportation network within the Business Park. The extension results in the closure of the existing Tenth Street/Boundary Road intersection at the CN railway line;
- Sold lands south of the Industrial Park Drive extension to Boundary Properties for a new distribution centre; and
- Sold lands north of the Industrial Park Drive extension to Target for a new distribution centre.

With the majority of lands sold and developed in the southern and eastern portions of the Business Park, the City of Cornwall is examining future development expansion and transportation network possibilities in the northern and western portions of the Business Park. A new transportation link in the northwestern portion of the Business Park would provide an access to McConnell Avenue and the interchange at Highway 401. The new transportation network would also incorporate a utilities/services (water/sewer/hydro) corridor within the right-of-way (ROW) and link to existing utilities in the south portion of the Business Park. The City is currently preparing a re-zoning application for the lands in the northwest portion of the Business Park. The application is requesting that the current zoning be changed from residential to manufacturing to comply with the rest of the land use designation within the Business Park.

A detailed map of the existing Cornwall Business Park development is shown on the following board.



LEGEND 8

- Site Boundaries
- Major Circulation
- Existing Power Line
- Proposed Spur Line

CITY OF CORNWALL
COMPREHENSIVE INDUSTRIAL PARK DEVELOPMENT

FINAL CONCEPT PLAN

826-001

Beauchemin-Beaton-Lapointe Inc
CONSULTANTS

CORNWALL BUSINESS PARK

DEPARTMENT OF ECONOMIC DEVELOPMENT

Choose Cornwall .ca

Legend

- Business Park Properties
- Available Land $20,000/acre
- Future Business Park Expansion
- Business Park Buildings
- Environmental Constraint
- Rail
- Cornwall Transit Stops
- Trans-Northern Pipe Line
- Municipal Boundary

CITY OF CORNWALL
DEPARTMENT OF ECONOMIC DEVELOPMENT
TEL: 613-933-0074 FAX: 613-933-0745

TOLL FREE (NORTH AMERICA): 1-888-CORNWALL

ADDITIONAL INFORMATION, INCLUDING AVAILABLE PROPERTIES, CAN BE FOUND ON OUR WEBSITE

www.ChooseCornwall.ca

LOT BOUNDARIES ARE APPROXIMATE ONLY
FOR EXACT AREAS REFER TO REFERENCE PLANS

LAST UPDATED: AUGUST 2011
PREPARED BY: CORNWALL GIS DEPARTMENT

0 125 250 500 Meters

BUSINESS PARK KEY MAP

Township of South Stormont
CORNWALL CENTRE RD
SOUTH BRANCH RD
POWER DAM DR
BROOKDALE AV
PITT ST
McCONNELL AV
VINCENT MASSEY DR
TOLLGATE RD W
TOLLGATE RD E
Highway 401
Township of South Glengarry
THIRTEENTH ST W
LEMAY ST
Cornwall Business Park
NINTH ST W
NINTH ST E
MARLEAU AV
BOUNDARY RD
SECOND ST W
CUMBERLAND ST
SYDNEY ST
MARLBOROUGH ST
NICK KANEB DR
SECOND ST E
WATER ST W
CANADA
UNITED STATES
New York State
Cornwall Island
International Bridge
MONTREAL RD
St. Lawrence River
Cornwall Economic Development Department
100 Water Street East
0 1 2 Kilometers
N

Aims and Objectives of Public Open House No. 1

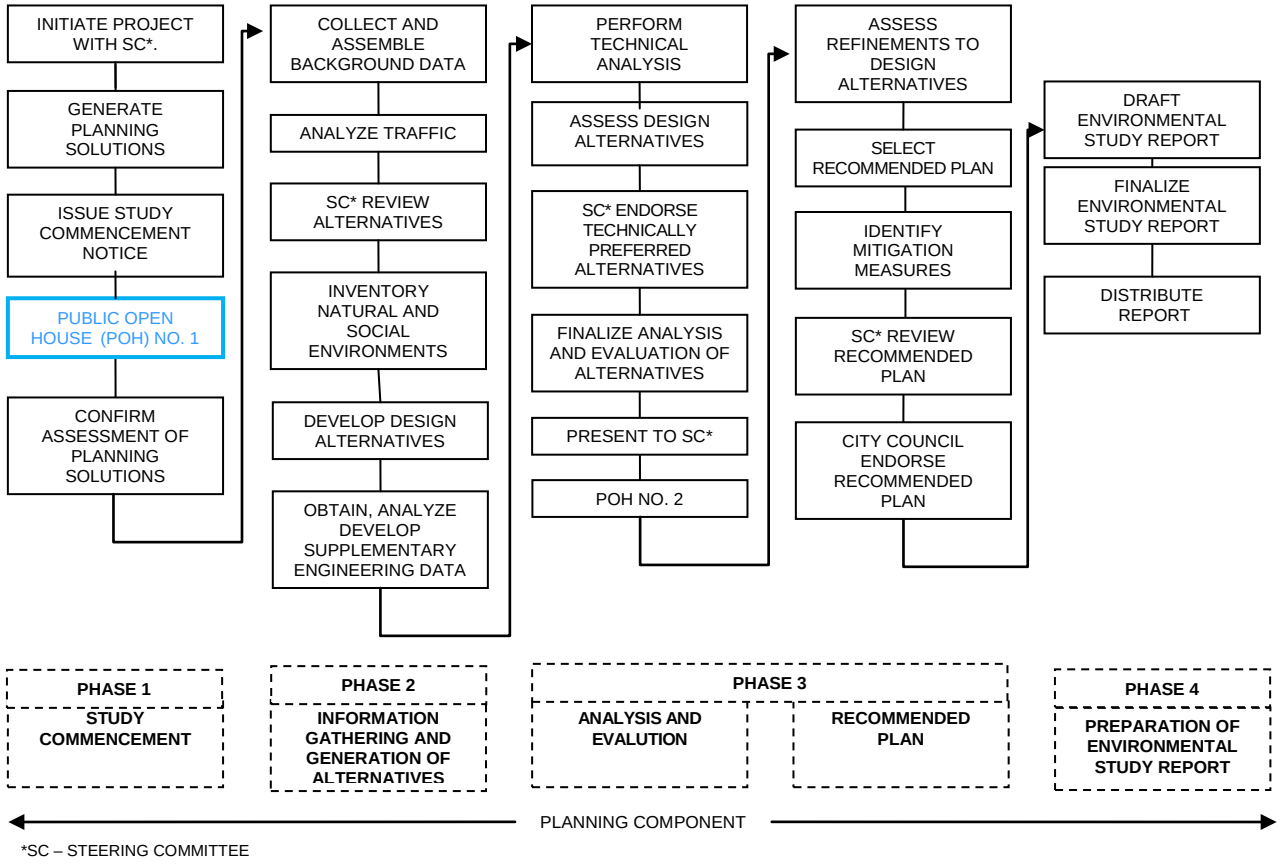
The goal of this meeting is to present:

- The integrated planning process;
- Existing environmental conditions;
- Preliminary design alternatives; and
- Obtain your comments.

Environmental Assessment Process

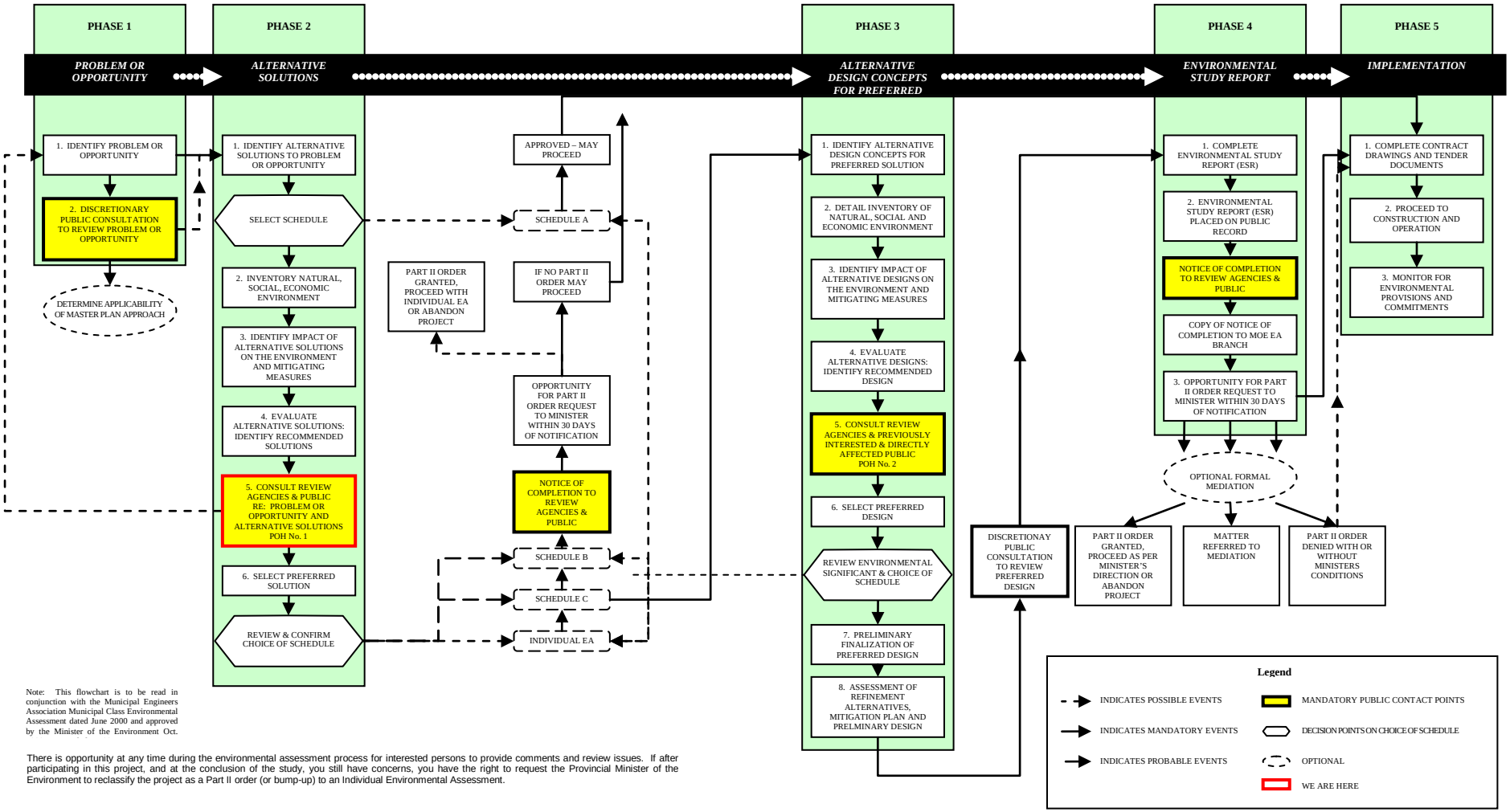
This study will follow an integrated planning process (Municipal Class Environmental Assessment process integrated with the Planning Act) which will provide an updated Secondary Plan for the Cornwall Business Park Master Plan. The integrated planning process is included in Section A.2.9 of the Municipal Class EA. A Schedule "C" planning process under the Municipal Class Environmental Assessment will be followed.

This Environmental Assessment (EA) study will provide environmental clearance for the City of Cornwall to proceed with future construction following the planning process satisfying the requirements of the Ontario Planning Act and Municipal Class EA (Provincial Environmental Assessment Act). The generalized planning process proposed for the Cornwall Business Park study is illustrated below.



*There is opportunity at any time during the environmental assessment process for interested persons to provide comments and review issues. If after participating in this project, and at the conclusion of the study, you still have concerns, you have the right to appeal the Planning Act decision to the Ontario Municipal Board (OMB) and you have the right to request the Provincial Minister of the Environment to reclassify the project as a Part II order (or bump-up) to an Individual Environmental Assessment.

Municipal Class EA Process



Note: This flowchart is to be read in conjunction with the Municipal Engineers Association Municipal Class Environmental Assessment dated June 2000 and approved by the Minister of the Environment Oct.

There is opportunity at any time during the environmental assessment process for interested persons to provide comments and review issues. If after participating in this project, and at the conclusion of the study, you still have concerns, you have the right to request the Provincial Minister of the Environment to reclassify the project as a Part II order (or bump-up) to an Individual Environmental Assessment.

Environmental Inventories

A natural environment assessment was undertaken within the Cornwall Business Park study limits. Three (3) specific natural environment features were examined, including:

1. Bobolink Bird

This species was recently (2010) designed a Threatened Species At Risk (SAR) in Ontario and is subject to protection by the 2007 Ontario SAR Act. In 2010, Bobolink were observed in meadow habitat (former agricultural field) along either side of the Donihee Drain. However, no Bobolink were detected within the study area during June 2011 investigations. Therefore, it is determined that Bobolink no longer occurs in the Cornwall Business Park Study Area. There appears to be little potential for them to occupy the degraded grassland and scrub habitat that remains here.

2. Butternut Trees

A Butternut Tree Health Assessment was undertaken in June 2011 to determine if any retainable Butternut trees were found adjacent to the Cedar Rapids and Trans-Northern corridors. A total of 130 Butternut trees were assessed and 20 were deemed retainable. Retainable trees must have a 25 m radius buffer. Permits must be issued by the MNR for the removal of any retainable Butternut.

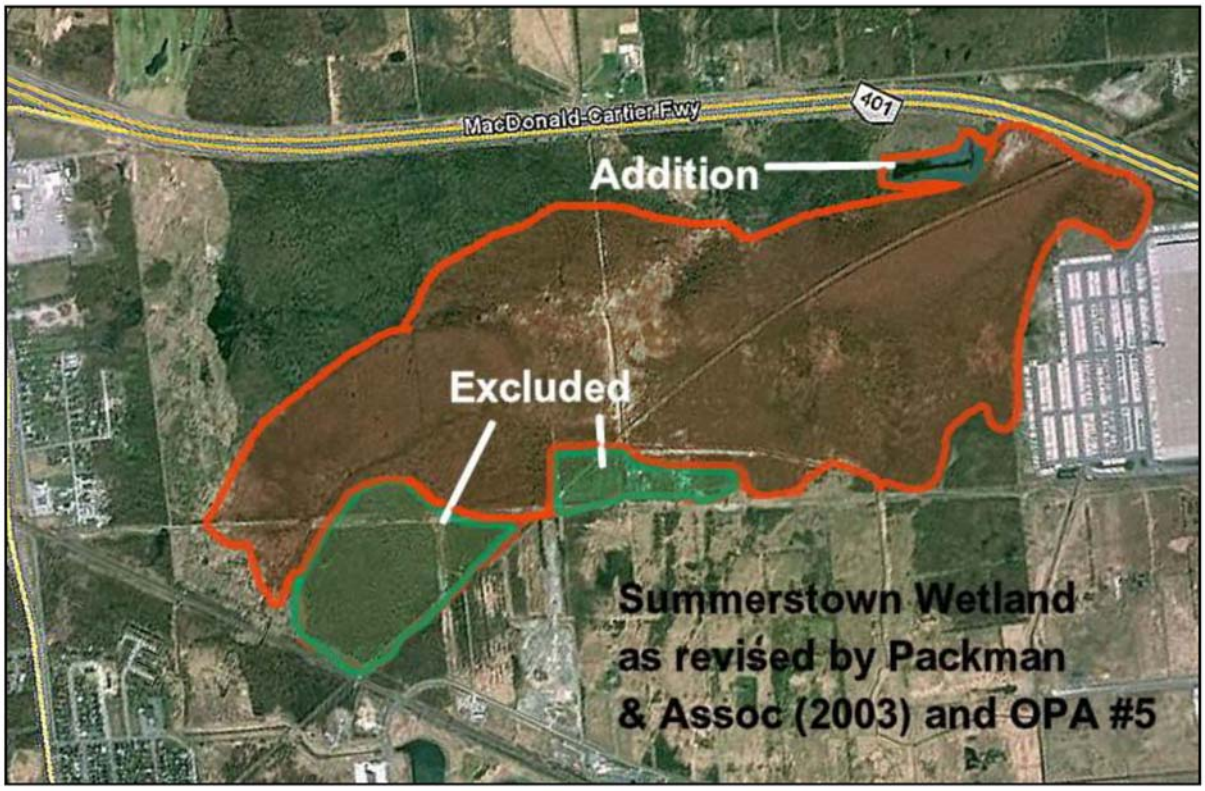
During the assessment it was noted that the northern half of the woodlot (north of the Trans-Northern corridor) is an almost pure Bitternut Hickory forest. That is a very rare vegetation type in eastern Ontario and has associated uncommon ground flora. While the beneficiary of no regulatory protection, this forest itself and is much more ecologically significant than the Butternut trees.

Environmental Inventories (con't)

3. Wetland Boundary Assessment

The Summerstown Swamp is a Provincially Significant Wetland (PSW) extending across the northern portion of the Cornwall Business Park Property. The boundaries were established in 1984 during a classification process by the Ontario Ministry of Natural Resources (MNR). The PSW delineation was re-examined in 2003 and numerous changes were made to the boundaries. The wetland boundaries were refined further in 2005 with Official Plan Amendment #5 (OPA 5). On-site and off-site reviews of the PSW boundaries were undertaken in June 2011 to review the boundaries established in 2003 and 2005.

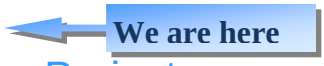
The present review has determined that the 2003 and 2005 revisions of the Summerstown Swamp boundary are accurate. Accordingly, with a few exceptions, the present review concurs with the 2003 and 2005 revisions of the Summerstown Swamp PSW boundary. Those exceptions, a small addition and two deletions, are shown below. A field review in July 2012 will be conducted by the MNR, RRCA and the consultant to determine if these areas are to be removed/added to the wetland boundary area.



Study Stages

This EA study will include the following five key study stages:

1. Study Commencement
    - o Define Problem (Need and Justification) or Opportunity

2. Information Gathering and Generation of Alternatives 

    - o Consideration of Alternative Solutions/Alternative Projects

3. Analysis and Evaluation of Alternatives and Technically Preferred Alternatives
    - o Alternative Design Concepts for Preferred Solutions

4. Recommended Plan
    - o Effects and Mitigation Measures

o

5. Documentation
    - o Environmental Study Report (ESR)

Evaluation of Alternatives

The evaluation of alternatives is a two-step approach.

Phase 2 - Review and Confirm Planning Solutions

The Assessment of Planning Solutions is shown on the next display boards, entitled:

- How Do We Address the Problems
- Assessment of Alternative Planning Solutions

Phase 3 - Review of Preliminary Design Alternatives

The Preliminary Design Alignment Alternatives will assess what provides the best balance of roadway operation/safety and land use planning while minimizing any detrimental environmental effects.

Phase 2 - Planning Solutions

Planning Solutions represent alternative ways of addressing the identified problem. This step in the study process will address Phase 2 of the Municipal Class Environmental Assessment (EA) process (i.e. problem definition, project need and justification, and assessment of alternative planning solutions).

A preliminary screening level evaluation has been undertaken of Alternative Planning Solutions (or alternative transportation approaches and land use approaches) to solving the needs of the development area. Transportation system improvements are required to address projected deteriorating operating conditions.

The Planning Solutions considered as part of this study and the preliminary assessment are presented on the following exhibits.

Evaluation of Alternative Planning Solutions (Alternatives to the Project)

Do Nothing	Limit/Defer Growth	Transportation Systems Management	Transportation Demand Management	New and/or Improved Roadway
Maintain the current transportation network. Do not implement any new transportation links. Does not address identified transportation needs and development plan.	Defer/limit new development in northern portion of Cornwall Business Park.	Use technology and other strategies to increase the efficiency of the existing transportation network. TSM should be considered part of an overall transportation strategy	Use travel demand management (TDM) strategies to reduce auto use, including: Shifting demand to non-peak hours Ridesharing, carpooling, etc. Transit incentives to increase the transit modal share Discourage automobile use. TDM should be considered part of an overall transportation strategy.	Implement a new roadway link in the northern portion of the Cornwall Business Park.
✗	✗	✓	✓	✓
DO NOT CARRY FORWARD	DO NOT CARRY FORWARD	CARRY FORWARD *(Not as Stand-Alone Solution but part of the basket of complementary solutions)*	CARRY FORWARD *(Not as Stand-Alone Solution but part of the basket of complementary solutions)*	CARRY FORWARD *(Not as Stand-Alone Solution but part of the basket of complementary solutions)*

Phase 3 - Review of Preliminary Design Alternatives

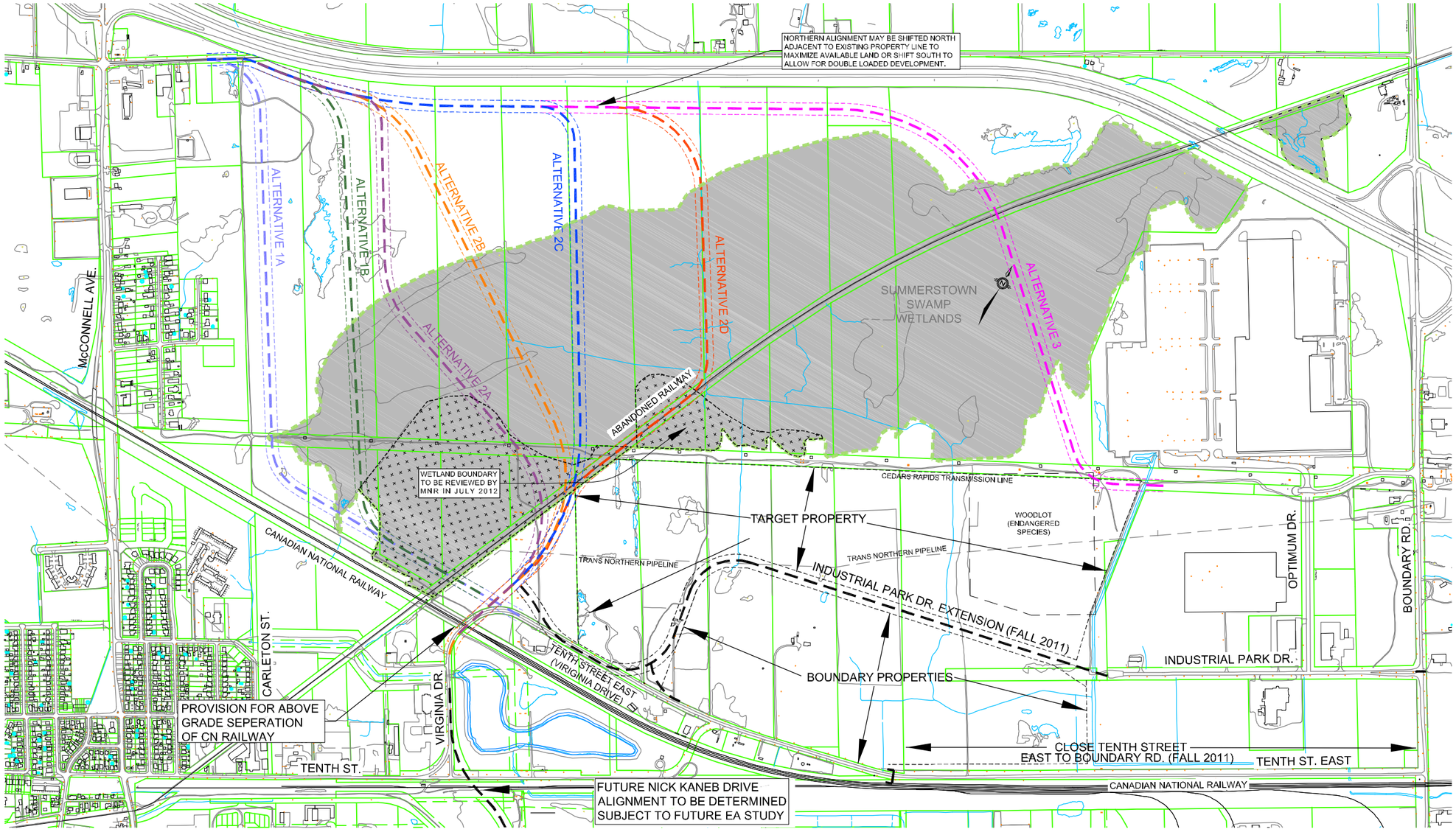
The Preliminary Design Alternatives will assess what provides the best balance of transportation and land use planning while minimizing any detrimental environmental effects.

The seven (7) preliminary design alternatives carried forward for evaluation are:

- Alternative 1A – Roadway link from Tollgate Road southerly to Virginia Drive along western limits of the Business Park
- Alternative 1B – Roadway link from Tollgate Road southerly to Virginia Drive further east of the western limits of the Business Park
- Alternative 2A – Roadway link from Tollgate Road to Virginia Drive within central area of the Business Park
- Alternative 2B – Roadway link from Tollgate Road to Virginia Drive within central area of the Business Park
- Alternative 2C – Roadway link from Tollgate Road to Virginia Drive within central area of the Business Park
- Alternative 2D – Roadway link from Tollgate Road to Virginia Drive within central area of the Business Park
- Alternative 3 – Roadway link from Tollgate Road easterly to SCM Way

The analysis and evaluation of the Preliminary Design Alternatives is broken down into tasks shown below.

- The Evaluation Process
- The potential list of evaluation criteria



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PRELIMINARY DESIGN ALTERNATIVES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT & SECONDARY TRANSPORTATION PLAN
FOR THE CORNWALL BUSINESS PARK MASTER PLAN

Cornwall
ONTARIO CANADA

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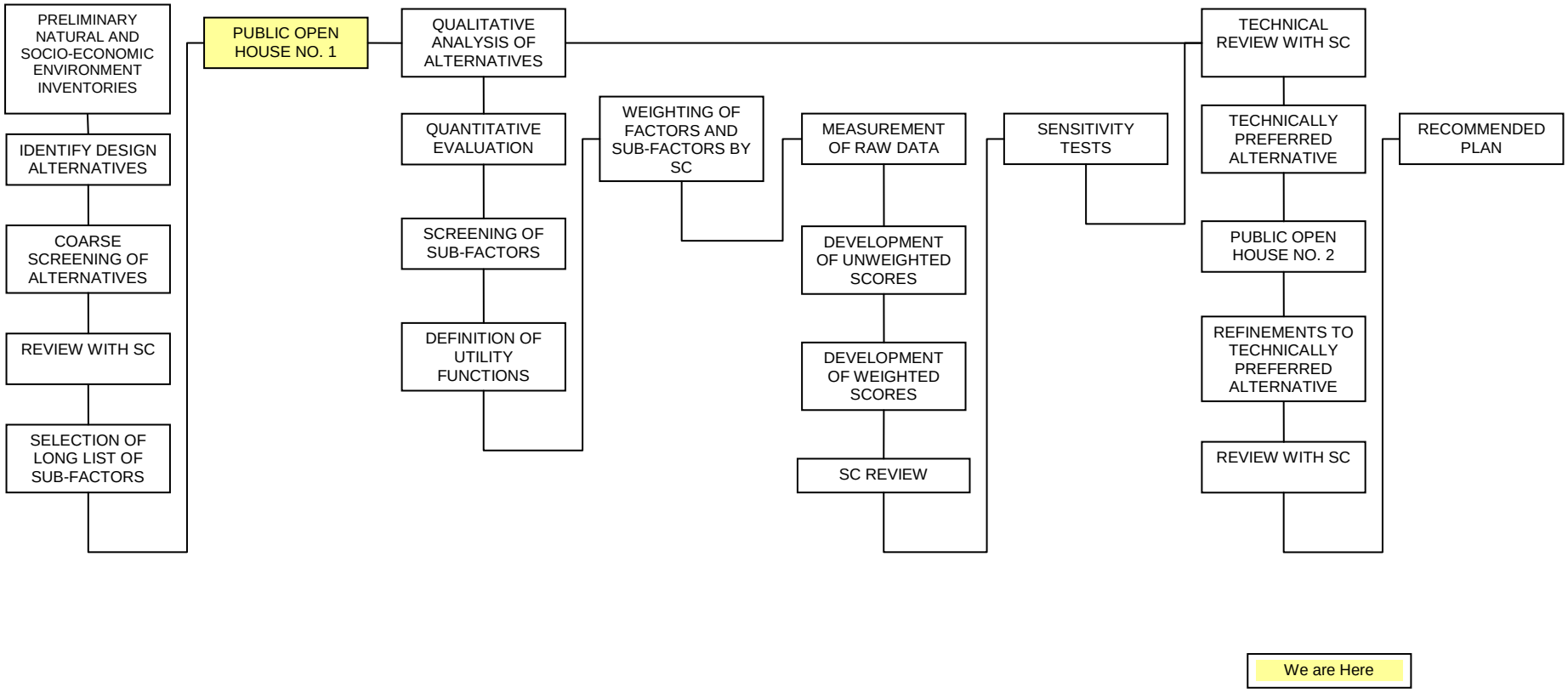
Evaluation Process



What are the Evaluation Criteria?

The following evaluation criteria categories may be used in the assessment:

- TRAFFIC AND TRANSPORTATION
- NATURAL ENVIRONMENT
- CULTURAL ENVIRONMENT
- SOCIO-ECONOMIC ENVIRONMENT
- LAND USE AND PROPERTY
- COST

This list is preliminary and it will be reviewed and expanded with input from the public and Steering Committee. Should you feel that there are other criteria that should also be considered please list them on your comment sheet.

Public Involvement

Your input into this study is valuable and appreciated. Comment forms are available at the Registration Desk. All information is collected in accordance with the Freedom of Information and Privacy Act.

Please provide your completed comment form on or before **July 3, 2012**. Methods of sending in your form are indicated on the comment sheet.

There is an opportunity at any time during the EA process for interested persons to provide comments. Any comments received pertaining to the study will be collected under the Environmental Assessment Act and, with the exception of personal information, will become part of the public record.

What Happens Next?

Following this Public Open House we will:

- Review all Comments
- Carry out the Analysis and Evaluation
- Select the Technically Preferred Alternative
- Hold Public Open House No. 2 (Summer/Fall 2012)

How Can You Remain Involved in the Study?

You can remain involved in the Cornwall Business Park EA study by:

- Requesting that your name/e-mail be added to our study mailing list
- Providing a written comment sheet
- Attending our next Public Open House
- Contacting the consultants at any time during the study

Any of our representatives can assist you in completing the above activities.

Appendix C
Comment Sheets

Comment Sheet

City of Cornwall
Municipal Class Environmental Assessment
for the Cornwall Business Park
Public Open House
June 19, 2012
4:00 p.m. to 7:00 p.m.
Cornwall Civic Complex – McLeod Room

Thank you for your participation. Open House information is also available at www.cornwall.ca. Please deposit this comment sheet in the box provided or e-mail/fax/mail it no later than July 3, 2011 to:

Mark Boileau
Economic Development Manager
City of Cornwall
Cornwall Economic Development
100 Water Street, Suite 104
Cornwall ON K6H 6G4
Tel: (613) 933-0074
Fax: (613) 933-0745
mboileau@cornwall.ca

Pascal Pitre, P. Eng., M.Pl.
Project Manager
GENIVAR
15 Fitzgerald Road
Ottawa, ON K2G 9G1
Tel: (613) 829-2800
Toll Free: 1-866-537-5289
Fax: (613) 829-8299
pascal.pitre@genivar.com

COMMENTS

AS WELL AS THE WRITTEN COMMENTS GIVEN TO MARK BOILEAU, I NOTICED ON YOUR DRAWINGS THAT OUR TOWERS ARE INDICATED ON THE NORTH SIDE OF OUR PROPERTY WHILE IN REALITY, THEY ARE ON THE SOUTH SIDE. AS WELL WHEN WE REBUILT OUR LINE IN 2003-2004, WE REDUCED THE NUMBER OF TOWERS BY 30%

Name:
Address
Telepho
E-mail:
☑ **Add me to mailing list**

Notices of future meetings will be sent through our mailing list and placed in local newspapers. Please indicate above if you want to be added to our mailing list. Personal information on this form is collected under the authority of the Municipal Act and will be used for this project only.

Comment Sheet

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Economic Development Manager
City of Cornwall
Cornwall Economic Development
100 Water Street, Suite 104
Cornwall ON K6H 6G4
Tel: (613) 933-0074
Fax: (613) 933-0745
mboileau@cornwall.ca

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Project Manager
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Tel: (613) 829-2800
Toll Free: 1-866-537-5289
Fax: (613) 829-8299
pascal.pitre@genivar.com

COMMENTS

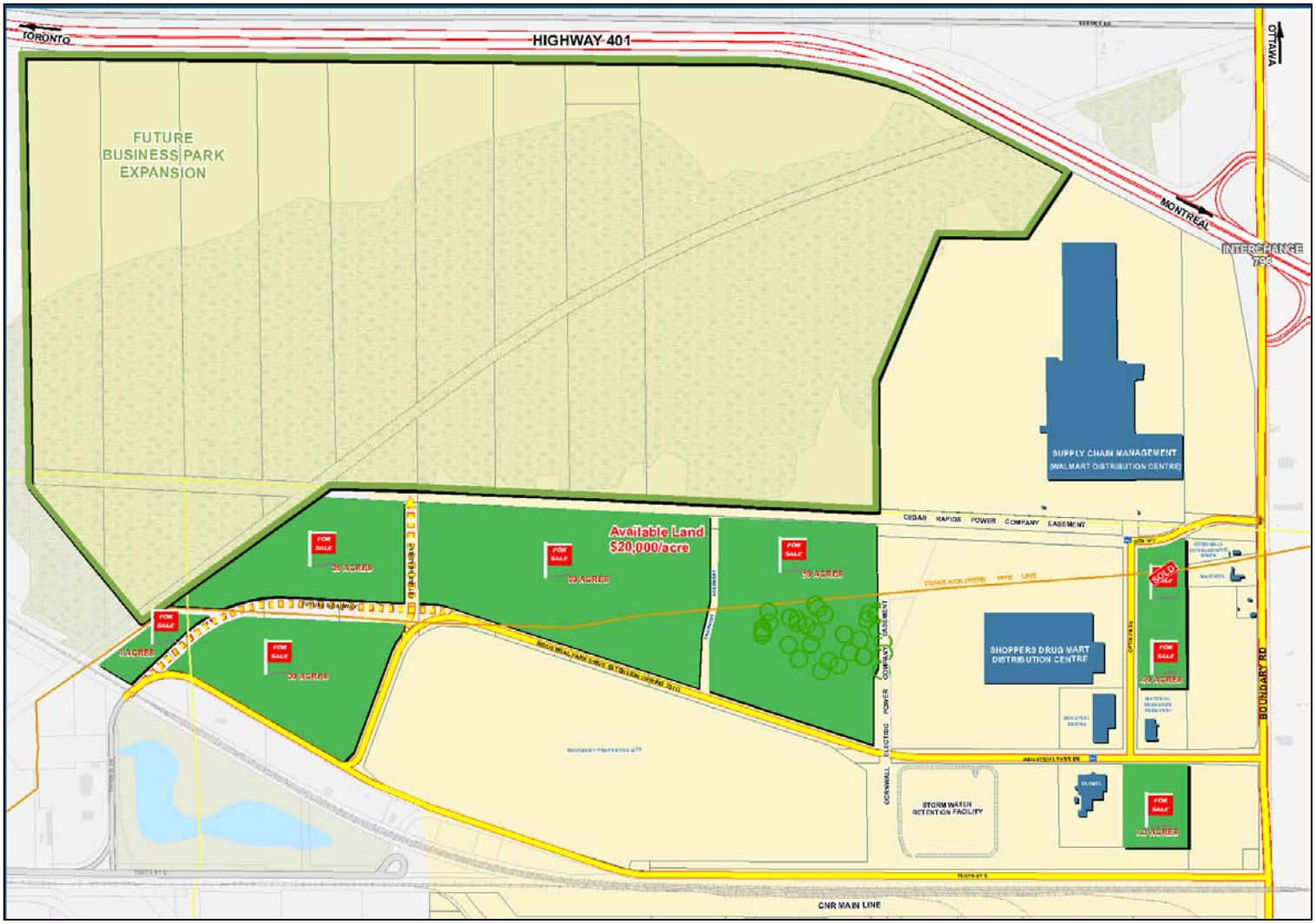
send road options plan electronically

Name:
Address & Post
Telephone:
E-mail:
☐ **Add me to m**

Notices of future meetings will be sent through our mailing list and placed in local newspapers. Please indicate above if you want to be added to our mailing list. Personal information on this form is collected under the authority of the Municipal Act and will be used for this project only.

Prepared for:
City of Cornwall

Public Open House No. 2
Summary Report



Municipal Class Environmental Assessment for the Cornwall Business Park Master Plan

GENIVAR File No. 111-15011

GENIVAR

November 2012

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Appendices

1.0 INTRODUCTION

This report, prepared by GENIVAR, documents the second and final Public Open House (POH) meeting held as part of the Municipal Class Environmental Assessment (EA) process to examine roadway alternatives within the Cornwall Business Park expansion area. This meeting is one element of an open and consultative process with the public for this project.

This study is being undertaken by the City of Cornwall; the purpose of which is to:

- Prepare an EA and a secondary transportation plan following an integrated process meeting the Planning Act requirements to serve the Cornwall Business Park Master Plan; and
- Obtain environmental clearance for the future construction and operation of the roadway.

1.1 Study Area

The study area is shown in **Figure 1**.

1.2 Public Open House No. 2 Date and Location

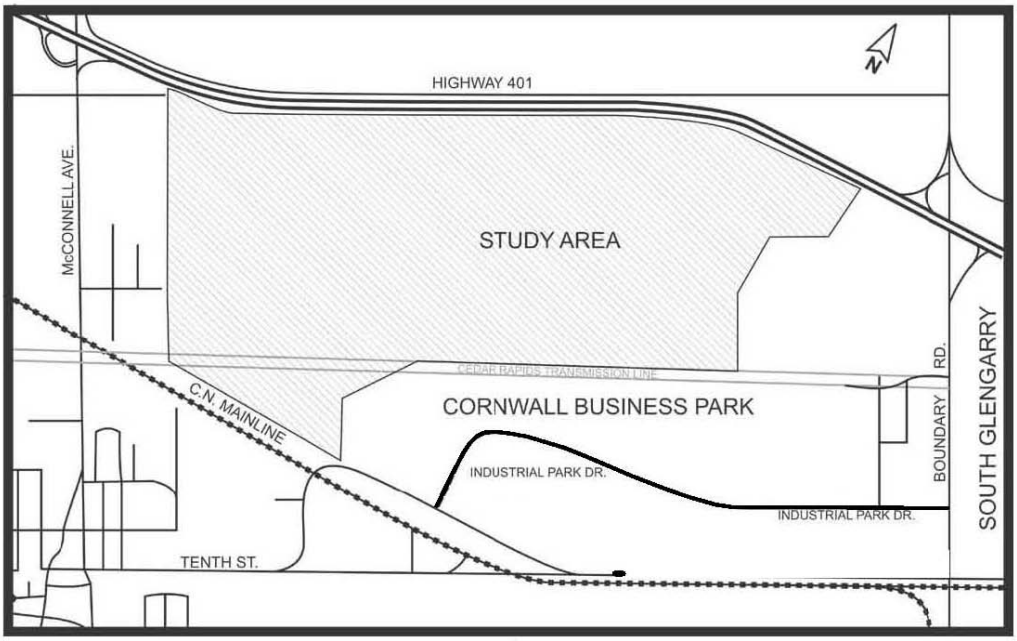
The Public Open House was held:

Wednesday, October 17, 2012
Cornwall Civic Complex
McLeod Room
100 Water Street
Cornwall, ON
4:00 to 6:00 pm

The purpose of the second Public Open House was to:

- Review preliminary alignment alternatives;
- Review the evaluation of alignment alternatives;
- Review the Technically Preferred Alternative (TPA);
- Review the study schedule; and
- Obtain public comments.

Figure 1
Study Area



2.0 PUBLIC AND AGENCY CONSULTATION

One of the key aspects of the project is to provide the public, interested parties and affected agencies with the opportunity for meaningful input. In order to ensure this objective is met, a public and agency notification program was undertaken.

The program included a number of communication mechanisms, discussed below.

2.1 Individual Contact Notification

Notification of Public Open House No. 2 was communicated to all affected residents, external agencies and interested groups.

Individual notices were mailed to property owners within and adjacent to the Study Area. A database of property owner names was provided by the City of Cornwall.

A sample of the notice is provided in **Appendix A**.

2.2 Newspaper Notice

A newspaper notice for Public Open House No. 2 was placed in the following local newspapers prior to the event:

- Cornwall Standard Freeholder: Wednesday, October 10th, 2012; and
- Le Journal de Cornwall: Wednesday, October 10th, 2012.

The newspaper notices are found in **Appendix A**.

2.3 City of Cornwall Website

Notification and information regarding Public Open House No. 2 was also provided on the City of Cornwall's website at www.cornwall.ca

2.4 Agency Contacts

Agency contact letters were sent to the following external agencies and interest groups:

- Ministry of the Environment
- Ministry of Culture
- Ministry of Natural Resources
- Department of Fisheries and Oceans Canada
- Transport Canada
- Raisin Region Conservation Authority
- St. Lawrence Parks Commission
- Ministry of Health and Long-Term Care
- Health Canada
- Ministry of Economic Development and Trade
- Environment Canada
- St. Lawrence River Restoration Council
- Heritage Cornwall Local Architectural Conservation Advisory Committee
- St. Lawrence River Institute of Environmental Sciences
- Canadian National Railway
- Cornwall Chamber of Commerce
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Attorney General
- United Counties of SD&G
- Township of South Glengarry

- Eastern Ontario Health Unit;
- Cornwall Transit;
- Municipal Environmental Advisory Committee;
- Conseil écoles publiques de l'Est de l'Ontario (French)
- Upper Canada District School Board (Public)
- Catholic District School Board of Eastern Ontario (English)
- Conseil des Ecoles District Catholique de Langue Français
- Cornwall Fire Service
- Cornwall Police Service
- Bell Canada
- Cornwall Electric
- Union Gas
- Atria Networks
- Cogeco Cable
- Trans Northern Pipelines
- Cedar Rapids Transmission Company Commission

2.5 First Nations Contacts

Contact letters were sent to the following First Nations groups and agencies:

- Indian and Northern Affairs Canada
- Ministry of Aboriginal Affairs
- Mohawk Council of Akwesasne

3.0 PUBLIC OPEN HOUSE NO. 2

Public Open House (POH) No. 2 was held at the Cornwall Civic Complex – McLeod Room on Wednesday, October 17th, 2012 between the hours of 4:00 and 6:00 pm.

The Public Open House permitted all members of the public and interest groups to view the presentation material and to discuss the project with City and consultant representatives. The POH presentation boards are provided in **Appendix B**.

In total, eleven (11) persons registered at the Public Open House. Each person was provided with a comment form and encouraged to submit their written comments in the box provided or by fax/email within the 2-week comment period. In total, three (3) comment sheets /letters/e-mails were returned during the Open House and the subsequent 2-week response period. Copies of the completed comment forms are provided in **Appendix C**. A summary of the comments/issues provided is outlined in **Chapter 4.0**.

4.0 SUMMARY OF WRITTEN COMMENTS

The written comments/concerns received at the Public Open House are summarized below in **Table 1.**

Table 1
Summary of POH Written Comments

Area of Concern	Number Of Respondents	Comment Sheet Reference No.
Support the Technically Preferred Alternative (TPA)	1	1
Information Request	2	2, 3

5.0 CONCLUSIONS

General support for the Technically Preferred Alternative within the expansion area of the Cornwall Business Park was received from the public at the Open House.

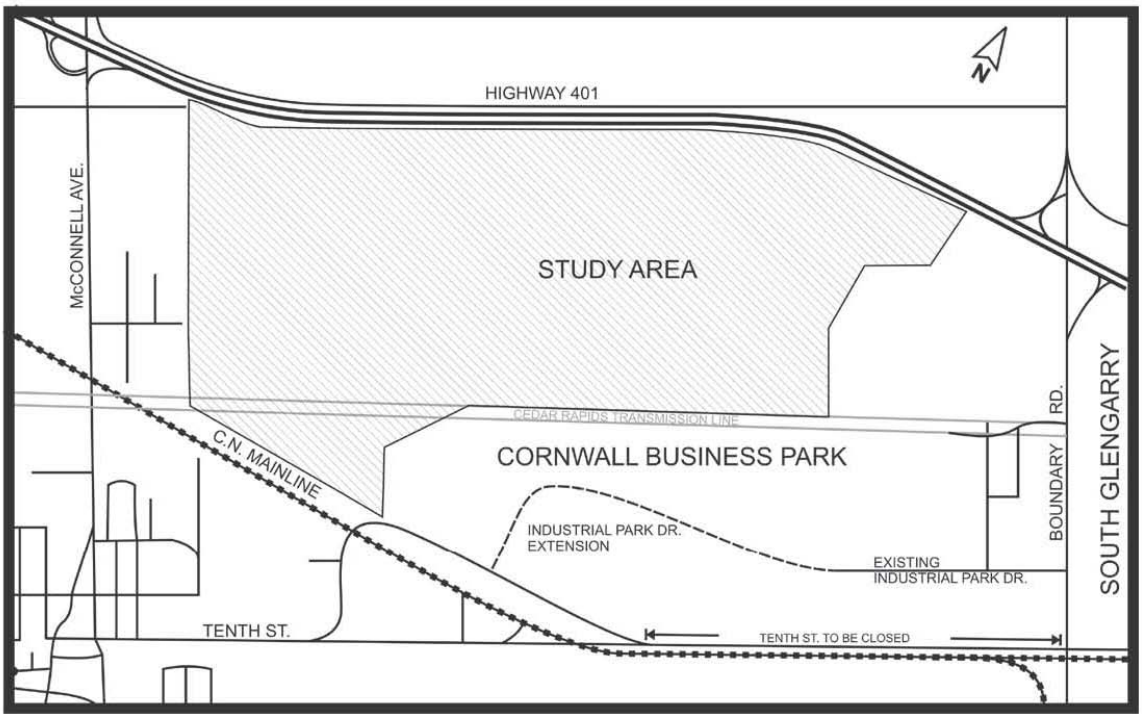
APPENDICES

Appendix A
Contact and Newspaper Notice

Public Open House No. 2 Notice

Municipal Class Environmental Assessment
for the Cornwall Business Park Master Plan

The City of Cornwall has undertaken a Municipal Class Environmental Assessment (EA) to provide an updated transportation plan for the Cornwall Business Park Master Plan. This study is examining the future expansion lands within the Cornwall Business Park. A Schedule "C" planning process under the Municipal Class Environmental Assessment is being followed. The study area is shown below.



The objectives of this study include the following:

- Preparation of an EA and transportation plan within the expansion lands within the Cornwall Business Park; and
- Obtain environmental clearance for the future construction and operation of the roadway.

The second and final public open house will provide the public the opportunity to:

- Review preliminary alignment alternatives;
- Review the evaluation of alignment alternatives;
- Review the Technically Preferred Alternative (TPA);
- Review the study schedule; and
- Receive public comments.

Public Open House No. 2 has been scheduled and will be held as follows:

Wednesday, October 17th, 2012
Cornwall Civic Complex
McLeod Room (2nd Floor)
100 Water Street
Cornwall, ON
4:00 to 6:00 pm

For more information please contact:

Mark Boileau
Economic Development Manager
City of Cornwall
Cornwall Economic Development
100 Water Street East, Suite 104
Cornwall ON K6H 6G4
Tel: (613) 930-2787
Fax: (613) 933-0745
mboileau@cornwall.ca

Pascal Pitre, P. Eng., M.Pl.
Project Manager
GENIVAR
2611 Queensview Drive, 3rd Floor
Ottawa, ON K2B 8K2
Tel: (613) 829-2800
Toll Free: 1-866-537-5289
Fax: (613) 829-8299
pascal.pitre@genivar.com

We are interested in hearing comments from individuals, groups, and the general public. Comments and information regarding this study are being collected to assist the City of Cornwall in meeting the requirements of the Environmental Assessment Act. This information will be maintained on file for use during the study, and may be included, with the exception of personal information, in the study documentation. Any persons interested in being included on the study mailing list or obtaining information regarding the project should contact the consultant project manager.

Appendix B
POH No. 2 Presentation Boards

Welcome

Welcome to the second and final Public Open House for the Municipal Class Environmental Assessment (EA) for the Cornwall Business Park.

Please feel free to view the presentation material and the background reports at the Resource Table. Should you have any questions regarding the material, or any other aspect of the study, please speak to any of the City or Consultant study team members in attendance.

We encourage you to provide your comments in writing. Comment sheets are available at the registration desk. Please deposit completed forms in the comment box or mail/ fax/ e-mail to the address at the bottom of the form. We also encourage you to record your attendance at the registration desk.

There is an opportunity at any time during the EA process for interested persons to provide comments. Any comments received pertaining to the study will be collected under the Environmental Assessment Act and, with the exception of personal information, will become part of the public record.

Study Goal

The goal of this study includes the following:

- Preparation of an EA for a transportation plan within the expansion lands of the Cornwall Business Park; and
- Obtain environmental clearance for the future construction and operation of the roadway.

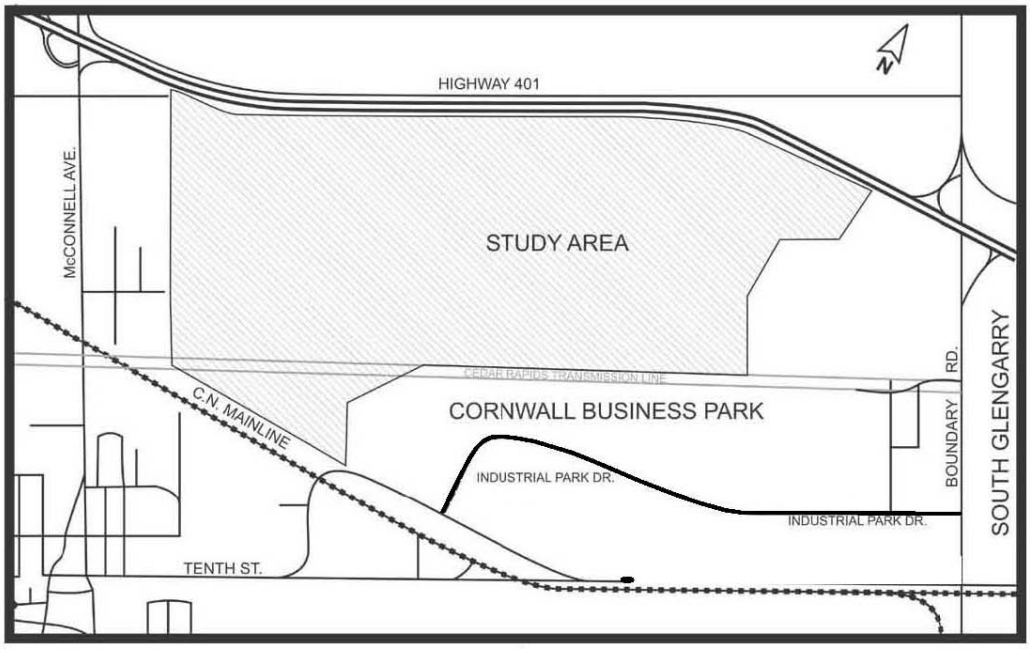
**Land Use designations within the Business Park will be defined later as customers approach the City to acquire lands for development.*

Aims and Objectives of Public Open House No. 2

The second and final public open house will provide the public the opportunity to:

- Review preliminary alignment alternatives;
- Review the evaluation of alignment alternatives;
- Review the Technically Preferred Alternative (TPA);
- Review the study schedule; and
- Receive public comments.

Study Area



Background

A Comprehensive Industrial Park Development Study was completed in 1981 for the Business Park lands located between Highway 401 and Tenth Street. A Final Concept Plan was developed which outlined land uses and a transportation network for the Business Park.

Since 1981, the Cornwall Business Park has seen development occur in the eastern limits of the park. Walmart, Shoppers Drug Mart, Olymel, Gensteel Doors have developed sites within the Business Park since that time.

Recently, the City of Cornwall has undertaken the following development initiatives:

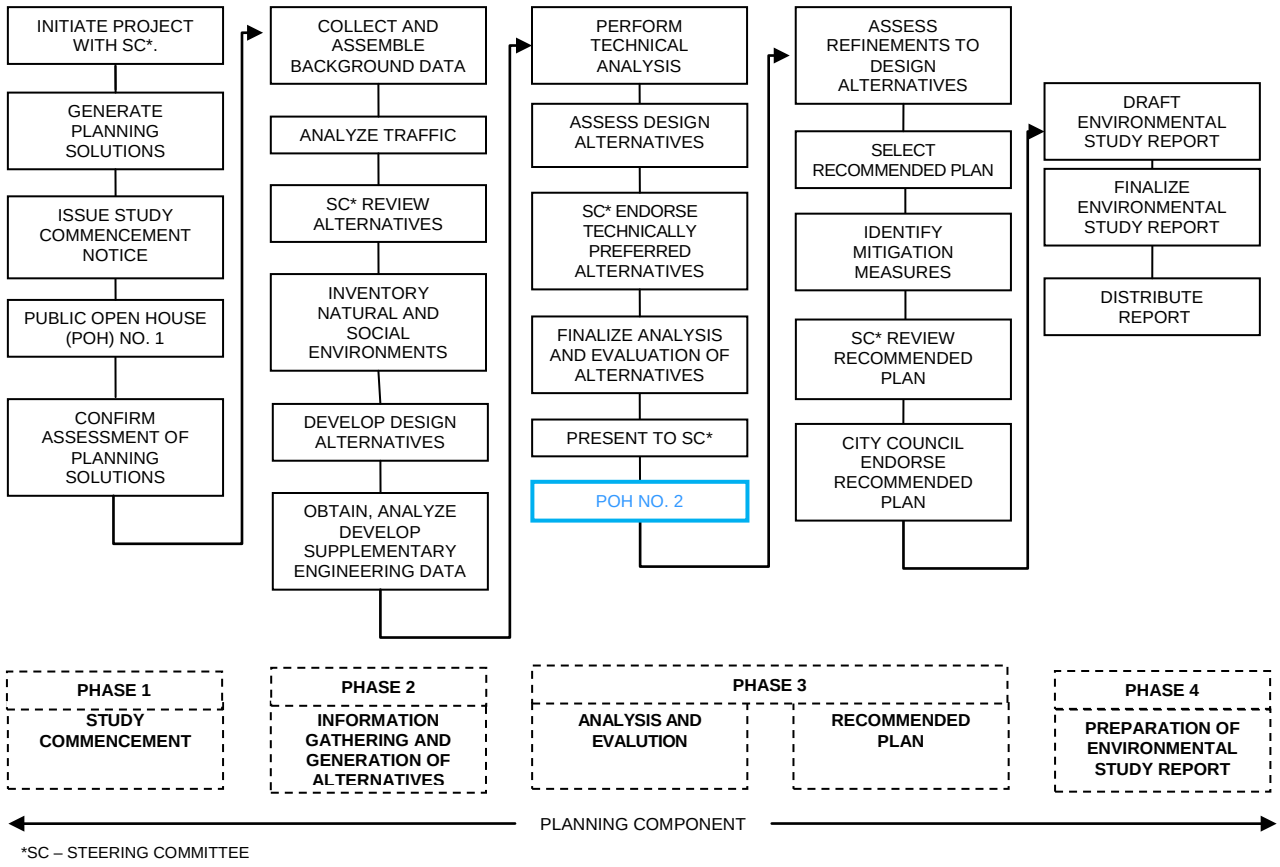
- Extended Industrial Park Drive westerly to Tenth Street to improve the transportation network within the Business Park. The extension results in the closure of the existing Tenth Street/Boundary Road intersection at the CN railway line;
- Sold lands south of the Industrial Park Drive extension to Boundary Properties for a new distribution centre; and
- Sold lands north of the Industrial Park Drive extension to Target for a new distribution centre.

With the majority of lands sold and developed in the southern and eastern portions of the Business Park, the City of Cornwall is examining future development expansion and transportation network possibilities in the northern and western portions of the Business Park. A new transportation link in the northwestern portion of the Business Park would provide an access to McConnell Avenue and the interchange at Highway 401. The new transportation network would also incorporate a utilities/services (water/sewer/hydro) corridor within the right-of-way (ROW) and link to existing utilities in the south portion of the Business Park.

Environmental Assessment Process

This study will follow a Schedule “C” planning process under the Municipal Class Environmental Assessment will be followed.

The generalized planning process proposed for the Cornwall Business Park study is illustrated below.



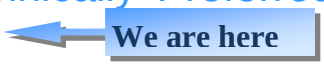
Study Stages

This EA study will include the following five key study stages:

1. Study Commencement
    - Define Problem (Need and Justification) or Opportunity

2. Information Gathering and Generation of Alternatives
    - Consideration of Alternative Solutions/Alternative Projects

3. Analysis and Evaluation of Alternatives and Technically Preferred Alternative
    - Alternative Design Concepts for Preferred Solutions
    - Technically Preferred Alternative



4. Recommended Plan
    - Effects and Mitigation Measures

5. Documentation
    - Environmental Study Report (ESR)

Evaluation of Alternatives

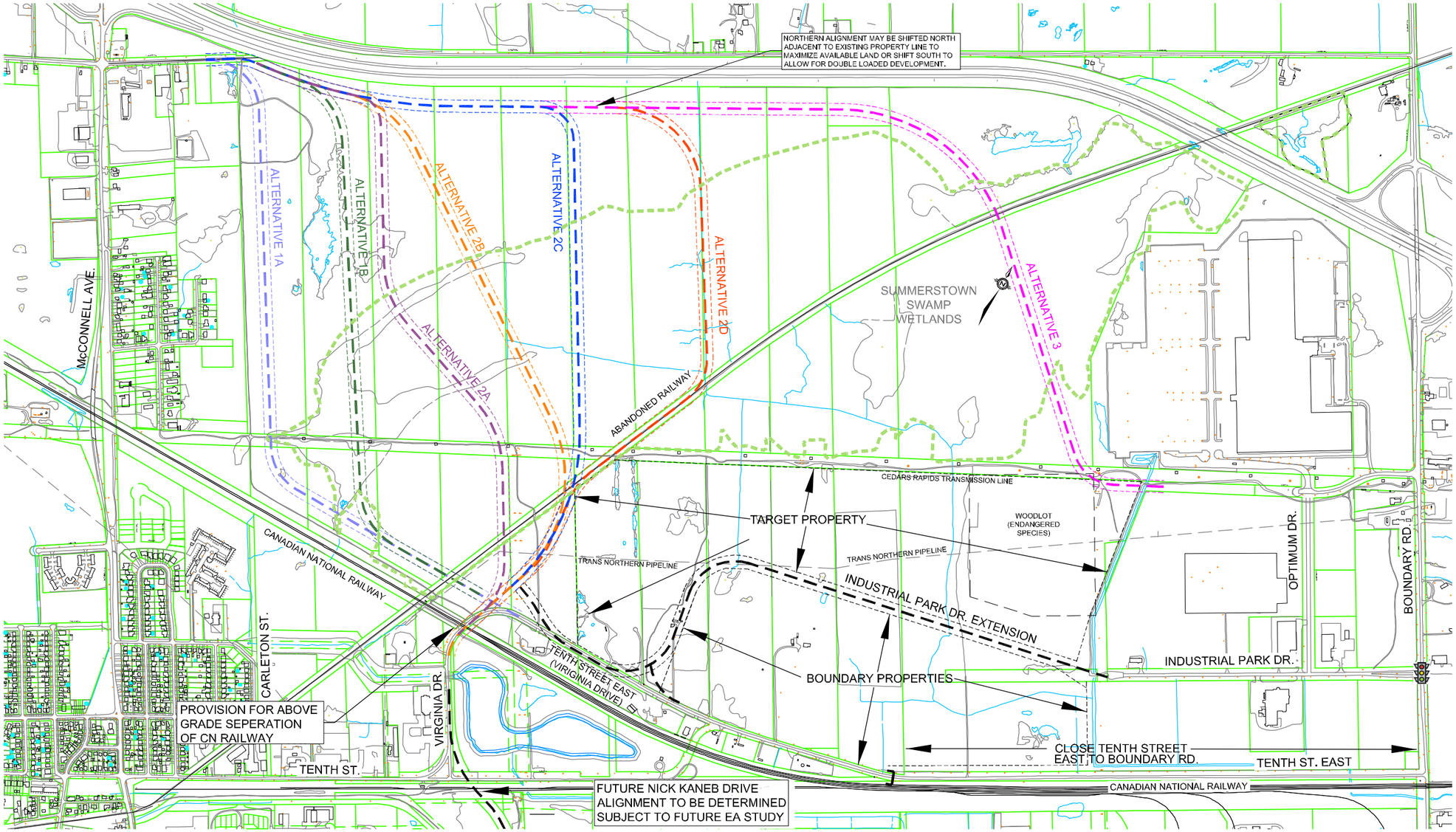
The evaluation of alternatives is a two-step approach.

Phase 2 - Review and Confirm Planning Solutions (Previously completed and presented at Public Open House No. 1)

Phase 3 - Review of Preliminary Design Alternatives

The Planning Solutions were used to develop preliminary design alternatives for a transportation plan within the expansion lands of the Cornwall Business Park.

The Preliminary Design Alignment Alternatives are being evaluated and assessed to determined which alternative provides the best balance of roadway operation/safety and land use planning while minimizing any detrimental environmental effects.



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PRELIMINARY DESIGN ALTERNATIVES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT & SECONDARY TRANSPORTATION PLAN
FOR THE CORNWALL BUSINESS PARK MASTER PLAN

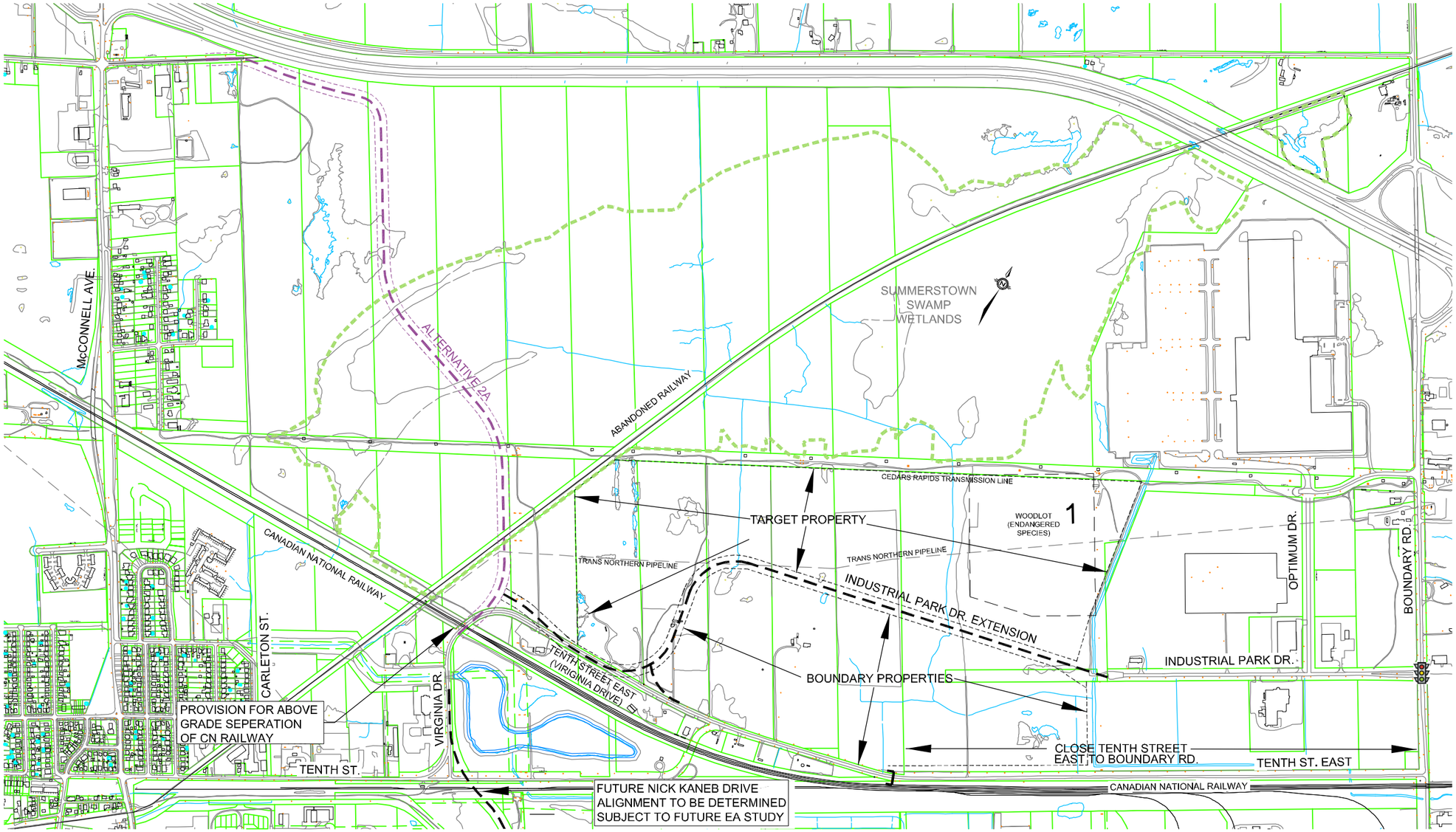
Cornwall
ONTARIO CANADA

GENIVAR

Cornwall Business Park Master Plan EA
Analysis and Evaluation of Preliminary Design Alternative

(✓ Good in comparison, - Neutral in comparison, ✗ Poor in comparison)

Criteria	Alternative 1A	Alternative 1B	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 2D	Alternative 3
Transportation							
• Provides connectivity from the Northwest to the Southeast	✓	✓	✓	✓	✓	✓	✓
• Potential for future above grade crossing at CNR crossing	✗	✗	✓	✓	✓	✓	-
• Provides direct/efficient access from south portion of Business Park to McConnell Ave./Highway 401 Interchange	✓	✓	✓	✓	✓	-	✗
• Relief to McConnell Ave. corridor between Marleau Ave. and Tollgate Rd.	✓	✓	✓	✓	✓	-	✗
Natural Environment							
• Roadway impact through Summerstown Swamp Wetland boundary	✓ **(0.95 ha)**	✗ **(2.8 ha)**	✗ **(2.9 ha)**	✗ **(2.8 ha)**	✗ **(2.9 ha)**	✗ **(3.9 ha)**	✗ **(2.3 ha)**
• Roadway impact to area of organic soil (Core wetland area)	- **(1.2 ha)**	- **(1.4 ha)**	- **(1.1 ha)**	- **(1.3 ha)**	- **(1.5 ha)**	- **(1.1 ha)**	✗ **(3.6 ha)**
• Impact to wetland with multiple crossings (i.e. separate roadway and services corridors)	✓	✓	✓	✓	✓	✗	✗
Land Use & Property							
• Impact to residential community west of Business Park lands	✗	-	✓	✓	✓	✓	✓
• Potential to maximize large developable lots within Business Park	-	✓	✓	-	-	✗	✗
• Conformity to Official Plan (Shared roadway and services corridor)	✓	✓	✓	✓	✓	✗	✗
• Greatest likelihood to benefit from potential change in land use designation in southwest portion of existing wetland boundary	✓	✓	✓	-	-	-	✗
Cost							
• Road Construction Cost	- **($3.9 million)**	- **($4.1 million)**	- **($4.0 million)**	- **($4.1 million)**	✗ **($4.9 million)**	✗ **($5.4 million)**	✗ **($8.0 million)**
• Services Costs (Maintain services in same corridor as roadway)	✓	✓	✓	✓	-	✗	✗
Overall Summary	✗ This alternative does not provide the necessary future transportation and roadway safety measures and impacts the adjacent residential community	✗ This alternative does not provide the necessary future transportation and roadway safety measures	✓ This alternative provides the necessary transportation and roadway safety measures while minimizing social impacts and maximizing development potential. It is recommended as the Technically Preferred Alternative	✗ This alternative is similar to alternative 2A but does not maximize development potential	✗ This alternative does not maximize development potential and has a higher cost impact	✗ This alternative has greater impact on the Provincially Significant Summerstown Swamp Wetland, presents a more circuitous route, does not maximize development potential and has a higher cost impact	✗ This alternative does not provide the necessary future transportation connectivity measures, has greater impact on organic soils, does not maximize development potential and has a higher cost impact



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TECHNICALLY PREFERRED ALTERNATIVE

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT & SECONDARY TRANSPORTATION PLAN
FOR THE CORNWALL BUSINESS PARK MASTER PLAN

Cornwall
ONTARIO CANADA

GENIVAR

Public Involvement

Your input into this study is valuable and appreciated. Comment forms are available at the Registration Desk. All information is collected in accordance with the Freedom of Information and Privacy Act.

Please provide your completed comment form on or before **October 31, 2012**. Methods of sending in your form are indicated on the comment sheet.

There is an opportunity at any time during the EA process for interested persons to provide comments. Any comments received pertaining to the study will be collected under the Environmental Assessment Act and, with the exception of personal information, will become part of the public record.

What Happens Next?

Following this Public Open House we will:

- Review all comments
- Finalize the Technically Preferred Alternative
- Present the TPA to City Council for endorsement
- Prepare and File the Environmental Study Report – Fall 2012

How Can You Remain Involved in the Study?

You can remain involved in study by:

- Requesting that your name/e-mail be added to our study mailing list
- Providing a written comment sheet
- Contacting the City or consultant representatives at any time during the study

Appendix C
Comment Sheets

(1)

Comment Sheet

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Municipal Class Environmental Assessment
for the Cornwall Business Park
Public Open House
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Toll Free: 1-866-537-5289
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COMMENTS

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Comment Sheet

(2)

City of Cornwall
Municipal Class Environmental Assessment
for the Cornwall Business Park
Public Open House
October 17, 2012
4:00 p.m. to 6:00 p.m.
Cornwall Civic Complex – McLeod Room

Thank you for your participation. Open House information is also available at www.cornwall.ca. Please deposit this comment sheet in the box provided or e-mail/fax/mail it no later than October 31, 2012 to:

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Economic Development Manager
City of Cornwall
Cornwall Economic Development
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COMMENTS

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(3)

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COMMENTS

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Appendix B

Natural Environment Memorandums

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16 August 2011

Summerstown Swamp (Wetland) Boundary in Cornwall Business Park

The Summerstown Swamp is a Provincially Significant Wetland (PSW) extending across the northern portion of the Cornwall Business Park Property. The boundaries were established in 1984 during a classification process by the Ontario Ministry of Natural Resources (MNR) (MNR 1984). Precise determination of the PSW boundary is unusually difficult here, however, as the wetland grades into extensive low upland forest on a landscape with low topography and a high water table. Accordingly, with impending development issues in and about the Cornwall Business Park significantly affected by the location of those boundaries, the PSW delineation was re-examined by Packman & Associates in 2003. Their investigation reviewed the original MNR boundary limit in considerably more detail than the original investigation and made numerous minor and several major changes to it (Packman 2003).

Further questions about the PSW boundary, particularly along the southern edge of the wetland, were raised recently in light of current development activities. Accordingly, as part of the on-going Environmental Assessment of the Cornwall Business Park study area, a review of the amended PSW boundaries is being undertaken to confirm refinements suggested in the Packman & Associates (2003) analysis.

Two areas were excluded in the north of the wetland during the development of OPA #5 in 2005 in discussions between the City of Cornwall, the Raisin River Conservation Authority and the Ministry of Natural Resources. These alterations are accommodated in the boundaries described here and were not reconsidered during 2011 investigations. This review focuses particularly on the southern boundary of the PSW where conflicts with development proposals are most immediate.

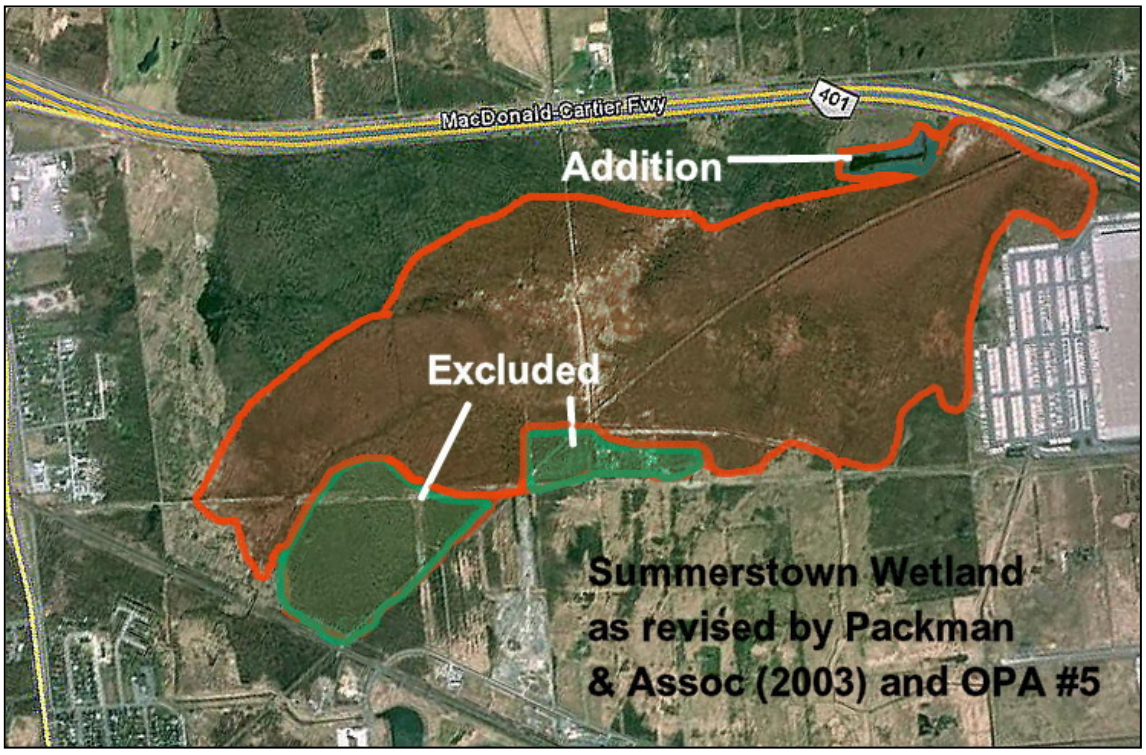
Assessment Context

In addition to an off-site review of the Packman & Associate (2003) assessment, the boundaries of the PSW were examined directly in the field by Daniel F. Brunton on 21 and 22 June 2011. Access was obtained from the abandoned railway bed transecting the area in a southwest-northeast direction as well as from footpaths and the Cedar Rapids power line to the south east and west. Foot access along the northern boundary was achieved from the Highway 401 corridor. The boundary line proposed by Packman & Associates was examined at various points around

the PSW, with particular attention paid to the southern wetland edge along and near the Cedar Rapids power line and the abandoned railway bed.

Discussion

The present review has determined that the Packman and Associates (2003) revision of the Summerstown Swamp boundary is a significantly more accurate and defendably representation of current PSW boundary criteria than the original 1984 MNR classification. Accordingly, with few exceptions, the present review concurs with the Packman & Associates (2003) findings and their proposed revisions of the Summerstown Swamp PSW boundary. Those exceptions, one small addition and two deletions, are described and illustrated below.



ADDITION: *Northeast corner* : Packman & Associates (2003) note "*there is a narrow cattail pocket located within the old field habitat …..* [which] *should not be included as part of the overall wetland due to its small size (0.5 ha), minimal ecological function and surrounding matrix (old field, Highway 401)*". This wetland, however, is physically connected to the adjacent wetland habitat (Figure 2) and movement of wetland animals between the two (e.g. amphibians) demonstrates a meaningful ecological contribution to the larger wetland. It warrants designation as part of the larger PSW.

DELETION: Southwest corner: As noted above, the high water table and level topography of the area makes precise delineation of wetland-upland boundaries in some areas more difficult than usual. The predominantly upland vegetation of this and the following area along the southern edge of the PSW, however, better represents low upland deciduous forest than deciduous swamp forest.


Figure 2: Cattail marsh and pond habitat abutting deciduous swamp forest in northeast of Summerstown PSW

An extensive area in the southwest extending from (and including) the old railway bed (Figure 3) and northward to and a little beyond the Cedar Rapids power line corridor is included in the PSW by Packman & Associates (2003). They state that "*this area is represented by a red ash/red maple dominated swamp*". While that is true for most of the area north of the power line, the majority of the area south of it - Area C in Figure 1 of this study - is dominated by upland species (pers. obs.). Trembling Aspen, both alone and in combination with Green Ash, dominates the forest canopy. White Birch is locally evident as well (Figure 4).


Figure 3: low upland forest either side of old railway bed south of Cedar Rapids power line

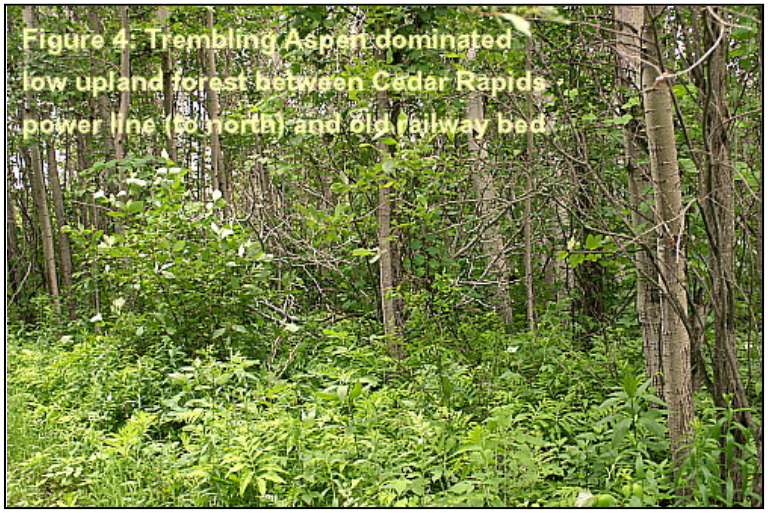


Figure 4: Trembling Aspen dominated low upland forest between Cedar Rapids power line (to north) and old railway bed.

Similarly, the undergrowth is dominated by a variety of species typical of low upland forest such as Canada Goldenrod (*Solidago canadensis*), Sensitive Fern (*Onoclea sensibilis*), Evergreen Wood Fern (*Dryopteris intermedia*), Calico Aster (*Symphiotrichum lateriflorum*),

Canada Avens (*Geum canadense*) and bedstraw (*Galium triflorum*). The substrate is composed of silty-sand and clay with none of the peaty accumulation that would be expected in a wetland situation.

The high water table/ low topography nature of the site has resulted in numerous tiny and very shallow depressions that are spring flooded (they were dry by mid June in 2011) depressions distributed throughout the predominantly low upland deciduous forest. This is a common phenomena in the former Champlain Sea basin of eastern Ontario, where such 'wetlettes' supporting wetland species are common in low upland forest habitats but do not come close to constituting the greater than 50% representation that would be necessary to declare the habitat wetland.

DELETION: Southcentral boundary: The TS1 and TS2 areas are described in Packman & Associates (2003) as alder and willow dominated Tall Shrub swamp habitat. During the present investigation, however, these two areas (combined to form Area D in Figure 1) were noted to be very similar in nature to the vegetation of Areas C. That is, Area D is a Trembling Aspen and Green Ash dominated low upland deciduous forest with a diversity of low upland and lowland ground vegetation, including Speckled Alder and canopy seedlings, and with numerous wetlettes dispersed throughout but not defining the area.

Conclusion

The review and analysis of the Summerstown PSW by Packman & Associates (2003) represents a predominantly effective and accurate refinement of the boundaries originally described by the Ministry of Natural Resource wetland classification in 1984. As a result of further investigations in the course of the on-going Cornwall Business Park Management Plan Environmental Assessment, however, some alternations to that assessment are in order. These represent minor additions in the north of the wetland as well as deletions of low upland deciduous forest areas in the south.

References

MNR. 1984. Wetland Data Record: Summerstown Swamp. Ontario Ministry of Natural Resources, Kemptville.

Packman and Associates. 2003. Summerstown Swamp (Wetland) Boundary Study Within City of Cornwall Municipal Limits. G. A. Packman & Associates, Ottawa.

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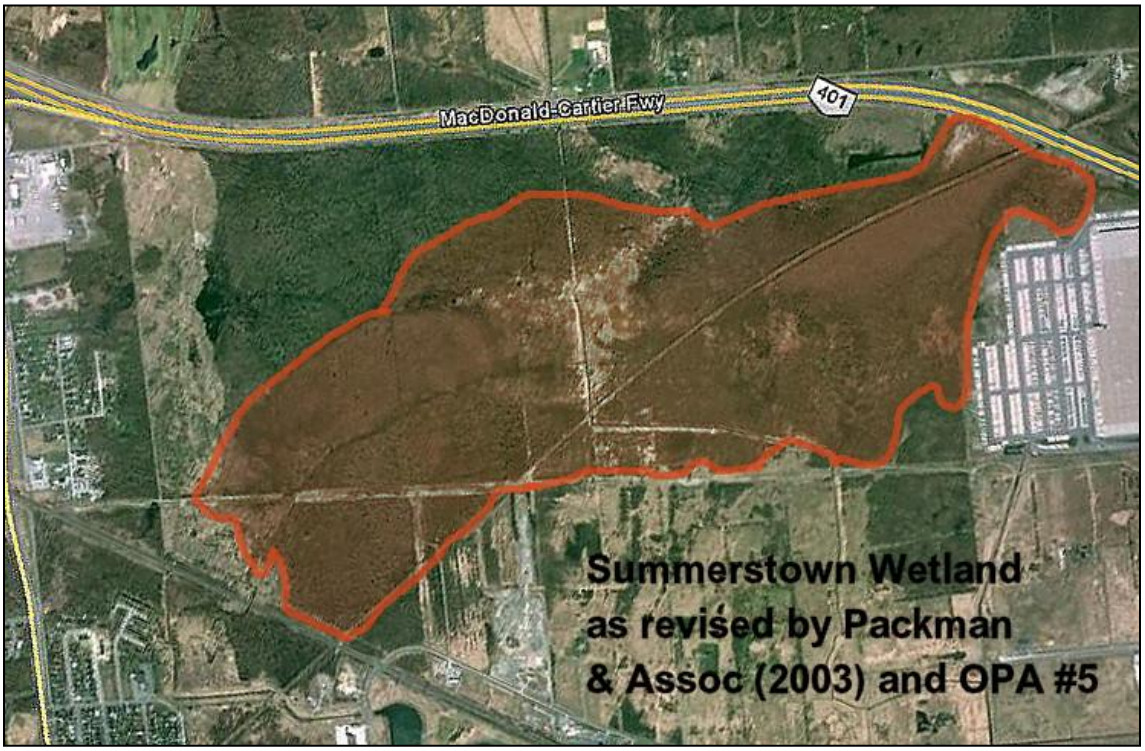
12 December 2011

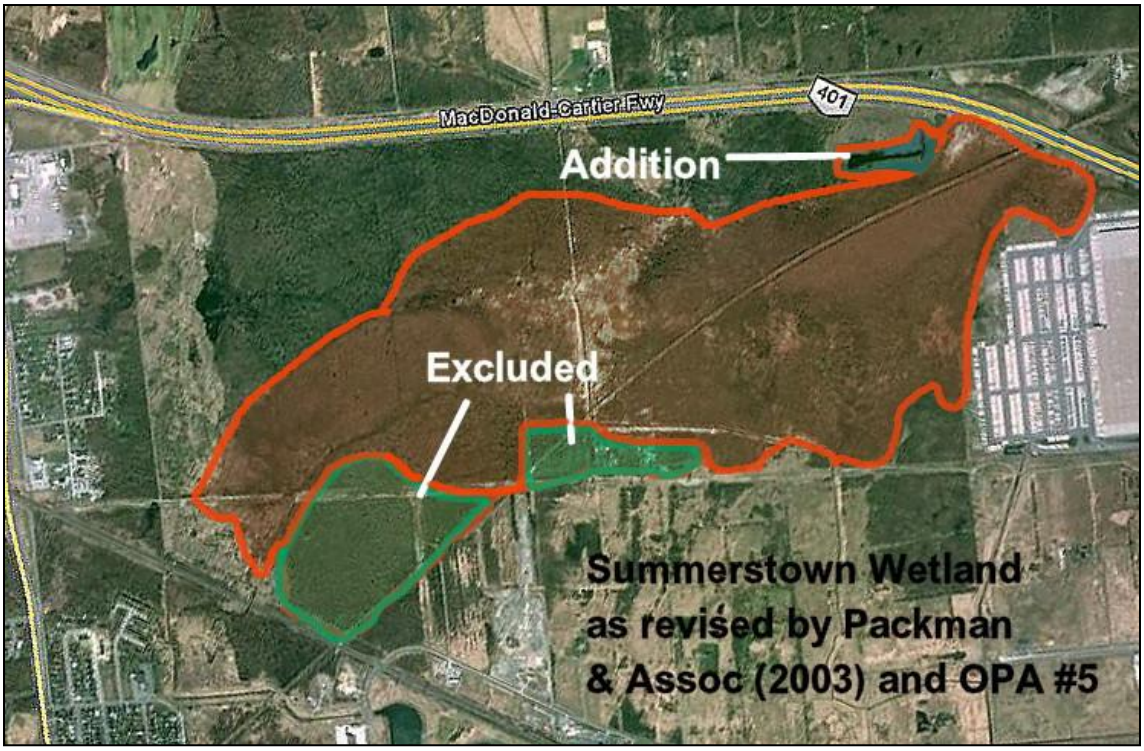
Potential development constraint of Provincially Significant Wetland designation in the northwestern section of the Cornwall Business Park

A substantial portion of the Provincially Significant Summerstown Wetland (PSW) extends across the northern and central area of the Cornwall Business Park. This necessitate a number of considerations in the course of development planning for that site. Several reviews of the boundary have taken place since the original 1984 designation, the most comprehensive being the 2003 study by Packman and Associates illustrated below, which formed the basis for boundary revisions further refined in the 2005 Cornwall OPA#5.



In the course of studies for the on-going Business Park Master Plan Environmental Assessment, I reviewed these again. I concurred with the majority of the boundary derived during the 2003 Packman & Associates studies (in lit, 16 August 2011).

The Figure (below) illustrates two areas to the south of the wetland that were determined during 2011 field investigations to better satisfy the definition of low upland forest rather than true wetland vegetation. It is recommended these be excluded from the wetland. A small area to the north of the designated wetland was similarly determined in the course of the 2011 investigations to actually represent contiguous wetland habitat. It is recommended to be added to the wetland.



With or without the recently suggested boundary alterations, however, the extent of PSW in the northwestern section of the Business Park area is unchanged from the 2005 OP#5. The following reviews the apparent ecological constraints on development presented here by the PSW.

Transportation constraints

As noted in the text of OPA#5, there has been a long-standing desire to construct a collector road across the wetland to provide access to potential non-wetland development lands adjacent to Highway 401. The 2005 Provincially Policy Statement (PPS) makes it clear that public utilities such as roadways are exempt from PSW restrictions. Theoretically then, any public roadway is permissible anywhere within the PSW area of the Cornwall Business Park. In practical terms, however, limitations on the potential development to be serviced by such roadways dictates the feasibility and suitably of roadway development in and about PSW areas.

Similarly, no constraints come into play here under terms of the 2007 Ontario Species At Risk Act (SARO) since no designated Endangered or Threatened species are known to utilize areas within the PSW.

An Ontario-designated Special Concern species, Golden-winged Warbler, was noted briefly in the southeastern portion of the PSW in 2011; it was not noted again and is not believed to have established residency. The common reptile Snapping Turtle (Ontario designated Special Concern) is known from the larger area and also is expected to occur. Special Concern species, however, are not subject to SARO protective measures.

Development limitations

Any development resulting in significant landscape changes (i.e. having negative impact on features and functions upon which the PSW is defined) is prohibited under terms of the PPS. The definitions of activity deemed 'development' and to be 'significant' are clearly expressed in the PPS. Exemptions for agriculture, drainage programs, single residential development on a lot of record, forestry and the aforementioned public utilities are described. In simple terms, most activities that would permanently impair the features and functions of a PSW would be subject to PPS prohibitions.

Accordingly, most physical developments and associated activities such as lot severances, construction of buildings, private roadways, land filling, etc. in the PSW portion of the Cornwall Business Park would not satisfy the PPS standard for permissible negative impacts.

Development also must consider the potential negative impacts on the Adjacent Area. The Adjacent Area of PSWs has been determined by the Ontario Ministry of Natural Resources to be that area extending 120 m out from the PSW boundary. Development in Adjacent Areas is permissible only when it is shown that it will not compromise significant (defining) features and functions of the PSW.

The approximate extent of the Adjacent Area of the northwestern portion of the Summerstown PSW in the Cornwall Business Park is illustrated (shaded yellow) in the adjacent figure. Most of the Adjacent Area in the Cornwall Business Park represents either relatively recently cleared landscape or regenerating scrub growth follow significant

surface disturbances (note the representative area of regenerating ash seedlings over long-abandoned grassy meadow in lands adjacent Highway 401 in the figure [right]). Significant *in situ* natural environment features in such a landscape are minimal.

The primary contribution of these areas to the PSW then, is their enhancement of runoff flowing overland into the PSW. As noted above, no Species At Risk issues are presently known in the Summerstown PSW nor in the Adjacent Area. The degraded condition of the landscape in the Adjacent Area further suggests a low probability of this area presenting a Species At Risk constraint in the future.

A common mitigative measure employed in addressing comparable Adjacent Area ecological function contributions is to designate an undisturbed natural vegetation buffer along the boundary of the PSW. Commercial development, with suitable ground water containment facilities in place, may then be acceptable in the remainder of the Adjacent Area.

Conclusions

The existence of the Summerstown PSW does not preclude the construction of connector and other public roads within the Cornwall Business Park. The potential for the development of private structures and for other major landscape alterations within the PSW, however, is largely prohibited. There is also a requirement to ensure that proposed development in the 120 m wide Adjacent Areas has no negative impact on defining PSW characteristics.

Satisfaction of PPS protective requirements by potential development in the Adjacent Areas will need to focus on protecting that area's surface water enhancement capacity. Designation of a natural vegetation buffer along the margin of the PSW (typically 15 - 30 m wide) should satisfy this protective requirement while leaving the remainder of the Adjacent Area available for commercial development.

A relatively large development area exists northwest of the Cornwall Business Park beyond the limit of the PSW and its Adjacent Area (see figure, page 3). The area of development is larger if development compatible with PSW Adjacent Area concerns are considered. It may be larger still

if the public access road were built to enter from the west rather than having to cross the PSW from the south. The absence of any loss of PSW area that would be achieved by a western access route could balance the ecological cost of establishment a narrower protective Adjacent Area buffer in the north and west. Such a trade-off would achieve a greater net retention of ecological function and natural integrity than would result from the construction of the already permissible southern access option.

There are no Species At Risk constraints presently active in the Cornwall Business Park and there appears to be limited potential for such a constraint to develop in this section of the PSW.

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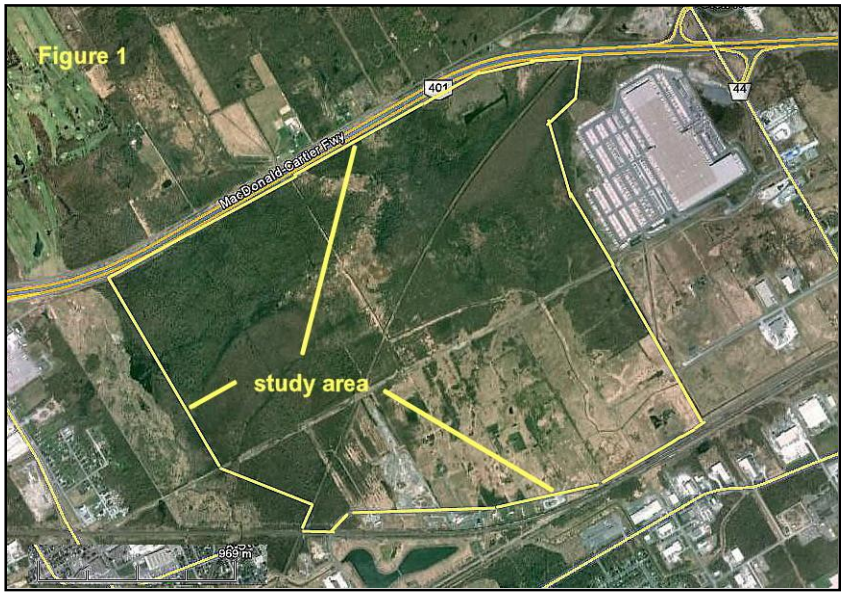
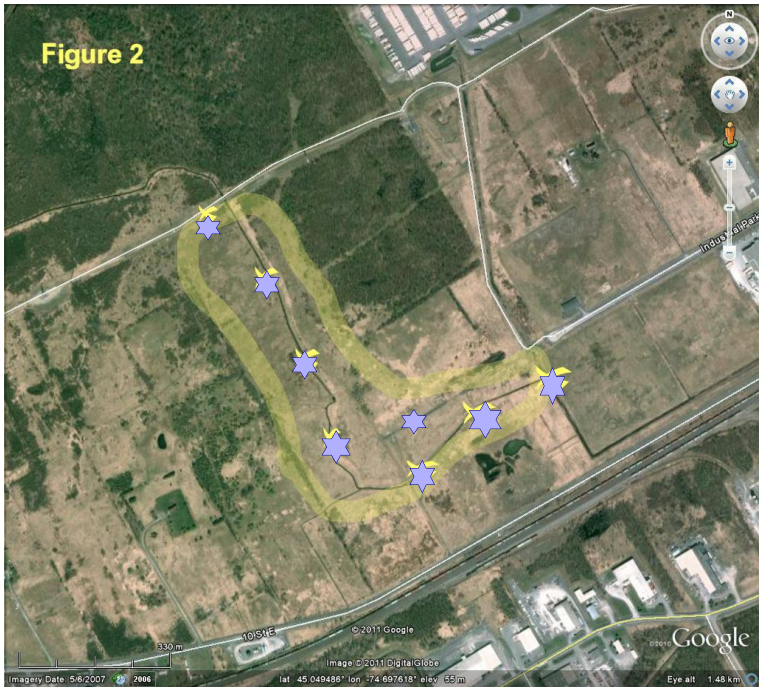
20 June 2011

Re: Species At Risk Bobolink in Cornwall Business Park Study Area



As part of the on-going Environmental Impact Statement (EIS) of the Cornwall Business Park Study Area (Figure 1) in Cornwall, Ontario, a review of the reported occurrence of Bobolink was undertaken. This species was recently (2010) designed a Threatened Species At Risk (SAR) in Ontario and is subject to protection by the 2007 Ontario SAR Act. Eight male Bobolink were observed in meadow habitat (former agricultural field) along either side of the Donihee Drain in 2010 (Raisin River Conservation Area report).



The area in which Bobolink were observed in 2010 (polygon along the drain in Figure 2) was examined on 14 June and 16 June 2011 (the latter with field ecologist Holly Bickerton), employing the recommended Bobolink detection protocol. This involves listening and visually scanning for ten minute intervals at sites 250 m apart within potential suitable habitat (marked by stars on Figure 2).

The protocol was considerably exceeded on 14 June, in fact, with listening and visual scanning being conducted over a three hour period at and between the listening stations identified in Figure 2. The extend of listening was less on 16 June but still exceeded the amount required to satisfy the protocol.

No Bobolink were detected on either of the search days nor during other investigations of the study on 17 June 2011 either within the identified potential Bobolink area or within the overall study area. Realignment of a section of Donihee Drain in the southern portion of the potential Bobolink area has eliminated suitable meadow habitat through removal of suitable height grassland vegetation and the infestation of the site by weeds (Figure 3). Intact grassland in the northern half of the potential habitat appears to be dominated by vegetation too tall and dense (almost exclusively non-native Canary-grass (*Phalaris arundinacea*)) for successful occupation by Bobolink.


Figure 3

The remainder of the Cornwall Business Park Study Area appears to be unsuitable for Bobolink, being covered by scrubby woodland, wooded wetland and/ or sparse meadows regenerating from past agricultural activity.

It is worth noting that two territorial male Bobolinks were noted on 16 and 17 June 2011 immediately east of the Cornwall Business Park Study Area, south of the western end of Industrial Park Drive. Both birds remained within or immediately adjacent to small 'glades' of shorter grass and herbaceous vegetation within the extensive, homogenous stand of tall, dense Canary-grass (*Phalaris arundinacea*) that covers the landdscape south of Industrial Park Drive. These two small areas of suitable habitat are apparently being overwhelmed by the invasive Canary-grass.

Conclusions

Bobolink no longer occur in the Cornwall Business Park Study Area. There appears to be little potential for them to occupy the degraded grassland and scrub habitat that remains here. The small population noted east of the study area appears to be occupying marginal habitat that soon will be eliminated by the growth on non-native vegetation in this abandoned agricultural land.

Daniel F. Brunton

Daniel F. Brunton

Appendix C

Stage 1 Archaeological Background Study

Stage 1 Archaeological Background Study

City of Cornwall Business Park Master Plan
Lots A to C and 1 to 6 in the 2nd Concession
Geographic Township of Cornwall
City of Cornwall, Stormont County

Original Report

144 Upper Turriff Road, L'Amable, Ontario K0L 2L0 - tel.: (705) 201-1066 - fax: 866-231-6071 - info@centralarchaeology.ca

www.central .ca

Stage 1 Archaeological Background Study
City of Cornwall Business Park Master Plan
Lots A to C and 1 to 6 in the 2nd Concession
Geographic Township of Cornwall
City of Cornwall, Stormont County

Original Report

Prepared for:

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Licence No. P272-197-2011
January 31, 2012

ORIGINAL REPORT

Distribution: Chris Miller, GENIVAR
Ministry of Tourism, Culture and Sport

Bringing the past to the present for the future

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Laura McRae

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Laura McRae

Acknowledgements

The Central Archaeology Group would like to extend their gratitude to the following individuals and parties.

- Chris Miller, GENIVAR.
- The staff at the Stormont County Land Registry, Cornwall.
- The Geomatics Institute at Sir Sandford Fleming College Frost Campus, Lindsay.
- The staff at the National Air Photo LIbrary, Ottawa.
- The staff at the Trent University Maps and Geospatial Resources section of the Thomas J. Bata Library, Peterborough.
- Robert von Bitter, Ontario Ministry of Tourism, Culture and Sport.

Executive Summary

Described within this report are the details of an archaeological assessment conducted for the proposed future expansion of the Cornwall Business Park. The project site area is comprised of approximately 260 hectares and is located within the southeastern corner of Stormont County, within the City of Cornwall limits. The purpose of this study is to provide a baseline level of information and to determine the potential for extant archaeological resources within the subject property. The information presented within this report is intended to inform future planning decisions regarding the study area. The assessment is being conducted under the *Environmental Assessment Act.*

As an initial requirement of land use planning and development, the Ontario Ministry of Tourism, Culture and Sport has legislated that three objectives must be met by way of a Stage 1 archaeological study. These objectives include: 1) provide information on the subject property's geography, history, previous archaeological fieldwork and current land condition; 2) evaluate the archaeological potential for the property and support recommendations for a Stage 2 survey; and, 3) recommend appropriate strategies for future assessments within the property.

Therefore, the main purpose of the Stage 1 assessment is to investigate the cultural land use, archaeological history and the present conditions of the property. The majority of this process is background research conducted in the company office and other libraries and involves the examination of records such as historic settlement maps, land titles and documents, historical land use and ownership records, primary and secondary sources and the Ministry of Tourism, Culture and Sport's archaeological sites database. The Stage 1 archaeological background study will consequently outline the First Nations pre-contact and historic settlement record for the area and the potential for the discovery of archaeological sites within the project area. Based on background research, the study establishes potential for the discovery of significant archaeological sites, particularly in the immediate vicinity of historic settlement areas, lakes, rivers and streams.

Permission to access the area and to carry out the activities necessary for the completion of the Stage 1 and Stage 2 archaeological assessment was granted by Chris Miller with GENIVAR. Based on the results of this Stage 1 archaeological background study, the following recommendations are provided for consideration to the Ontario Ministry of Tourism, Culture and Sport and GENIVAR, and are subject to approval by the Ontario Ministry of Tourism, Culture and Sport:

1) Areas that have been identified as having moderate to high potential undergo a Stage 2 test pit survey, where shovel-sized test pits, no smaller than 30 cm in diameter, be excavated into the first 5 cm of subsoil to examine for stratigraphy, cultural features, or

evidence of fill at 5 m intervals. Soil should be screened through mesh no greater than 6 mm and all test pits should be backfilled.

This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act,* R.S.O. 1990, C. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

It is an offense under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Report referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act.* The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Cemeteries Act,* R.S.O. 1990 C. 4 and the *Funeral, Burial and Cremation services Act,* 2002, S.O. 2002, C. 33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

The licensee shall hold the archaeological collections, including copies of the study material and original notes generated during the course of research, in trust, unless it is transferred to an appropriate public institution as per the terms and conditions of holding a professional license.

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Project Context

Introduction.

The *Ontario Heritage Act* makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Our archaeological assessment work is part of an environmental review which is intended to identify areas of heritage interest as specified in the *Provincial Policy Statement.* Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2. of the *Provincial Policy Statement*:

> "*development* and *site alteration* shall only be permitted on lands containing *archaeological resources* or *areas of archaeological potential* if the *significant archaeological resources* have been conserved by removal and documentation, or by preservation on site. Where *significant archaeological resources* must be preserved on site, only *development* and *site alteration* which maintain the heritage integrity of the site may be permitted." (emphasis in the original)

The purpose of a Stage 1 background study is to determine if there is potential for cultural resources to be found on lands for which a change in land use or construction in pending. Determining *archaeological potential* during this initial assessment establishes the need for a Stage 2 field assessment involving the search for archaeological sites.

Archaeological potential in this report is determined by examining the Ministry of Tourism, Culture and Sport's archaeological sites database for a radius of one kilometre around the project area, both recent and historical topographic maps, historic settlement maps, the presence of nearby commemorative plaques or monuments, reports of previous archaeological fieldwork within a five kilometre radius of the project area, recent and historical aerial photographs, geotechnical studies, title deeds and land registry documents, historical land use and ownership records and primary and secondary historical document sources.

Background research for the Stage 1 background study was undertaken at the National Air Photo Library, the Trent University Maps and Geospatial Resources section of the Thomas J. Bata Library, the Trent University Thomas J. Bata Library, the Ontario Land Registry Office for Stormont County, the Geomatics Institute at Sir Sandford Fleming College campus in Lindsay and The Central Archaeology Group Inc. reference library.

Section 7.2.3 of the standards and guidelines formulated by the Ministry of Tourism, Culture and Sport (2011:115) states the following standard with respect to the reporting requirements for archaeological assessments: "The final report must be filed in the form and manner as specified by the ministry in Section 7.5." Section 7.5.1 of the standards and guidelines

(2011:121) further states the following standard with respect to the reporting requirements for archaeological assessments: “All project reports must contain the sections listed in the first column of Table 7.1. “The present report conforms in all respects to the reporting requirements of the 2011 standards and guidelines.

Section 7.5.5 of the standards and guidelines formulated by the Ministry of Tourism, Culture and Sport (2011:124) requires that the *Project Context* section of each report includes the context for the archaeological investigations and that it cover three main areas: development context; historical context; and archaeological context. They are covered in the three subsections of this section of the report that are presented below.

Development Context.

The information contained in this section of the report is being presented to satisfy the standards that are set in Section 7.5.6.1, 7.5.6.2 and 7.5.6.3 of the standards and guidelines formulated by the Ministry of Tourism, Culture and Sport (2011:124-125).

The Central Archaeology Group Inc. was retained by Chris Miller, GENIVAR, on behalf of the City of Cornwall to undertake a Stage 1 archaeological assessment Lots A to C and 1 to 6, Concession 2 in the Geographic Township of Cornwall, Stormont County (Plan 1; Map 1). The property is approximately 260 hectares and is situated in the southeastern corner of the County. It is bounded to the north by Highway 401, to the east by the Walmart Distribution Centre, to the south by Cedar Rapids Hydro Corridor to the abandoned railway line to the CNR Railway Line and to the west by lands adjacent to the residential/commercial area along McConnell Avenue. The assessment was triggered during the planning stage of development and is being undertaken under the *Environmental Assessment Act.*

The overall purpose of this study is to provide a baseline level of information and to determine the potential for extant archaeological resources within the subject property. The information collected and presented within this report is intended to inform future planning decisions regarding the study area.

The standard concerning permission for access that is specified in the standards and guidelines is as follows: *Provide statements that the landowner or landowner’s representative (e.g. planner, engineer, lawyer) gave permission for the licensee to access the property to conduct all required archaeological fieldwork activities, including the recovery of artifacts, and state any limits placed on access (e.g. time limits, refusal of access to portions of property)* (MTCS 2011:125). Permission for access to conduct the archaeological survey and to removed and curate any artifacts that might be discovered was granted by Chris Miller, GENIVAR. Conditions for the site inspections were ideal with partly cloudy skies and a temperature of between 13.8 and 15.2^{o}C.

The archaeological assessment was undertaken in accordance with the requirements of the Ontario Heritage Act (R.S.O. 1990), the Environmental Assessment Act (R.S.O. 1990), the Standards and Guidelines for Consultant Archaeologists (2011) and the Planning Act (R.S.O. 1990). All archaeological consulting activities were performed under the Professional Archaeological License of Derek Paauw (P272). The Ontario Ministry of Tourism, Culture and Sport has designated this assessment as PIF P272-197-2011.

All records pertaining to this project area currently housed in the corporate office of The Central Archaeology Group Inc. in L'Amable, Ontario.

Historical Context.

Under the current standards and guidelines, the required standard outlined in Section 7.5.7.2 for the *Historical Context* portion of this report should include statement/s concerning the rationale for fieldwork strategies (MTCS 2011:125). Fieldwork strategies are provided at the end of the *Historical Context* section. The purpose is to confirm the presence or absence of archaeological remains and, if archaeological remains were determined to be present, to determine if they showed heritage value as defined in Table 3.2 of the standards and guidelines (2011:60-61).

In order to competently provide rationale for this requirement, archival research was conducted into the past and present land-use and settlement history of the project area as required by Section 7.5.7.1 of the standards and guidelines (2011:125). This section of the report therefore contains brief summaries of the environmental setting and changes over time and the pre-contact and historic First Nations and Euro-Canadian histories represented in the history of the area.

Environmental Setting. The assessment of physical and environmental conditions of a region is important to analyzing past human settlement behavior and interpreting features and site patterns on the landscape. The cultural development of every society is strongly influenced by the surrounding natural environment which provides a finite set of resources which humans use to fulfill a variety of needs. Geomorphology, soils, water sources, climate, and vegetation of the study area are significant factors in understanding patterns in the landscape. Changes in the landscape over time may have an influence on the types of materials found during an assessment and subsequent visibility.

Location. Stormont County is located in eastern Ontario and is bounded to the north by Prescott County, to the west by Glengarry County, to the south by the St. Lawrence Seaway, to the west by Dundas County, and to the northwest by Russell County. The Geographic Township of Cornwall is located within the southeastern portion of Stormont County and encompasses one large urban centre, a number of small villages, and a heavily populated rural region. The study area is located approximately 3,550 metres northwest of the St. Lawrence River (Image 1). It is situated at between 56 and 59 metres above sea level (a.s.l.).

The closest First Nation to the project area is the Akwesasne First Nation No. 59, approximately 4,005 metres to the southeast. Of Mohawk descent, this community is unique in that the Territory crosses the International Border between Canada and the USA.

Geomorphology. The property lies within the Lancaster Flats physiographic region, a region characterized by extremely flat land and relatively poor drainage. The till deposits common to the Glengarry Till Plain, located to the north, are buried beneath water-laid deposits leaving exposed the tops of drumlins and ridges (Chapman and Putnam 1973:353). These materials range from clay to very fine sand. This region encompasses an area approximately 414.4 km^2 and extends into the province of Québec. The majority of this physiographic region is present within Glengarry County to the east.

Of particular interest to the study area is the inundation of the area by the Champlain Sea following the glacial melting and retreat. The Champlain Sea existed for a short time as a temporary inlet for the Atlantic Ocean, between the end of the last ice age until approximately 10,000 BP. Although the maximum extent of the marine inundation is not yet known in specific terms, it has been posited that its limits would have extended to the clay beds found within Leeds County, just east of the Precambrian Shield (Chapman and Putnam 1973:117; Karrow 1961:99). The geology present today in this area represents the deposits of the shrinking sea as it retreated across the landscape during isostatic rebound of the North American landmass.

Physiography. The project area is located within the Mixed Wood Plains ecozone (Map 2). According to Natural Resources Canada (2011) the Mixed Wood Plains can be characterized by the following description:

> ... topography ranges from extremely flat areas in the southwest and southeast to rugged terrain of the Niagara Escarpment. Vegetation is diverse, characterized by mixed deciduous-evergreen forests and tolerant hardwood forests including those forests known as Carolinian forests. Alvars and tallgrass prairies also occur. Wetlands are numerous in certain areas, although many wetlands have been drained. Carolinian Canada (the most southerly portion of this ecozone) boasts the highest concentration of species in Canada. The number of species at risk is also high.

Soils. Soil, in terms of its morphological characteristics, is defined as unconsolidated surface material forming “natural bodies” made up of mineral and organic materials and the living matter within them. The formation of soils is heavily influenced by its parent material, climate, vegetation, drainage and time; it is a dynamic entity with material continually and simultaneously added, removed and transformed (Leahey 1961:148). However, it is mainly the combined effects of climate and living matter that convert a material to a soil. For example, in temperate rainy environs, moisture and dense vegetation may lead to deep, richly organic soils. In deserts, with a lack of moisture and subsequent vegetation, soils may be thin and remain highly mineral. Human disturbances, such as dwelling, agricultural practices, grave sites and garbage dumps may also affect soils, giving them other unique characteristics.

The soils of the project area include Allendale sandy loam (Asl), Mountain sandy loam (Msl), Muck (M), Belmeade muck (Bm), Eamer loam (El) and Bottomlands (BL) (Map 3; Table 1). Allendale sandy loam is a dark grey gleisol (Matthews and Richards 1954). These soils consist of sand and are medium textured, lacustrine materials usually found in areas of imperfect drainage. They are found on slightly undulating topography and are relatively stone free. Allendale series soils can only be used for agriculture if drainage is improved and fertilization is augmented with the introduction of phosphorus and potash (Chapman and Putnam 1973:436; Matthews and Richards 1954).

Mountain sandy loam is a brown podzolic soil which developed on outwash material underlain by lacustrine clay. Very similar to Manotick sandy loam, Mountain sandy loam differs in that it has imperfect drainage (Matthews and Richards 1954). It is found on slightly undulating topography and if drainage can be perfected, the soil can be used for general farming and some small specialized crops.

Muck soils, part of the Gleysol Great Group, consist of 40 cm or more of organic material over mineral layers. The organic materials in muck soils are only partially decomposed, as a result of the constant state of wetness, and are very black in colour. These soils are not used for agriculture and support balsam, maple, ash, cedar, black spruce, and tamarack trees along with a variety of swamp/marshland-type vegetation (Matthews and Richards 1954).

Belmeade muck is a very poorly drained soil. Situated on depressional topography, these soils are part of the Bog Great Group and usually consist of between 0 to 15 cm organic matter underlain with a grey clay of plastic consistency. In some instances, this soil has been reclaimed for agricultural purposes (Matthews and Richards 1954:50).

Eamer loam (El) soils developed on loamy, calcareous glacial till deposits. They are characterized by rolling topography and stony to excessively stoney material (Matthews and Richards 1954:34). This well-drained, brown forest soil is distinguished by its thin profile over limestone bedrock. Usually considered too thin to be of agricultural use, they have good pasture potential.

Bottomlands occur in low-lying land present along stream and river courses. As it is subject to periodic/seasonal flooding, it is a fertile, alluvial soil, well-used for farming, particularly as pasture.

Table 1. Soil characteristics of the project area.

Soil Type	Parent Material	Drainage	Texture	Relief	Great Group
Allendale sandy loam (Asl)		poor	stonefree	level to depressional	Dark Grey Gleisolic
Mountain sandy loam (Msl)		imperfect	stonefree	slightly undulating	Brown Podzolic
Muck (M)		very poor	stonefree	depressional	Bog
Belmeade muck (Bm)		very poor	stonefree	level to depressional	Bog
Eamer loam (El)		good	moderately stony to bouldery	gently undulating	Brown Forest
Bottomlands (BL)		variable	variable	variable	Azonal Alluvial

Historical Forest Patterns. The last ice age completed disturbed vegetation patterns throughout Ontario. However, deglaciation initiated plant recolonization. As vegetation migrated northwards with the receding glacial front, different species populated the ice free margins. However, the process of recolonization depended on the production rates of different species and their ability to grow on freshly exposed terrain which may have reduced pH levels (Matthews 1992:122). Initially, following the retreat of the glacial ice across Northern Ontario, species more common to tundra-like environments grew, followed by spruce woodlands. Pine dominated these woodlands, especially during he Hypsithermal period (approximately 5.0 ka). Warming temperatures encouraged coniferous growth like pine and hemlock and modern vegetation patterns emerged between 2.5 ka and 3.0 ka.

The forests of this region, before it was stripped and forever altered by Euro-Canadian farmers, lumbermen and settlers, consisted of relatively dense forests interspersed with open park-like woodland. Referred to as the Southeastern Mixed Forest, it is located within the Great Lakes-St. Lawrence Forest Region (Map 4), and is dominated by sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), American basswood (*Tilia americana*), yellow birch (*Betula lutea*), eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), red maple (*Acer rubrum*) and white ash (*Fraxinus americana*) on upland surfaces (Dean 1994:12; Kershaw 2001). Dryer stretches of land commonly exhibited white spruce (*Picea glauca*), which replaced the red and white pine (*Pinus resinosa* and *Pinus strobus*). Over thin soils and on high ground, species more representative of a Boreal Forest persisted. Species common to a Boreal environment include: white spruce and black spruce (*Picea mariana*), interspersed with balsam fir (*Abies balsamea*), scrubby stands of jack pine (*Pinus banksiana*), trembling aspen (*Populus tremuloides*), red oak (*Quercus borealis*) and paper birch (*Betula papyrifera*) (Dean 1994:12).

Modern arboreal vegetation patterns reflect two centuries of logging and land clearance, and the large numbers of balsam poplar (*Populus balsamifera*), black spruce, tamarack (*Larix laricina*), eastern hemlock, eastern white pine, red pine, eastern white cedar (*Thuja occidentalis*), American elm (*Ulmus americana*), American beech, paper birch, large-toothed aspen (*Populus grandidentata*), trembling aspen, pin cherry (*Prunus pensylvanica*), staghorn sumac (*Rhus typhina*), American basswood, sugar maple, mountain maple (*Acer spicatum*), and white ash found today are the result of disruption to the natural, mature hardwood forests indigenous to the drumlinized till plains of southern Ontario (Kershaw 2001).

Ontario wildflowers such as common yarrow (*Achillea millefolium*), wild bergamot (*Monarda fistulosa*), white aster (*Solidago ptarmicoides*), purple loosestrife (*Lythrum salicaria*), oxeye daisy (*Leucanthemum vulgare*) and Canada thistle (*Cirsium arvense*) were present within the subject property (Kershaw 2002). Grasses present included bottle-brush grass (*Hystrix patula*), sweet vernal grass (*Anthoxanthum odoratum*), foxtail (*Alopersurus ssp.*), common plantain (*Plantago major*) and crab grass (*Digitaria sanguinlis*) (Brown 1979). Shrubs included ground hemlock (*Taxus canadensis*), sweet fern (*Comptonia peregrina*) and beaked hazel (*Corylus cornuta*) (Soper and Heimburger 1994). These vegetation types are characteristically found within areas where the mature forest patterns have become disrupted by lumbering, accidental forest fires, and land clearance that began in the project area during the early nineteenth century and continues to this day.

Water Sources. There were many stages of glacial and post-glacial lakes that covered Ontario during advancement of the Laurentide Ice Sheet and subsequent isostatic rebound following glacial recession at the end of the Pleistocene Period. This was due, in part, to blockage of drainage outlets by ice dams. Consequently, substantial areas were inundated by the copious flow of meltwaters at levels well above modern lakes and rivers. As these glacial water sources drained, the zone created could have supported an extensive variety of animal, insect, bird, and vegetation species. Resource exploitation of this zone by early peoples is supported by the discovery of Archaic period archaeological sites along the edges of ancient shorelines (palaeo-shorelines).

Now located within eastern Ontario and within the Atlantic Ocean watershed, the project area is drained via a number of waterways which were formed during the recession of the Laurentide Ice Sheet (Map 5). Present within, or within close vicinity to the project area are lakes (i.e., Lake Dalrymple Young Lake, Lake Simcoe, Duck Lake, Brush Lake, Cranberry Lake), rivers (i.e., Head River, Cranberry River, Black River, Talbot River), creeks and streams (i.e., Deverells Creek, Perch Creek) and a number of low-lying and wet areas identified as marsh or swamp.

Climate. Modern climatic variation depends almost entirely upon location and human impacts on the environment. Stormont County, located in eastern Ontario, is heavily influenced by the St. Lawrence and Adirondack Mountains to the south and to a lesser degree by the Great Lakes. This environment tends to add moisture to the air int he autumn and winter in conjunction with protecting the region from the worst of the cold during the winter months, and during the spring and summer they act to moderate the temperature of the region.

First Nations Cultural Summary. *Palaeoamerican Period*. The Palaeoamerican Period represents the arrival of First Nations groups in Ontario around 11,500 years ago following the retreat of the Laurentide ice sheets that covered most of Canada and the northern United States beginning approximately 95,000 years ago. Although there is considerable debate about whether the Palaeoamerican people were the first to cross into the Americas from Asia via Beringia, they are most likely the first culture to inhabit Ontario (Adovasio 2003). The Palaeoamerican Period is represented by two distinct cultures based on the use of different tools. The Clovis culture comprised the early part of the Palaeoamerican Period, whereas the Plano culture occupied the latter half.

The Clovis culture is defined by distinctively fluted and chipped stone projectile points that are generally lance-shaped or lanceolate. These points lack notches or stems but have a concave base with grinding present on the lower side edges. Although it is certain that these points were used as projectiles based on evidence of distinctive tip damage, it is unknown whether they were hafted onto long shafts and used as a thrusting spear or in combination with an atlatl or spear-thrower.

Plano projectile points differ in that they lack the Clovis flute but exhibit fine ripple flaking that is distinctive of the latter half of the Palaeoamerican Period. A number of sites dating to approximately 9,000 years ago have been found along the north shore of Lake Superior and on Manitoulin Island. High quality siliceous stone quarries exploited by Plano people have also been found along the shore of Lake Huron.

The Clovis and Plano cultures likely shared similar subsistence strategies. They hunted migrating herds of caribou along the shores of glacial lakes that appeared as the massive ice sheets receded. They also hunted large mammals such as mammoth and mastadon. Palaeoamericans groups likely hunted smaller mammals and fish as well, and gathered wild fruits and berries.

Palaeoamerican occupations in the Upper St. Lawrence River Valley, and in general, are difficult to define due to small group size, frequent migrations, and overall antiquity. The limited remains from most Palaeoamerican camp sites have tended to discourage systematic excavation beyond habitation and major kill sites. Evidence of Palaeoamerican occupation in the general project area comes from a few finds in the Napanee Valley, Cornwall, and the Rideau Lakes region. Mason (1981) noted a site near Cornwall that produced Plano type points.

Archaic Period. Solid evidence of the beginning of the Archaic Period in Ontario dates to about 4,000 BCE with the advent of the Laurentian Archaic. The early Archaic culture likely evolved from the Palaeoamerican Period. However, it is possible that as more people migrated into the region, there was an introduction of new ideas and technology. The elaborately manufactured points representative of the Palaeoamerican Period were abandoned in favour of more crude manufacturing techniques but with a greater variety of stone being exploited. This likely represents a change in the types of flora and fauna available for consumption. There is certainly a shift in subsistence practices by early Archaic groups from long seasonal migration movements to a focus on regionally available food sources.

The Archaic Period also represents a technological shift in the methods used in the manufacturing of stone tools with the introduction of grinding and pecking. A wide variety of axe forms are introduced, indicating a shift from a more sub-arctic environment to a temperate climate. It was also during the Archaic Period that the atlatl superseded the use of handheld thrusting spears predominately used during the Palaeoamerican Period. Elaborately polished and decorated stone tools believed to be atlatl counterweights appear in the archaeological record. Archaic people were also producing tools and ornaments manufactured from native copper found along the north shore of Lake Superior.

While the Palaeoamerican and early Archaic origins of the Upper St. Lawrence culture are poorly defined, a widespread and distinctive Laurentian Archaic tradition is evident by 4,000 BCE thanks to increased archaeological visibility with cultural elaboration and population growth following the trend to a more broadly based subsistence pattern (Mason 1981). A number of finds dating to the Archaic Period have been found near Cornwall, including a point recovered from a ploughed field suspected to date to the period on typological grounds (Wright 2004:95) and a site near Brockville discovered very early (Reynolds 1856) consisting of several burial with chipped stone, ground stone, and copper implements. Investigations into Archaic Period sites in the Lake St. Francis expansion of the St. Lawrence River, east of Cornwall, uncovered projectile points very similar to those found at the John's Bridge site in northwestern Vermont, suggesting a wide distribution of that particular Middle Archaic assemblage (Wright 2004:80).

Woodland Period. The Woodland Period in Ontario is marked by the introduction of pottery during the Early Woodland Period around 900 BCE. Although Early Woodland groups in Ontario began using pottery, there was little change from the Late Archaic Period. However, they seem to have been in close contact with the Ohio Valley, evident from the appearance of Adena-like material found in burial contexts.

The Middle Woodland Period is defined by a shift in the style and shapes of tools and materials chose in manufacture. There is also evidence of group identification with marked differences in tool styles from various regions of Ontario. Middle Woodland pottery vessels tend to have conical bases and are manufactured using the coil method and decorated with various stamps and incised motifs. In northern Ontario this culture tradition is referred to as Laurel, in eastern and south-central Ontario, Point Peninsula, and in southwestern Ontario, Saugeen. There is also a shift in seasonal subsistence patterns, where from the spring to autumn, groups tend to congregate at the mouths of rivers and lakeshores to fish, collect shellfish, and hunt. As the temperature decreased with the onset of winter, these groups would disband into smaller family units and return to the interior to hunt.

The Late Woodland Period is usually defined by the large-scale use of cultigens, such as maize, beans, squash, and to some degree, sunflowers and tobacco. Maize appears in Ontario sometime after 500 BCE, but is not widely adopted until approximately 900 CE. This transition is marked by dramatic socio-economic and technological changes. A matrilineal clan system emerged, longhouses were constructed (multi-family) and the coil method of pottery manufacture is largely abandoned for the use of the paddle-and-anvil method and decoration by cord-wrapped stick. Although seasonal fishing and hunting camps continue to be used, larger, more permanent settlements are constructed near agricultural fields. Hostilities often erupted between groups, evident from the number of stockades and ditch defences by 1,000 CE.

A number of archaeological finds dating to the Woodland Period have been made in the area near Cornwall. Extensive excavations at Pointe-du-Buisson on Île de Salaberry between Cornwall and Montréal have provided a great deal of information relevant to Early to Middle Woodland occupation of the Upper St. Lawrence Valley. Belonging to the Early Woodland Meadowwood complex, sites of which have been found throughout southern Ontario, adjacent parts of New York, and southern Québec, Point-du-Buisson 5 is a cemetery of four burial pits covered by stones with various grave goods; Pointe-du-Buisson 4 is the nearby habitation site, probably for occasional brief occupations of Meadowwood hunters and gatherers while they buried their dead (Spence et al. 1990:141). Two excavated mounds on Long Sault Island near Cornwall can also be identified as Early Woodland, though belonging to the Middlesex Complex which is less well-known in Ontario.

Although multi-component with occupations from the Middle Archaic through the Late Woodland, the dominant component of the Ault Park site on Sheek Island, a few kilometres west of Cornwall, is from the Middle Woodland Point Peninsula complex. Point Peninsula occurred in south-central and eastern Ontario and extended into southern Québec and northern New York State. Ault Park was a large spring-summer macroband site perched on bluffs overlooking major rapids, so oriented for the intensive exploitation of spawning fish (Spence et al. 1990:168). A Point Peninsula component is also present at the abovementioned Pointe-du-Buisson site, which was similarly located for the same purpose.

Of particular importance during the Late Woodland Period is the materialization of regional identities. Nations such as the Neutral, Petun, Huron-Wendat, Iroquois, Wenro, Erie, Susquehannock and, most important to this discussion, the St. Lawrence Iroquois, emerge. They are identified archaeologically by stylistic and typological differences illustrated in their material culture (particularly pottery) excavated by archaeologists.

St. Lawrence Iroquois. Material culture recognized as belonging to this culture group is most commonly identified through pottery: either pots with little or no collar with simple motifs or pots with well-demarcated collars decorated with complex motifs of parallel incised lines and chevrons. Complex motifs are often beautifully done with circular reed punctates, ladder designs or corn ear styles.

From his seminal work on three sites, the Salem, Grays Creek and Beckstead sites, Pendergast (1966) identified four main categories: Type A is described as incised chevron and punctate circles on overhanging castellations; Type B decoration, while similar to A, is applied using a dentate stamp or dentate stamps and incised lines; Type C vessels are low-collared or collarless with dentate, corded, ovoid or rectangular stamp decoration at the top and; Type D are crude vessels with low, channeled convex collars decorate with horizontal or oblique lines of chevrons.

St. Lawrence Iroquois sites tend to be comprised of either large villages situated in the interior or small, special purpose occupations such as fishing stations, located on the St. Lawrence and other major waterways in the valley. One such special purpose site is located near present-day Morrisburg. A fishing camp, the Steward site is comprised of two longhouses with internal house-pit features and a deeply stratified midden. The Glenbrook site, located on the South Raisin River, is between two to three acres in size and is one of sites in the Summerstown Cluster of St. Lawrence Iroquois village sites (cluster includes the

Summerstown Station site, the Salem site, the Sugarbush site, the Grays Creek site, and the MacDougall site).

The St. Lawrence Iroquois have the distinction of being the first Iroquoian nation to encounter Jacques Cartier in 1534 in the Gaspé and Cartier has the distinction of being the first and last European to encounter the St. Lawrence Iroquois before they disappeared. Few historical accounts exist beyond those written by Cartier during his voyages in the sixteenth century. Among the villages that he encountered during his journeys, from east to west, *Ajoaste* (possibly on the Cap Tourmente plain), *Starnatan* (near Sainte-Anne-de-Beaupré), *Tailla* (on a mountain, perhaps near Château-Richer), *Sitadin* (near Beauport), *Stadacona* (Québec City), *Tequenonday* (near Cap Rouge, on a mountain), *Achelay* (near Portneuf) and *Hochelaga* (the large, fortified settlement at the foot of Mount Royal). By the time Champlain returned to the St. Lawrence Valley, the St. Lawrence Iroquois had vanished. Many theories exist to explain this phenomenon, the most widely accepted being that they succumbed to European disease and warfare. Although both hypotheses are based on inference, there is no doubt that exposure to European diseases took a heavy tool on indigenous populations of the Americas (i.e., the epidemics that decimated the Huron in the 1600s) and that warfare commonly accompanied trade.

The Mohawk Nation of Akwesasne. The following description is a summary of Aren Akweks discussion on the migration of the Mohawks from the banks of the Mohawk River to their current home in Akwesasne (1948:23-27). This account expands on the brief synopsis provided at the beginning of this section and is largely based on oral history.

The St. Regis Mohawk, People of the Flint, once lived along the banks of the Mohawk River in New York State. Their land was covered with large, dense forests and they lived in long bark homes. Their land, situated at the top centre of a giant turtle's back, was the centre of the world. Water flowed in all directions from this location, north, south, east, and west. The main clans of the Mohawks were the Bear Clan, the Turtle Clan, and the Wolf Clan.

The main Mohawk villages were located at strategic points along the Mohawk River; Te-uge-ga was located at the mouth of the West Canada Creek; Sko-har-le was situated near the outlet of the Schoharie Creek; Ta-la-que-ga was near Little Falls; and Ga-ha-oose was positioned near Cohoes. In these locations were many animals to hunt, fish to catch, and birds to snare. The People practiced agriculture and grew fields of corn, beans, and squash. They also warred against one another.

Great men, Deganawida and Hayowentha, wanted to stop the fighting and bloodshed between the Nations and asked the Creator to assist them in this task. They planted the tree of peace and spoke at many council fires; People of the Great Mountain (Senecas), People of the Mucklands (Cayugas), People of the Hills (Onondagas), People of the Upright Stone (Oneidas), and People of the Flint (Mohawks). For five years they spoke and the men of the Five Nations began to listen.

The Five Nations came together for a great council, they made peace and smoked the Pipe of Friendship. They wore a sacred wampum belt, the belt of peace, its design representing a chain of four links with a white tree at its the heart. The Five Nations were now as One.

They compared their league to that of a long house. The Mohawks were the Keepers of the Eastern Door of the Long House, the Senecas were the Keepers of the Western Door of the Long House, the Onondagas, in the centre, were the Keepers of the Council Fire. However, soon after peace was declared, a cloud of darkness descended upon the Ho-de-no-sau-ne, the People of the Long House.

From across the great salt water came the white man, the French and the English. They desired furs and the lands of the Five Nations. They gave the Iroquois guns, tomahawks, and firewater for beaver skins. Their duplicitous nature offered in one hand the hand of friendship, and in the other the rattlesnake whose bite was poison and death.

Both French and English, desiring the whole of the fur trade, talked various Nations into making war against their rivals and to those Nations who brought furs to their rivals. Most of the Iroquois sided with the English and easily defeated the French and their allies.

The Jesuit missionaries (Black Robes) came and persuaded many Iroquois to migrate to Canada. They founded a new community on the St. Lawrence River and named it Caughnawaga. On the other side of the river was the French town of Montreal. Once again, wars followed and forgotten were the words of the two wise prophets, Deganawida and Hayowentha, as blood fought against blood.

After the war, traders from Montreal would cross the river and bring with them firewater. The missionaries tried to stem this evil influence and moved the People many times. Diseases such as smallpox, measles, and whooping cough began to appear amongst the communities. The elders and the Jesuit Fathers agreed that they must vacate their homes and leave the evil across the river. Consequently, they packed their homes and possessions and headed up the St. Lawrence.

A location was found where many small rivers flowed into the St. Lawrence River, where the soil was fertile, and where there was good hunting and fishing. They were alone and away from the harm generated by outside influences. A church was erected on a point of land that extended into the river. Around the church they built their homes. They called their new land, Akwesasne, or Place Where the Partridge Drums.

Euro-Canadian Cultural Summary. *Contact Period*. Beginning in the early seventeenth century with the French, explorers such as Samuel de Champlain and Étienne Brûlé, encountered groups of people speaking an Algonquian language along the Ottawa River Valley. These were the Weskarini, Onotchataronon, Kichesipirini, Matouweskarini, and Otaguotouemin Algonquians (Trigger 1976:279). The loosely aligned First Nations groups subsisted by hunting, fishing, and gathering, and undertook limited horticulture. Champlain first met the Algonquians in 1603 at the trading centre of Tadoussac near the mouth of the St. Lawrence River (Hessel 1993:14). Searching for the Northwest Passage in 1613, Champlain entered Algonquin territory and explored the Ottawa Valley as far north as Morrison's and Allumette Islands. The main body of the Kichesipirini lived on Morrison's Island and controlled the portages at the base of Allumette Lake. From their strategic location, the Kichesipirini collected tolls from all French trade to and from the interior nations such as the Nipissing, Huron, Ottawa, and Ojibway (Hessel 1993; Trigger 1976). Since at least the late sixteenth century, the Algonquin groups were at war with the Mohawk Iroquois, the easternmost group of the Five Nations Iroquois over control of the upper St. Lawrence trade routes.

By the mid-seventeenth century, the French traders and missionaries began to resent the Algonquin self-proclaimed role as middlemen along the Ottawa River. This soon resulted in adversarial relations between the Algonquin leaders and the French colonial officials. The endemic warfare of the age, and severe smallpox epidemics in 1623-1624, and again between 1634 and 1640, brought about drastic population decline among the Algonquin peoples (Hessel 1993). The French unwillingness to provide military support to the Algonquin against their mutual enemy, the Mohawk, led to the defeat and dispersal of the known Algonquian bands by the Five Nations Iroquois between 1640 and 1650 (Trigger 1976:610, 637-638). Survivors of the various bands coalesced as a single First Nation people to the north of the Ottawa Valley, and at the French posts of Montréal, Sillery, and Trois-Rivières.

Following the dispersal of the Ontario Iroquois and the Ottawa Valley Algonquin, the Five Nations of New York State (Mohawk, Oneida, Onondaga, Cayuga, and Seneca) eventually occupied a series of winter hunting bases and trading settlements near the mouths of the major rivers flowing into the north shore of Lake Ontario (Konrad 1981). The first recorded Five Nations settlement to relocate northward were two Cayuga villages established at the northeastern end of Lake Ontario. Two French Sulpician missionaries joined the Cayuga in 1668 at their settlement known as Kente, now Carrying Place, near the narrows separating the western end of Prince Edward County from the Hastings County mainland. A second Cayuga settlement, known as Ganneious, may have been near the mouth of the Napanee River, or further south on the Bay of Quinte (Edwards 1984:10). As a results of increased tensions between the Five Nations and the French, and a declining population from disease and warfare, the Cayuga settlements were abandoned in 1680 (Edwards 1984:17).

Euro-Canadian Settlement. Following the American Revolutionary War (1775-1783), the British government encouraged disbanded and discharged soldiers as well as families and individuals loyal to the Crown, to re-settle their families in English territory (Belden 1879:5). Stormont and Dundas Counties, as well as New Johnston (now the City of Cornwall) were settled by the King's Royal Regiment of New York (the Royal Yorkers) and their families, and Glengarry County was settled by Highland Scotch Catholics (Belden 1879:5; Harkness 1946:42-45).

Stormont and Dundas Counties were predominantly settled by former soldiers from the Valley of the Mohawk in New York State. The majority of these settlers were German immigrants who had settled in America before the American Revolutionary War, mostly on land that had been presented to the Queen by Mohawk Chiefs, when on tour of London under the guidance of Peter Schulyer and Colonel Nicholson, in 1710 (Harkness 1946:12). Having served British sovereignty during the war, in 1783 these soldiers (known as United Empire Loyalists) found themselves enemies of the victorious, and newly formed, American government and ousted from their homes. As compensation for their lost estates and property, England provided them farmland in what would become known as the Province of Upper Canada (Belden 1879:5).

Sir Frederick Haldimand, a colonial administrator, under orders from the British government, decided that the Loyalists would be settled on Crown lands west of Rivière Beaudette, beyond the western boundary of the last seigneury holding (Senior 1983:14). Sir John Johnson requested that the granted lands be laid out from the upper end of Mr. Longueuil's seigneury, as the land was reported to be rich and fertile (Senior 1983:15). The families of the soldiers marched from their homes in the Valley of the Mohawk to Whitehall and were then ferried by boat to Isle aux Noix. After spending a winter in the barracks, the Loyalists and their families traveled up the St. Lawrence via boat and arrived at Cornwall in the summer of 1784 (Belden 1879:5). The date of the first settlement at Cornwall is debated. It is reported that by the time the soldiers were disbanded in 1784 and directed to take their families to Cornwall, it had already been surveyed (Harkness 1946:42-45). However, Senior (1983:17) reports that the slowness of government surveyors to lay out the proposed townships irked Johnson and that he ordered Patrick McNiff and 26 of his own men to begin surveying the area in 1784.

Johnson traveled to Point Maligne (the site of Cornwall) and was met by chiefs and warriors from the aboriginal community of St. Regis. The land Johnson wanted surveyed was not occupied, and was considered a source of revenue for St. Regis as the French had paid them well for the timber they cut down in the area. This was the first indication that the land on the north side of the St. Lawrence, opposite that of the settlement of St. Regis, had been regarded as part of their seigneury (Senior 1983:17). The chiefs informed Johnson that papers indicating ownership of this land - from the mouth of the Raisin River six leagues (33.336 km) to a creek a little above the Long Sault - had been destroyed in a Church fire. Johnson, believing the claim as groundless, returned to Montreal to consult with Haldimand. Haldimand could find no information indicating ownership in the register of Crown lands and decided to propose that St. Regis retain a tract of land running northwards between the new townships so that they could have direct access to their Algonquin allies of La Petit Nation. Joseph Brant proposed this offer to the St. Regis inhabitants that he found "reasonable enough about the land" and assured them they would still have three miles (or a little less) of river frontage on the north bank of the St. Lawrence as a throughway to the Petit Nation River (Senior 1983:20). They were also given land south of the St. Lawrence from which they would receive rent (Senior 1983:20).

Finally, on May 6, 1784, the plans for the settlement that would become the Township of Cornwall were agreed upon; settlement would begin near the Raisin River, and what would become the City of Cornwall was situated near the St. Lawrence River. The centre of the township was quickly surveyed, laid out, and settlement commenced immediately (Senior 1983:20). By June 1784, Pointe Maligne became known as Johnson's Point.

Upon arriving in Cornwall, the soldiers of the Royal New York Regiment were greeted by recently settled Loyalists who had traveled from the Isle of Jesus and acquired lots in Cornwall via lottery. Johnson decided to go against Haldimand's wishes and allowed his officers first choice of the lands they wished to settle. This granted land consisted of 100 acres along the river and 200 acres inland. As with the date of the original settlement of Cornwall, there are discrepancies between reports of the acreage received by Loyalist settlers through lottery. Harkness (1946:45) reports that captains sometimes received in excess of 2,000 acres, lieutenants received 500 acres, and privates received 200 acres with provisions made for their offspring. It is generally conceded though, that the lottery occurred in 1784 with the result that riverfront land in the Townships of Cornwall, Osnabruck, Williamsburg, and Matilda of Stormont and Dundas Counties were simultaneously and successfully settled by a group of industrious Loyalist families and that Black Loyalists received land grants in Lake Township (Belden 1879:5; Senior 1983:41).

Before 1792, when Lieutenant-Governor Simcoe proclaimed that the Province of Upper Canada be divided into 19 counties, Stormont, Dundas, and Glengarry had been part of the District of Lunenberg (Map 6). Lunenberg was one of the four districts created from the District of Lancaster (Upper Canada) by Lord Dorchester in 1788. Stormont, Dundas and Glengarry Counties are the only three united counties in all of Ontario (Belden 1879:5).

Glengarry County is comprised of the townships of Lancaster, Charlottenburgh, Kenyon and Lochiel; Stormont County is comprised of the townships of Cornwall, Osnabruck, Finch, and Roxborough; Dundas County is comprised of Williamsburgh, Matilda, Winchester, and Mountain. These twelve townships were created when six of the eight original Royal Townships of Upper Canada (namely: Lancaster. Charlottenburgh, Cornwall, Osnabruck, Williamsburgh, and Matilda) were divided. The townships were amalgamated back into six townships in 1998 and remain part of the three united counties.

The Early Development of Cornwall Township. The original post-contact settlers of Cornwall Township were disbanded members from the First Battalion of the King's Royal Regiment of New York, or the King's "Royal Yorkers." The Yorkers had been led by Lieutenant-Colonel John Johnson during the American War of Independence. Throughout the war they had been stationed at various posts, such as Montreal, St. Anne and Lachine, from which they conducted operations into rebel territory. The families of these exiled or escaped Loyalist soldiers, many of whom originated from the Mohawk Valley, typically endured residence in encampments elsewhere, albeit in nearby communities. Although they ultimately waited for a return to their American homes, the outcome of the war necessitated their resettlement north of the Great Lakes and the St. Lawrence River.

Cornwall Township was one of eight "Royal Townships" established to this end. The Royal Townships extended from Quebec's most western Seigneury – the "Longeuil Seigneury" at Rivière Beaudette – to the mouth of the Gananoque River. Five additional townships were surveyed and settled further west, in the Kingston and Bay of Quinte area, known as the Cataraqui Townships (Map 7). The Royal Townships were first identified by their numerical designations, of which Cornwall was Number 2, and the first to be settled. Apart from the fundamental need to designate land as compensation for displaced British subjects, they were selected and surveyed with a specific military purpose in mind: should hostilities with the newly formed United States arise, the distribution of officers and their men would be strategically designed to provide a bulkwark against invasion. Soldiers and their families were actively discouraged, by the governor Frederick Haldimand, from purchasing attractive properties being offered to them in what is now the Province of Quebec.

> Disbanded military units settled together in townships. Sir John Johnson's Royal Yorkers, for example, held the first five of the Royal Townships; at the settlers' request and with Lord Dorchester's approval, they were organized according to nationality, language and religion. Catholic Highlanders [Charlottenburgh], Scottish Presbyterians [Cornwall], German Calvinists [Osnabruck], German Lutherans [Williamsburg] and Anglicans [Matilda] occupied those townships in that order. Initially, administration of justice and local government continued according to military custom under the authority of former officers. In the earliest days, some civilians even received military rank, in order to fill the offices necessary for basic administration. [Payne 2006:2]

An interesting historical note comes from Harkness' history of the United Counties: "It is said that the Scotch, many of whom were Roman Catholics [Charlottenburg], were so placed as a buffer between the French Catholics [Quebec] to the east and the German Protestants [Osnabruck, Williamsburg] to the west." [Harkness 1946:45].

While each township had its dominant national and religious character, these divisions were by no means exclusive, nor the townships homogenous. They study area, historically part of Cornwall Township, is associated with Scottish Presbyterian, as well as German Palatine Loyalists (Lutheran/Calvanist). Some of the properties are also associated with the influx of Scottish Catholic immigrants ("Highlanders"), who arrived in the area in 1786.

Following the American War of Independence, most of Southern Ontario was still a part of the Province of Quebec, whose boundaries had been extended by the Quebec Act of 1774. In 1788 four districts were carved out of its Southern Ontario portion. East to west these were the Lunenburg, Mecklenburg, Nassau and Hesse Districts. Cornwall Township was part of the Lunenburg District.

The Constitutional Act of late 1791 formally established the divisions of Upper and Lower Canada. The Lunenburg District was renamed the Eastern District (the others were renamed Midland, Home and Western, east to west) with its boundaries slightly altered, and 19 counties were created in the Province of Ontario. Three of these counties were Stormont, Dundas and Glengarry. Cornwall and Osnabruck Townships were a part of Stormont County. Whereas the new counties were political divisions based on electoral ridings, the districts were judicial in nature. The Upper Canada Act of 1792 stipulated that each district should establish a court house and jail. Cornwall, then called New Johnstown, was selected as a

judicial centre for the Eastern District.

Nearly all of the properties associated with the study area are intimately tied to the development of the Town, and later City, of Cornwall (Map 8). Until 1834 the settlement was simply an unincorporated concentration of pioneers and pioneer-descendants within the township itself. When the township was surveyed by deputy surveyor Patrick McNiff in 1784, under the direction of surveyor general Samuel Holland, plans were made for the eventual establishment of a town. But even when Cornwall was incorporated in 1834, it was administered by a board of police. Several of the study area's property owners served as regular members on this board, or as its president.

Cornwall was incorporated as a "regular" town in 1846, adopting the usual system of municipal government of the day. Again, several study area property owners served as mayor or in other capacities integral to the town's development. Indeed, it is difficult to find a study area owner, in the first half of the nineteenth century, who was not in some way connected with the development of the town, township, or county; or who served as a provincial or federal representative. The most famous of these, John Sanfield Macdonald, was co-premier of the United Province of Canada, and later served as Ontario's first premier.

Many of the prominent elite associated with the study area were educated at the local grammar school, established by the Reverend John Strachan. Strachan, who would later become Bishop of Toronto, had travelled to Kingston 1799 where he tutored the children of prominent Loyalist families there, such as the Cartwrights. He was ordained as an Anglican Priest in 1803 and moved to Cornwall, where he opened the school. Strachan's grammar school would become famous for training the youths of conservative ruling class figures: the somewhat mythical, but firmly believed-in, "Family Compact." In her history of Cornwall, Elinor Kyte Senior writes:

> In the first twenty-seven years of its existence, Cornwall's claim to fame was due more to three outstanding personalities than to any particular characteristic of the town itself. In their turn, Sir John Johnson, Patrick McNiff and John Strachan kept the tiny town on the north bank of the St. Lawrence from falling into obscurity. In fact, when John Strachan passed through the village for the first time on the night of 26 December 1799 en route to Kingston he scarcely noticed it. Little did he dream that he would, within three years, return to spend almost a decade of his life there and, by the sheer force of his personality, transform Cornwall into a unique centre of learning, attracting the sons of the most prominent families of York, Kingston, Montreal and Quebec City to his academy. [Kyte Senior 1983:72]

Sir Guy Carleton Wood, who owned the east part of Lot 3, Concession 2 for 30 years, was the brother of Strachan's wife, Ann Wood.

Although the settlement of Cornwall boasted an attractive bay on the St. Lawrence River, it was sorely lacking in mills sites. This problem was overcome by way of another project, the Cornwall Canal, constructed between 1838 and 1842. It was built to overcome the rapids of the St. Lawrence River, particularly those known as the Long Sault, just west of the town. The canal, as described in Beldon's 1878 Atlas of the United Counties, spanned 12 miles (19.2 km) from a point east of Cornwall, known as Dickinson's Landing, near the present-day community of Ingleside. By 1879 three of the canal's seven locks were located at Cornwall,

while three others were located within four miles (6.6 km) of the town. It was enlarged several times between 1876 and 1904, and replaced by the St. Lawrence Canal in 1957. Dickinson's Landing is one of several "lost villages", immediately west of Cornwall, which was flooded when the new canal was built.

In the meantime, the Cornwall canal contributed to the town's economic growth by providing a source of water power for mills. Several grist mills were built immediately, followed by saw and wollen mills. William Mattice, a major Cornwall politician, was the third owner of the town's first grist mill. Mattice, owned the west half of Lot 5 for over twenty years, and the east half of Lot 2 for over thirty years.

Study Area History: Summary of Twentieth Century Development. As Map 8 shows, the study area includes only the northern parts of the lots it incorporates. Historically this area is characterized by a lack of residential, commercial, industrial, and even agricultural development. The principal reason for this absence is the existence of a large swamp – known as the Summerstown Swamp – which dominates the vast majority of the land. Its extent, covering all but the study area's most northern and northwestern reaches, is depicted in Map 9.

The historic maps depicted in Maps 8 and 10 to 14 are consistent in illustrating that very few built structures have occupied the study area since at least 1861. A map of that year shows what were likely residential structures located at the north ends of L2, L3, and L4 (Map 15). By 1879, only a single building was located at the north end of L1 (Map 16). A topographical map from 1909 illustrates that none of these buildings were extant by that time (Map 10).

Given their proximity to the Third Concession Road (now Tollgate Road East / Highway 401 / and Service Road), it is probable that the locations of these earliest structures now lie under Highway 401. Property records show that land was expropriated from each lot owner in 1955 for provincial highway purposes. Highway 401 was constructed in stages across the province between 1952 and 1964. By the later year the entire Windsor to Montreal corridor was complete. Initially the highway followed the third concession west of Boundary Road, as shown in the 1965 map in Figure 10. By 1973 improvements and alterations had connected its disjointed branches, east and west of Boundary Road, through the north ends of Lots B, C, and D (Map 14). The lie of this alteration determines the curved northern boundary of the study area's east end.

Owing to their lack of development, property records for these properties show very few historic divisions; and a relatively small number of owners in each case. The records neatly align with the maps from 1861 and 1879, which depict the property owners at those times. Nearly all of the residential development on Lots 5 through C took place on the southern ends of the properties, south of the swamp, and well outside of the study area (records for Lot 6 were unreadable due to poor scanning quality). Aerial photos from 1957, 1972 and 1986, show that the study area itself was characterized throughout this period by wooded and swampy areas, with only minor sections of patchwork agricultural development. The bulk of the agriculturally developed land remained south of the study area. Several residential structures still exist on the south end of the lots and, in more recent years, commercial distribution centres run by the Wal-Mart, Shoppers Drug Mart, and Target Corporations have been erected.

Apart from the construction of Highway 401, three industrial developments affect all of the study area lots between 1913 and 1952. One of these was the erection of a hydro-electric power line in 1913, built by the Cedars Rapids Manufacturing and Power Company (after 1923, the Cedars Rapids Transmission Company). Property records show rights of way being purchased from each lot owner that year, and the still-extant line appears on all of the topographical maps reproduced in this report, after that year (Maps 11 to 13). Where details are given in the records, the original corridor appears to have been a consistent 125 feet wide (38.1 m) across each lot. It determines the study area's southern boundary with respect to Lots 1, 2, A and B; and it traverses lower sections of Lots 3, 4 and 5.

An abandoned railway line determines the southern boundary of the study area as it applies to most of Lot 3 and 4. The line cuts across the remaining lots in a northeastern direction, as shown in Figures 8 to 11. The railway was erected by the Glengarry and Stormont Railway Company, who purchased rights of way from each owner in 1913.

The Glengarry & Stormont Railway line was built to connect Cornwall with the Canadian Pacific Railway Company's (CP) line between Toronto and Montreal, and to provide branch lines to Martintown, Williamstown, and Lancaster, ON. Created in 1912, the company was reincorporated the following year to build a line from St. Polycarpe Junction to Cornwall. The line opened in 1915, with its Cornwall Station located on the northeast corner of Pitt and Sixth Street East: about 2.25 km southeast of the study area, in downtown Cornwall. Freight facilities were located nearby, while a turntable and engine house were built along Adolphus Street. On 01 June 1915, just days after the line opened, it was leased by the CP for 99 years.

A second line determines the southern boundary of the study area as it applies to lot 5 and part of lot 4. This line was built by CP in 1958 (Maps 13 and 14).

The Grand Trunk Railway, which was absorbed by the Canadian National Railway in 1923, had erected its Toronto-Montreal line across the southern boundary of the lots, outside of the study area, in 1855-56. It appears on all of the historic maps, beginning with the 1861 map in Map 15.

Individual Property Histories: Pioneers and Early Land Owners / Occupants. In the following sections, each individual property history is examined, starting from the west end of the study area, moving east (Lot 5 West, or L5W, to Lot C East, or LCE). The property records have been somewhat simplified to omit, for instance, minor and intermediate transactions by third parties (where these have not been judged relevant to the report). Since the former Cornwall Township records have been transcribed and typed from original copies, some minor errors – either original or transcribed – have been interpreted and corrected to provide a "line of best fit" which explains each property's lineage consistently. In some case this issue is discussed under the relevant section.

Each individual property's ownership history is given in the charts up to 1956, when the Department of Highways expropriated rights of way from each owner for the construction of Provincial Highway 401. The focus here is on the early loyalists and pioneers who were responsible for clearing parts of the lots, or having them cleared (thereby qualifying for their patents) and subsequent 19th century owners. Since the overwhelming majority of the study area is swamp land, the activity of these early owners*, in the study area proper*, is thought to

have been very limited. Although environmental features change over time, the fact that the study area was neither developed, nor subdivided, in an area close to the Cornwall urban area, suggests that its lack of utility has been consistent over time. Its 20th-century history, outlined above, does not appear to depart in any meaningful way for purposes of this report. As such, only the descriptions of the eighteenth and nineteenth century owners or occupants have been examined below.

Although the study area has undergone little physical development, it is rife with important historical associations through its early owners. All of the lots have important connections with significant historical persons, connected primarily to the history of Cornwall and the Province of Ontario. Chief amongst these figures is the first premier of Ontario, John Sanfield Macdonald, who also served both as MLA for the United Province of Canada, and as its co-premier. In general, as in the case of Sanfield (as he was commonly referred to), the prominent owners did not occupy the property. In most cases they chose, or were required by profession, to live in places such as Cornwall, Toronto, or Montreal. As such they rented their properties to tenant farmers, whose activities would have been focused on the southern parts of each lot, outside of the study area. Several of the lesser known owners did occupy the land. Again, their residential structures and outbuildings, as shown on the maps in Maps 10 to 16, were primarily located south of the study area. The 1891 census shows that the majority of these buildings were, at that time, 1½-storey wood structures with 4 to 8 rooms each.

There are, in all likelihood, more extensive connections to prominent figures than have been determined in this report. In part this is due to the proliferation of the surnames like Macdonald and McDonell which, although they are frequently confused in records, represent several distinct families who produced major figures of importance. Connections to these families, which may appear obvious to another seasoned local historian, have not been fully pursued where they were not presented to the author with some degree of ease. The justification for this approach is provided by the fact that the activities of these persons, within the study area proper, is believed to have been limited; and that, in most cases, the most highly celebrated figures did not themselves occupy the properties. Moreover, in the case of the Macdonalds and McDonells, also spelled McDonald and Macdonell, there are dozens of persons with the same name for any given census year, and often a dozen or so with the same combination of given and surname.

Lot 5 West (L5W). Robert Colquhoun (1824 to 1825).

1861 map labels all of Lot 5 as a “Clergy Lot.” While the entire lot may initially have been intended as a clergy reserve, only its east half had that connection in title. In 1824, the patent for L5W was granted to Robert Colquhoun, who immediately sold it to John Chesley. According to Stiles, “The name Colquhoun is one of the oldest and finest in the community, being associated with stirring times in the early pioneer days, and always closely connected with the upbuilding of Cornwall and vicinity… Colquhoun’s Island, just east of Cornwall, was named for Robert Colquhoun … who acted as Government Agent for the Iroquois Indians, then located on the Indian Lands, St. Regis and Dundee, Que.” (Stiles 1919:82).

William Colquhoun, Robert’s son, was elected in 1867 to the first legislature of the Province of Ontario. William would own LA and LBW from 1884/7 to 1914 (see LA and LABW).

John Chesley (1825 to 1847).

As one the few post-revolutionary American immigrant families that opted for Cornwall, rather than pushing further west to cheaper lands, the Chesleys had arrived in 1800 from Rensselaer County, New York, with sons who soon married in to prominent Cornwall families." (Kyte Senior 1983:122).

Although they had previously been ministered to by the Reverend John Bethune, the first Presbyterian clergyman in Upper Canada, the congregation of St. John's Presbyterian Church in Cornwall was not formally organized until 1827. That year Chesley was ordained as an elder of the church, along with Archibald McLean (L5E, L3W), Martin McMartin (LBW), and five others. St. John's had been erected on Pitt Street the year before.

William Mattice (1847 to 1869).

At one point Mattice also served as an elder of St. John's. In mid-century he was one of the town's most popular and successful merchants. He was also a successful politician. William was the son of John Mattice, a UEL who served in John Johnson's regiment. He was born in Cornwall Township in 1798. In 1845, water rights to the newly built Cornwall canal were granted to three individuals, one of which was John Harvey, who erected the town's first grist mill. Mattice became the mill's third owner when he purchased the facility from the estate of Myron Hitchcock. Mattice was also successful in persuading the town to construct a water channel from the north side of the canal, east to an early industrial park he was developing.

In 1849 Mattice was elected mayor of Cornwall: a position he held until 1860. In 1851 was chosen to serve as warden of the United Counties. He was also elected to the legislature that year, serving as an MLA until 1857. Mattice was a pioneer of freemasonry in the Eastern District, an agent for the Bank of Montreal, president of the police board, and a Lieutenant-Colonel in the Stormont militia's 5th battalion.

Alexander H. McDonald (1869 to 1909).

Alexander H. McDonald, who appears on the 1879 map, owned L5E from 1869 to 1908. The 1901 census lists Alexander living next to the McCourts, Empeys, Grants, and other family associated with the study area. The 60-year-old Gaelic-speaking farmer was living with his wife Helen, and his brother Hugh, at the time. Hugh was hotel clerk. His 13-year-old daughter, Bertha, was also living with the family on L5E.

Table 2. L5W property owners from patent date to 1956.

1824	Crown	Robert Colquhoun	100 acres
1825	Robert Colquhoun	John Chesley	100 acres
1847	John Chesley	William Mattice	100 acres
1869	William Mattice	Alexander H. McDonald	100 acres
1908	Alexander H. McDonald	Donald and Walter T. Hope	100 acres
1909	Donald and Walter T. Hope	Roland Runions	100 acres

1913	Roland Runions	Cedars Rapids Manufacturing and Power Company	1.77 acres 125' x 615.5'
1914	Roland Runions	The Glengarry & Stormont Railway Company	Part, with other lands
1923	Cedars Rapids Manufacturing and Power Company	Cedars Rapids Transmission Company	
1926	Roland Runions	W.L. Swerdfigure	100 acres
1930	W.L. Swerdfigure	Eli Swerdfigure	100 acres
1942	Eli Swerdfigure	Bernice Jean Pilon	100 acres
1944	Bernice Jean Piteau (Pilon)	Joseph E. Burns	100 acres
1947	Joseph E. Burns	Alphonse Jalbert	208' x 208' SE corner
1951	Alphonse Jalbert	Roy Armand	208' x 208' SE corner
1951	Roy Armand	Crown Trust Company	208' x 208' SE corner
1951	Joseph E. Burns	Crown Trust Company	7.15 acres South end
1953	Crown Trust Company	Trans-Northern Pipeline	Part, with other lands
1953	Joseph E. Burns	Trans-Northern Pipeline	Right of Way
1955	Joseph E. Burns	Arco Realties Limited	South of railway line
1956 Department of Highways expropriation			

Lot 5 East (L5E). In 1833 the patent for L5E was granted to four individuals, trustees of the Presbyterian Church built in Cornwall in 1826. One of these, Archibald McClean, is associated with other properties in the study area.

Archibald McLean (trustee, 1833 to circa 1847).

Archibald was the son of UEL Neil McLean, a lieutenant in the 84th regiment. In 1802 he was appointed sheriff of the Eastern District at Cornwall. Neil McLean was a legislative councillor, district and county treasurer, sheriff, and a judge of the Surrogate Court at Cornwall.

Archibald was born at St. Andrews in 1791. He was educated at Reverend John Strachan's grammar school in Cornwall, which was known as a training school for the perceived "Family Compact" of Tory elites. After school, Archibald studied law under the Attorney-General of Upper Canada, William Firth. During the War of 1812 he was injured at Queenston, where Sir Isaac Brock fell, and was later taken prisoner at the Battle of Lundy's Lane. At war's end he was released, and resumed his study of law. He was called to the bar in 1815. Returning to Cornwall, he established a large clientele, and was elected to represent Stormont in the legislature. Twice he served as house speaker. When Cornwall was incorporated as a town in 1834, McLean was again elected, this time as the town's representative. He regained the county seat in 1836 but, in 1837, vacated the position when he was appointed judge to the Queen's Bench in Toronto. In 1863 Archibald became the Court's Chief Justice and, the following year, president of the Court of Appeals. He died in October of 1865. While in Cornwall, Archibald lived on town lot 8, south of First Street.

John/James Chelsey (1847 to 1871).

Property records make no mention of a transaction between the above trustees, and John Chesley, and elder of the Presbyterian Church (see L5W). In 1847 the property was willed from John to his son James Chesley, while the next transaction lists a sale by the church itself, to William and Joseph Atcheson. This lineage suggests that the Chelsey's were also acting as church trustees during the period from 1847 to 1871.

Donald Roach (1874 to 1892).

Donald Roach appears on the east half of Lot 5 on the 1879 map. He purchased the half-lot from William and Mary Atcheson in 1892, selling it to Ufimie Billette four years later. In 1891, a 59-year old cotton mill watchman named Donald Roach was living in the east ward of the town of Cornwall. Born in Quebec, it may have been this Donald Roach who sold the property to Billette. However, the census of 1891 shows the family of *John* Roach, a Roman Catholic farmer born in Ontario, living next to other families associated with the study area (McDonald, McArthur, Kettle).

Ufimie Billette (1892 to 1896).

The Billette family were farmers who settled on L5E after 47-year-old Ufimie acquired the half-lot in 1892. The property was formally transferred to her husband Amable, a farmer, in 1896.

Table 3. L5E property owners from patent date to 1956.

1833	Crown	Archibald McLean Ambrose Blacklock John McDonald James Pringle	100 acres
1847	John Chesley	James Chesley	100 acres
1871	Trustees of the Presbyterian Church of Canada	William and Joseph Atcheson	100 acres
1874	William and Mary Atcheson	Donald Roach	100 acres
1982	Donald Roach	Ufami Biette	100 acres
1896	Ufame Biette	Amable Billette	100 acres
1907	Amable Billette	Miles Alguire	100 acres
1914	Miles Alguire	The Cedars Rapids Manufacturing and Power Co.	Part 1.79 acres
1915	Miles Alguire	The Glengarry and Stormont Railway Company	Part 1.77 acres
1917	Miles Alguire	Elizabeth Swerfigger	100 acres
1923	The Cedars Rapids Manufacturing and Power Company	Cedars Rapids Transmission Company	Part, With other lands
1928	Elizabeth Swerfigger	John J. Swerfigger	100 acres ½ interest
1934	Elizabeth Swerfigger	Walter Swerfigger	100 acres ½ interest

1951	John Swerfigger	Walter Swerfigger	Quit claim deed
1951	Walter Swerfigger	Crown Trust Company	All, except 1.77 acres (railway) and 30 acres
1952	Crown Trust Company	Trans-Northern Pipeline Company	Part, with other lands
1953	Crown Trust Company	McColl-Frontenac Oil Company	
1953	Crown Trust Company	British American Oil Company	Part lot
1953	Walter Swerdfeger	Hyrdo Electric Power Commission of Ontario	Part lot
1956 Department of Highways expropriation			

Lot 4 West (L4W).

Duesler/Bergin (1797 to 1865).

The patent for L4W is listed in property records as having been granted to an "Andrew Frister" in 1797. However, those entries which immediately follow list "Andrew Trisler", "Andrew Trysler", "William Drusler", and "William Densler." Although the typed transcription of these records may or may not depart from the original records, the property appears to have been granted to Andrew Duesler. A Duesler family does appear in the 1851 census of Cornwall Township. Its members' given names, and their ages, are consistent with Andrew, William, and Mary Bergin. Bergin, listed as a widow in the property records, acquired a half-interest in the property in 1854, and was likely Andrew's daughter, William's sister. It appears that she was the wife of William Bergin, a Civil Engineer in Toronto (see L3E). The 1861 map shows both "A Duesler" and "Mrs. Bergin" as owners of L4 property. In 1879, the 81-year-old Andrew, or a descendant, appears on the lot's west half.

Neither the Duesler surname, nor any of the above variants, was found in the United Empire Loyalist Association directory. However, the surname suggests to the author a connection to UELs of Palatine German decent. In the 1855 census, William is listed as having been born in the United States, like most Palatine UELs. The census identifies the Duesler's as Church of England adherents, although this oft-made "white lie" probably concealed their Lutheran or Calvinist faith. Harkness, in a discussion outside the practical purview of this report, discusses the conversion of some Lutherans who attended the Williamsburg Lutheran Church, to the Church of England, earlier in the century (Harkness 1946:108).

It is possible that the building, located along the Third Concession Road on Lot 4 in 1861, was associated with the Dueslers or Bergins.

John Sanfield Macdonald (1865 to 1872/78).

The most widely celebrated person to be associated with the study area is John Sanfield Macdonald: Ontario's first premier. Sanfield purchased the west half of Lot 4 in 1865, owning it until his death in 1872. In 1878 the property passed from his estate to John D. Macdonald, who sold it to Joseph Gadbois in 1884.

The 1861 map lists “Judge McLean” as an owner of L4 that year. This is a reference to Archibald McLean, discussed above. In fact, the property had been mortgaged by Mary Bergin (see above) that year and, through default or other circumstance, McLean became its trustee before Sanfield’s acquisition. Sanfield also owned L1E from 1848 until 1872. The 1861 map lists him on that property.

John Sanfield Macdonald’s family arrived in Upper Canada, from Scotland, in 1786. Sanfield was born at St. Raphael, Glengarry County, in 1812. As a youth he worked briefly as a clerk in Lancaster and Cornwall. Dissatisfied, he attending the famous grammar school established by the Reverend John Strachan, known as the training ground for members of the “Family Compact” Tories, then under the direction of Presbyterian Reverend Hugh Urqhuhart. He graduated in 1835, and began his pursuit of legal profession under Archibald McLean, discussed above (see L5E). McClean had already been assigned to the Court of the Queen’s Bench.

Sanfield was called to the bar in 1840 and, the following year, he was elected to the first Legislative Assembly of the United Province of Ontario. He served in all eight pre-confederation assemblies: as a member from Stormont until 1857, and as a member of Cornwall from 1857 to 1867. He was co-premier of the Province from 1862 to 1864. During this period he served as Solicitor General (1849-1851), and Speaker of the Assembly (1852-54).

Although he was initially opposed to Confederation, Sanfield came to accept the arrangement. He became an ally of Sir John A. Macdonald, who persuaded him assume the position of Ontario premier. He served in that capacity until 1871 when he was defeated by the liberal incumbent, Edward Blake. Sanfield was Ontario’s only Catholic Premier until the election of Dalton McGinty in 2003. He died in Corwall in 1872, and is buried at St. Andrew’s Cemetery.

While in Cornwall, the Sanfield family lived at Ivy Hall, which at one point housed the imperial garrison. The building, which fronted Water Street, served as a hospital around the turn of the century, but was gutted by fire in 1915. Sanfield did not occupy the study area properties, but apparently used them as a source of revenue. Hodgins notes that, at mid-century, “Sanfield’s personal fortunes were also rising. He was steadily acquiring property and his legal practice had so expanded that he was forced to hire two assistants.” (Hodgins 2000).

Gadbois (1884 to 1943).

L4W was purchased by Alexander Gadbois in 1884. Although there were few Gadbois’ in Cornwall Township at the time, this Alexander Gadbois has not been identified. A son of Frank Gadbois, a Cornwall general merchant and blacksmith, had the same name. That Alexander, however, was only 10 when the property was purchased. The L4W Alexander was related to Joseph and Agnes Gadbois, who bought the property from Alexander for $1 in 1895. The 1901 census lists Joseph as a French Roman Catholic farmer, living with Agnes and one son, Walter, age 7, although it is not obvious that the family occupied the property at this time. The 1911 census lists the Gadbois’ living adjacent to other study area property owners, including Kittle, Farlinger, and Grant. The property remained in the family until 1943, when it was purchased by Romeo Rochon.

Table 4. L4W property owners from patent date to 1956.

1797	Crown	Andrew Frister	100 acres	
1802	Crown	Andrew Trisler or Trysler (correction)	100 acres	
By 1853	Andrew Trisler or Trysler (correction) – Drusler?	William Drusler	100 acres	
1853	William Drusler	William Drusler	100 acres	will
1854	William Densler	William Andrew Densler	100 acres	Subject to life estate of widow
1854 - 1856	Andrew Densler, Mary Densler, and Ann Hanlon	Mary Bergin (widow)	100 acres	
1861	Mary Bergin	P.B. & Saving Society	100 acres	mortgage
1865	P.B. & Saving Society	John Sanfield Macdonald	100 acres	
1876	Mary Christine Macdonald (Bergin?)	John Sanfield Macdonald	100 acres	Release of dower
1878	Estate of John Sanfield Macdonald	John D. Macdonald	100 acres	
1884	John D. Macdonald	Alexander Gadbois	100 acres	
1895	Alexander Gadbois	Joseph Gadbois	100 acres	
1914	Joseph Gadbois	The Cedars Rapids Manufacturing and Power Company	1.84 acres	
1914	Joseph Gadbois	The Glengarry and Stormont Railway Company	1.7 acres	
1923	The Cedars Rapids Manufacturing and Power Company	Cedar Rapids Transmission Company	Part, with other lands	
1943	Estate of Joseph Gadbois	Romeo Rochon	All except 1.84 and 1.7 acre parcels	
1946	Romeo Rochon	Felix Rose	All except 1.84 and 1.7 acre parcels	
1952	Felix Rose	Trans-Canada Pipe Line Company		
1954	Felix Rose	Canadian Petrofina Ltd.		Right of way
1955	Felix Rose	Max Seigler	All except 1.84 and 1.7 acre parcels, and right of way	
1955 Hydro Electric Power Commission of Ontario, expropriation: 3.478 and 0.664 acres				
1956 Department of Highways expropriation				

Lot 4 East (L4E).

Duesler (1829 to 1885).

Whereas the patent for L4W was granted to Andrew Duesler, its east half was granted to his son, William, in 1829 (see L4W). In 1853 it passed to Andrew Duesler (Junior), as stipulated in William's will. Mary Bergin (see L4W) acquired the property from Andrew the following year, but it returned to Andrew's possession 1861.

It is possible that the building, located along the Third Concession Road on Lot 4 in 1861, was associated with the Dueslers or Bergins.

George Grant (1885 to 1889).

In 1885 Andrew Duesler sold the half-lot to George Grant, who in turn sold it to Daniel McCourt in 1889. A 37-year-old farmer named Duncan Grant is still listed in the 1901 census, living with his wife, Susanna, and 5 children, beside the McCourt family.

McCourt (1889 to 1956+).

Daniel McCourt purchased L4E from George Grant in 1885. Daniel passed away in c.1900, at which point the property passed to his wife, Mary Jane. The 56-year-old widow, Mary Jane, is herself listed as a farmer in the 1901 census and as the head of a household with 6 children and two grandchildren. One of the children, 12-year old Joseph Owen, would acquire the property in 1938. Joseph sold the south 75 acres of L4E to Bruce McCourt in 1941, but it was returned to his possession 1945.

Table 5. L4E property owners from patent date to 1956.

1829	Crown	William Dusler	100 acres	
1853	William Dusler	Andrew Dusler	100 acres	
1885	Andrew Deusler	George Grant	100 acres	
1889	George A. Grant	Daniel McCourt	100 acres	
1900	Estate of Daniel McCourt	Mary Jane McCourt	100 acres	
1913	Mary Jane McCourt	The Cedars Rapids Manufacturing and Power Company	1.86 acres 124' x 649'	
1914	Mary Jane McCourt	The Glengarry and Stormont Railway Company	1.83 acres	
1923	The Cedars Rapids Manufacturing and Power Company	Cedars Rapids Transmission Company	Part, with other lands	
1938	Mary Jane McCourt	Joseph Owner McCourt	100 acres	
1941	Joseph Owen McCourt	Bruce M. McCourt	South 75 acres	
1945	Bruce M. McCourt (widower)	Joseph McCourt	"All"	

1952	Jo56seph McCourt	Trans-Canada Pipeline Company	Right of way	
1955	Expropriation – Department of Highways			
1956	Expropriation – Hydro Electric Power commission of Ontario			

Lot 3 West (L3W).

Phillip Empey (1828 to 1830).

Phillip Empey owned the property for just two years, from 1828 to 1830. Yet, judging by adjacent neighbours listed in the 1901 census, members of the Empey family were still living in this location at that time.

Archibald McClean (1830 to 1864).

Archibald McClean, discussed above (see L5E), purchased the half-lot from Empy in 1830, owning it for the next 34 years.

Duncan G. Macdonald (1864 to 1878).

From 1864 to 1878, L3W was owned by Duncan G. Macdonald. Of the seven Duncan Macdonalds listed the 1871 census, all are between the ages 36 and 52, and all but one was a Scottish Presbyterian farmer. The seventh is listed as a General Manager of Presbyterian faith.

It is possible that the Duncan Macdonald identified here the son of John Roy Macdonald, and the brother of Dr. Roderick Macdonald (see LBE). In 1786, Roy, accompanied by his wife, two daughters and a son, arrived in the area as part of a large group of Scottish Highlanders. The Highlanders settled primarily in Glengarry County, and founded the settlement of St. Andrews, roughly 7 km northwest of the study area. But a number of them settled in Cornwall Township.

Archibald McArthur (1878 to 1899).

Archibald is listed on the 1879 map as the owner of L3W. Only one Archibald McArthur was identified in the 1881 census for Cornwall Township. He is listed as a 43 year-old Catholic farmer living with his Presbyterian wife and four children. In 1887 Archibald gave a 132’ x 165’ plot of land to the trustees of School Section No. 7. A school was erected in this half-lot’s southeast corner, well outside of the study area. The school purchased an additional, adjacent, 2.4 acres in 1940 from the Filliol family.

Table 6. L3W property owners from patent date to 1956.

1797	Crown	David McCuen Jr.	100 acres	
1800	David McCuen	Jacob Farrand	100 acres	
1818	Estate of Jacob Farrand	Duncan Fisher	100 acres	
By 1828	Duncan Fisher	Daniel Fisher	100 acres	
1828	Daniel Fisher	Phillip P. Empey	100 acres	
1830	Phillip Empey	Archibald McLean	100 acres	
1864	Archibald McLean	Duncan G. Macdonald	100 acres	With other lands, 225 acres
1878	Duncan G. Macdonald	Archibald G. McArthur	100 acres	
1887	Archibald G. McArthur	Trustees of School Section No. 7	0.5 acres	132’ x 165’ SE corner
1899	Archibald G. McArthur	John Parasien	99.5 acres	
	Under power of sale by the Hamilton Loan Society			
1899	John Parasien	Angus R. McLennan	99.5 acres	
1900	Angus R. McLennan	Mary Donihee	99.5 acres	
1903	Mary Donihee	Thomas J. Donihee	99.5 acres	Undivided ½ interest
1905	Mary and Thomas Donihee	William H. Gallinger	99.5 acres	
1912	Estate of William H. Gallinger	Elsie Ann, William Ambrose, and Sarah Catherine Gallinger	99.5	Will, subject to life lease
1913	Elsie Ann, William Ambrose, and Sarah Catherine Gallinger	The Cedars Rapids Manufacturing and Power Company	1.82 acres 125’ x 635.8’	
1914	Elsie Ann, Ambrose, and Sarah Catherine Gallinger	The Glengarry & Stormont Railway Company	1.79 acres	
1923	Cedars Rapids Manufacturing and Power Company	Cedars Rapids Transmission Company	1.82 acres	
1925	Elsie Ann, William Ambrose, and Sarah Catherine Gallinger	Simon Hutt	95.88 acres	
1930	Simon Hutt	Donald McRae	95.88 acres	
1934	Donald McRae	St. Lawrence Power Company Ltd.	125’ strip along east side	Right of Way
1938	Donald McRae	Philippe and Julia Ester Filliol, joint tenants	95.88 acres	
1940	Philippe and Julia Ester Filliol, joint tenants	Trustees of School Section No. 7	2.42 acres 80’ x 132’	North and adjacent to existing school property

Lot 3 East (L3E).

Guy Carleton Wood (1828 to 1858/71).

The patent for this property was granted to Catherine Valentine in 1828. It was sold that same year to Guy Carleton Wood, who appears on the 1861 map. Wood did not reside on the property, choosing to rent the land and live in Cornwall where he worked. From Kyte Senior we learn that, after Walter Wilkinson died in 1807, "His work as postmaster was carried on by the man who would remain on the job for the next half century – Guy Carleton Wood. Named in honour of Lord Dorchester (Guy Carleton) and son of a retired surgeon of the 1st Dragoon Guards, the new Postmaster was set up an office in his store at the corner of First and Sydney Street." (Kyte Senior 1983:118). Wood was the brother of Ann Wood, who married the Reverend John Strachan.

In 1816 four-foot wide sidewalks were installed along Second Street in Cornwall. Kyte Senior notes that "These were probably built with flagstones in imitation of the sidewalk which Guy Carleton Wood had constructed in from of his home on First Street."

Wood mortgaged the property to the property to the Trust and Loan Company in 1858. For reasons not identified it was the Loan Company who maintained ownership of the property, selling it to John McKever in 1871.

John McKever (1871 to 1873).

John McKever legally acquired L3E from the Trust Loan Company in 1871. In 1853 Daniel McKeever, presumed here to be John's father, had purchased the adjacent west half of Lot 4. Born in 1842, Daniel McKeever is listed as an Irish, Roman Catholic farmer in the 1871 census. John McKeever was not discovered. It is possible that the McKeever family occupied, or had a structure built, on the north end of Lot 3 by 1861 – shortly after it was mortgaged by Wood. Because of damage to the author's copy, the 1861 map shows only that a building on the north end of the property was owned by a person whose surname ended in "er". McKeever appears to be the only likely candidate.

Bergin (1873 to 1883).

John Bergin purchased the property in 1873. John is listed as a law student, living with his mother, Mary Bergin (see L4W and L4E), and his brother Darby, in the 1851 census. Harkness provides a succinct biography:

> Another contemporary of these men was John Bergin, who was born in Toronto in 1828 and educated at Upper Canada College there. He was the son of William Bergin, Civil engineer of Toronto … John Bergin came to Cornwall and engaged in mercantile life for a short time and in 1852 began the study of law. There is no record of him ever being called to the Bar but he practised as a solicitor, and was made a Queen's Counsel by the Dominion Government. He lived in the reflected glory of his older brother, Dr. Bergin. In 1896 he was appointed Collector of Customs at Cornwall, was a Director of the Ontario and Pacific Railway, afterwards the Ottawa and New York, and turned the first sod on the railway in 1897. He died in 1909, a bachelor. [Harkness 1946:425]

Table 7. L3E property owners from patent date to 1956.

1828	Crown	Catherine Valentine	100 acres	
1828	Catherine Valentine	Guy Carleton Wood	100 acres	
1858	Estate of Guy Carleton Wood	George Carleton Wood	100 acres	
1858	George Carleton Wood	Trust & Loan Company of Canada	100 acres	
1871	Trust & Loan Company of Canada	John McKever		
1873	John McKever	John Bergin	100 acres	
1883	John Bergin	Peter McKay	100 acres	
1903	Peter McKay	Edward Warner	100 acres	
1908	Edward Warner	Robert Blackwood	100 acres	
1912	Robert Blackwood	Charles A. Hutt		
1913	Charles A. Hutt	The Cedar Rapids Manufacturing and Power Company	1.83 acres	
1914	Charles A. Hutt	The Glengarry and Stormont Railway Company	1.51 acres	
1923	Cedars Rapids Manufacturing and Power Company	Cedars Rapids Transmission Company	1.83 acres	
1931	Charles A. Hutt	Catherine Enright Burton and John Barry	96.66 acres	
1935	Catherine Enright Burton and John Barry	Charles A. Hutt	96.66 acres	
1947	Charles A. Hutt	Mary Ann Daigle	96.66 acres	
1952	Mary Ann Daigle	Joseph Alexander Villeneuve	96.66 acres	
1952	Joseph Alexander Villeneuve	Trans-Northern Pipe Line Company		Right of way
1956	Expropriation – Hydro Electric Power commission of Ontario, 2.086 acres			
1955	Expropriation – Department of Highways			

Lot 2 West (L2W). A structure shown on the north end of Lot 2, along the Third Concession Road, appears on the 1861. Because of damage to the author's copy of this map, the full surname associated with this property could not be determined. The name, which ends in "erson" (i.e., "Emerson" or "Ferguson"), has no candidates in the property records for Lot 2.

Captain Samuel Anderson (1797 to 1802).

All of Lot 2 was granted to Captain Samuel Anderson in 1797. Anderson was a one of the original town settlers, and a very prominent UEL. He was born on a farm near Boston, where his family had emigrated from County Antrim, Ireland, in 1720. He served during the Seven Year's War, 1756-1763, and participated in the capture of Montreal. He and his brother were captured and imprisoned at the outbreak of the American War of Independence. But they managed to escape, after which Samuel joined General Burgoyne's army in Vermont. He

was later commissioned a captain in Sir John Johnson's regiment.

Anderson was granted several waterfront lots which extended back to the third concession of Cornwall Township. He owned L2W for five years before selling it to John Grant.

John Grant (1802 to 1809).

Grant owned the property for seven years. He was not been identified in the secondary literature or census information examined for this report.

Richard McBean (1809 to 1853).

Grant sold the property to Richard McBean in 1809. In 1806 McBean had taken over the ferry service between the town and St. Regis. He is not known to have occupied the property.

McKeever (1853 to 1880).

McBean sold L2W to Daniel McKeever in 1853. The family may have occupied one of the few built structures to occupy the north end of study area (see L3E). It is likely that Daniel died before 1880, for that year the property was sold by Ann McKeever – presumably his wife – to Alexander McDermid.

Alexander McDermid (1880 to 1904).

McDermid, a Scottish Presbyterian farmer born in 1847, owned this half-lot until 1904, when he sold it to John Denis Macdonald. It is probable that the McDermids lived on the property, but they have not been positively identified as occupants.

Table 8. L2W property owners from patent date to 1956).

1797	Crown	Capt. Samuel Anderson	100 acres	With other lands, 1380 acres total
1802	Capt. Samuel Anderson	John Grant	100 acres	With other lands, 200 acres
1809	John Grant	Richard McBean	100 acres	With other lands, 200 acres
1853	Richard McBean	Daniel McKeever	100 acres	
1880	Ann McKeever	Alexander McDermid	100 acres	
1904	Alexander McDermid	John Denis McDonald	100 acres	98.14 acres
1913	John Denis McDonald	The Cedars Rapids Manufacturing and Power Company	1.89 acres, 125' x 657.3'	
1914	John Denis McDonald	The Glengarry & Stormont Railway Company	1.86 acres	
1946	John Denis McDonald	Esdras Ravary	98.14 acres	

1947	Esbras Ravary	Luc Delvaulx	98.14 acres	
1952	Luc Delvaulx	Trans-Northern Pipe Line Company		Option for right of way
1955	Expropriation – Department of Highways			
1956	Expropriation – Hydro Electric Power commission of Ontario			

Lot 2 East (L2E). A

Captain Samuel Anderson/Samuel I.B. Anderson (1797 to 1850).

Unlike its west half, Captain Anderson held on to the east half of Lot 2 until 1836 (see L2W). In 1836 he gave the property to his son, Samuel Isaac Brock Anderson, named after the famous general who died in battle in Queenston during the War of 1812.

William Mattice (1850 to 1882).

Mattice purchased L2E in 1850 (see L5W and L1W). It was sold by his executors to John Bowie in 1882.

John Bowie (1882 to 1901).

Bowie was a lockman on the Cornwall Canal. Neither the 1891 nor the 1901 census suggest that the Bowie family resided on the property. Neighbours of the Bowies in 1901 were all employed in labouring positions. As a lockman, it is probable that Bowie and his family lived in town. One of his neighbours in 1901 was John Parsisian.

John Parisian

In 1901, John Parisian was John Bowie's neighbour. He purchased L2E in 1903. John was a carpenter and general contractor. He and his wife, Jennie, had 7 children.

Table 9. L2E property owners from patent date to 1956.

1797	Crown	Capt. Samuel Anderson	100 acres	
1836	Capt. Samuel Anderson	Samuel I. B. Anderson	100 acres	Will
1850	Samuel I. B. Anderson	Pierpont E. Adams	100 acres	
1850	Pierpont E. Adams	William Mattice	100 acres	
1882	Estate of William Mattice	John Bowie	100 acres	
1901	John Bowie	John Parisian	100 acres	
1903	John Parisian	Duncan A. Grant	100 acres	
1913	Duncan A. Grant	The Cedars Rapids Manufacturing and Power Company	1.75 acres 125' x 610.4'	
1914	Duncan A. Grant	The Glengarry & Stormont Railway Company	1.71 acres	
1921	Duncan A. Grant	Thomas Maloney	96.66 acres	

1953	Thomas Maloney	Trans-Northern Pipe Line Company		Agreement for right of way
1956	Thomas Maloney	Harry and Nathan Kerdman, et al.	96.66 acres	
1955	Expropriation – Department of Highways			
1956	Expropriation – Hydro Electric Power commission of Ontario			

Lot 1 West (L1W).

Captain Samuel Anderson (1797 to 1836).

Captain Anderson was granted the patent to L1W in 1797 (see L2W and L2E).

William Mattice (1836 to 1882).

Mattice owned L1W from 1836 to 1882 (see L5W). A structure depicted on the north end of Lot 1, on the 1879 map, may have been erected by the Mattice family. For William himself, who was a merchant, a miller, the mayor of the Town of Cornwall from 1849 to 1861, and an MLA, this area hardly appears to be a suitable location for a residence. However, given the extent and duration of his holdings on Lots 1 and 2, it is possible that members of the Mattice family did occupy these study area properties.

David McCracken (1882 to 1893).

It is possible that David McCracken was the son of a Cornwall butcher of the same name, born in 1801. By 1891 he was a widower, living in a 2-storey wood house with several of his children, and extended family. It does not appear that he ever occupied the C1W property. David is listed as a speculator in the census.

Farlinger (1893 to 1956+).

The Farlinger family was living in the study area in 1901, next to the Kittles, Empeys, McCourts, Grants, and Alexander H. Macdonald. Robert, a farmer of German origin, was born in 1848. He lived on the C1W property with his wife, Emiline, a daughter and two sons. Robert and Emiline's youngest, Herbert, was born in 1887. He inherited the property in 1924.

Table 10. L1W property owners from patent date to 1956.

1797	Crown	Capt. Samuel Anderson	100 acres	With other lands, 1380 acres
1836	Samuel Anderson	William Mattice	100 acres	
1882	Estate of William Mattice	David McCracken	100 acres	
1893	David McCracken	Robert Farlinger	100 acres	
1913	Robert Farlinger	The Cedars Rapids Manufacturing and Power Company	1.76 acres	

1914	Robert Farlinger	The Glengarry and Stormont Railway Company	1.55 acres	
1924	Robert Farlinger	Herbert C. Farlinger	96.69 acres	
1953	Herbert C. Farlinger	Trans-Northern Pipe Line Company		Right of way
1956	Herbert C. Farlinger	Hydro-Electric Power Commission of Ontario	4.035 acres ~ 280' x 628' South end	

Lot 1 East (L1E).

Captain Samuel Anderson/George Anderson (1797 to 1848).

See L2W, L2E and L1W.

John Sanfield Macdonald (1848 to 1872/6).

See L4W.

Joseph Gautier (1876 to 1883).

In 1881, Joseph Gautier was listed as a 56-year-old farmer, born in Quebec. It is not clear whether the family occupied the study area, although Joseph is listed on the 1879 map. He and his wife, Jane, had seven children, six of which were female. Two of their daughters, Catherine and Sarah, were dressmaker. In 1891 Catherine is listed as a resident of Cornwall's east ward, while Catherine is listed as living with two of her sister, and her brother, in an area occupied by working families.

William Kittle (1883 to 1928).

William Kittle was born in 1862, making him just 21 when he acquired L1E. Kittle was a German, Methodist, farmer. He and his wife, Hannah, along with their three children, are listed in 1901 beside other study area property owners, including the Farlingers, Empeys, McCourts, and Alexander H. Macdonald.

Table 11. L1E property owners from patent date to 1956.

1797	Crown	Capt. Samuel Anderson	100 acres	With other lands, 1380 acres
1836	Capt. Samuel Anderson	George Anderson	100 acres	With other lands
1848	George Anderson	John Sandfield Macdonald	100 acres	
1876	Estate of John Sandfield Macdonald	Joseph Gauthier	100 acres	
1883	Joseph Gauthier	William Kittle	100 acres	
1904	William Kittle	William J. Kittle	100 acres	

1904	William Kittle	Unspecified -- timber rights	100 acres	Timber rights
1913	William J. Kittle	The Cedars Rapids Manufacturing and Power Company	1.83 acres	
1914	William J. Kittle	The Glengarry & Stormont Railway Company	1.64 acres	
1923	The Cedars Rapids Manufacturing and Power Company	The Cadars Rapids Transmission Company	1.83 acres	
1928	William J. Kittle	Maxime Lefebvre	96.53 acres	
1936	Maxime Lefebvre	George William McIntosh	96.53 acres	
1943	George William McIntosh	James Lapierre	10 acres	North end
1943	James Lapierre	Frederick Basil Kerr	86.53 acres	
1946	Frederick Basil Kerr	Joseph Albert Cadieux	86.53 acres	
1953	Joseph Albert Cadieux	Trans-Northern Railway Company		Right of way
1953	James Lapierre	Lucien Fortier	10 acres	North end
1953	Joseph Albert Cadieux	Joseph A. Villeneuve	86.53 acres	
1955	Lucien Fortier	Lambert D. Bray	10 acres	North end
1955	Lambert D. Bray	Department of Highways	10 acres	North end

Lot A and Lot B West (LA and LBW).

Lieutenant John Frederick Holland (1804 to 1810).

UEL Lieutenant Holland was the son of provincial surveyor-general Samuel Holland. Kyte Senior notes that “there were many [UELs] who never came to the settlement at all though they had drawn lots there … It is unlikely, too, that Lieutenant J. F. Holland … settled even temporarily at township no. 2 [Cornwall].” (Kyte Senior 1983:38].

Jacob Waggoner (1810 to 1821).

During the War of 1812, Waggoner was posted to Joseph Anderson’s farm, west of the town. “Master Carpenter John Anderson was busy with his workmen, David Mason and Jacob Waggoner, in repairing barracks, erecting cook houses and guard houses, and converting Lt.-Col. Neil McLean’s blacksmith shop into a carpenter’s shop and armoury repair centre.” (Kyte Senior 1983:105).

Alexander McMartin (1821 to 1887).

Alexander McMartin was the son of Malcolm and Margaret McMartin, who settled in Martintown, Glengarry County, about 10 km due north of the study area. He served as Glengarry’s representative in the legislature from 1812 to 1824, and from 1824 to 1838. In 1828 he became postmaster for Martintown, and in 1838 he was appointed sheriff of the United Counties of Stormont, Dundas and Glengarry. He died in Martintown in 1853, and is not believed to have occupied the property.

The McMartins are listed on both the 1861 and 1879 maps of region. When Alexander purchased LA and LBW, they were immediately sold to his son, Martin. Martin, born in c. 1899, is listed as a farmer in the 1852 census. He was living with his wife, Barbara, and five children. When Martin died in c. 1863, his estate was left in the hands of his trustees, all of whom were associated with the study area: Walter Colquhoun, William Colquhoun, and Donald McDermid. In 1878 and 1884 the trustees turned over the property to Martin and Barbara's twin sons, Duncan and Robert. Duncan, 25 at the time, received the west half of Lot B and the east 1/6th of Lot A. Robert received the west 5/6th of Lot A in 1884.

The 1881 census shows that the brothers were living together at the time, with their 76-year-old mother, their sister Mary, and a 50-year-old servant named Ann Harvey. Given the extent of their holdings, and their long association with the land, it is likely that the McMartins occupied the LA and LB properties. A single house for these properties is depicted on LA, south of the study area, on both maps. The 1879 map identifies the property with the widowed "Mrs. McMartin."

William Colquhoun (1887 to 1914).

William Colquhoun was the son of Robert Colquhoun, a Government Agent to the Iroquois (see L5W). He was educated at the Cornwall Grammar School and, at 13 years' of age, left for Montreal to become a merchant. Later he relocated to Dickinson's Landing: one of the villages lost to flooding when the St. Lawrence Canal was created in 1958. In 1841 he became that settlement's first postmaster, serving in that capacity until 1863. He was the first treasurer of Osnabruck Township until 1852 and, having already served as Reeve, was elected warden of United Counties in 1855. In 1867 he was elected as a Stormont representative to the first legislature of Ontario. He ran twice more for Stormont County, losing to James Bethune, Q.C., in 1871 and 1875. In the former election he had won by 5 votes, but lost in a by-election called in response to a petition. He moved to Cornwall in 1876, serving as its mayor in 1881, 1882, and 1883. The 1891 census, held while he was the owner of LA, shows him living with his wife, Hester, and daughter, Bertha, in a 2-storey brick house with 14 rooms. The family lived in Cornwall and did not occupy the LA property. Colquhoun died in 1898, but his estate was not legally transferred to his heirs until 1914. They were still in possession of the property when Highway 401 was opened across the north end of the study area in the mid-1950s.

Table 12. LA property owners from patent date to 1956.

1804	Crown	Lt. Frederick Holland	200 acres	With other lands, 675 acres
1810	John Frederick Holland	Jacob Waggoner	200 acres	With other lands, 675 acres
1821	Jacob Waggoner	Alexander McMartin	200 acres	With other lands, 575 acres
1821	Alexander McMartin	Martin McMartin	200 acres	With other lands
1878	Estate of Martin McMartin	Duncan Alex McMartin	33.3 acres	East 1/6th of Lot

1884	Estate of Martin McMartin	Robert McMartin	166.7 acres	West 5/6th of Lot
1887	Robert McMartin	William Colquhoun	166.7 acres	West 5/6th of Lot
1887	Duncan Alex McMartin	William Colquhoun	33.3 acres	East 1/6th of Lot
1914	Estate of William Colquhoun	The Cedars Rapids Manufacturing and Power Company	5.4 acres	
1914	Estate of William Colquhoun	The Glengarry & Stormont Railway Company	5.1 acres	
1917	Estate of William Colquhoun	Hester Agnes McNairn, Edith Roberta Billington, Margaret Colquhoun Wilson	189.5 acres	
1947	Edith Roberta Billington, Margaret Wilson et al.	Hester Agnes and Robert Harvey McNairn	189.5 acres	
1952	Esther Agnes and Robert Harvey McNairn	Trans-Northern Pipe Line Company		Right of way
1956	Hester Agnes and Robert Harvey McNairn	Elm Hill Company	189.5 acres	And LBC2W
1955	Expropriation – Department of Highways			

Table 13. LBW property owners from patent date to 1956.

1804	Crown	Lt. Frederick Holland	100 acres	With other lands, 675 acres
1810	John Frederick Holland	Jacob Waggoner	100 acres	With other lands, 675 acres
1811	Jacob Waggoner	Henry Waggoner	100 acres	With other lands, 675 acres
1821	Henry Waggoner	Alexander McMartin	100 acres	With other lands
1821	Alexander McMartin	Martin McMartin	100 acres	With other lands
1878	Estate of Martin McMartin	Duncan Alex McMartin	100 acres	
1887	Duncan Alex McMartin	William Colquhoun	100 acres	
1914	Estate of William Colquhoun	The Cedars Rapids Manufacturing and Power Company	5.4 acres	
1914	Estate of William Colquhoun	The Glengarry & Stormont Railway Company	5.1 acres	
1917	Estate of William Colquhoun	Margaret Wilson Colqugoun	89.5 acres	
1923	The Cedars Rapids Manufacturing and Power Company	The Cedars Rapids Transmission Company	5.4 acres	

By 1947	Margaret Wilson Colqugoun	Hester Agnes McNairn, Edith Roberta Billington, Margaret Colquhoun Wilson	89.5 acres	Probably 1917 as per Lot A
1947	Hester Agnes McNairn, Edith Roberta Billington, Margaret Colquhoun Wilson	Hester Agnes and Robert McNairn	89.5 acres	Probably 1917 as per Lot A
1952	Hester Agnes and Robert McNairn	Trans-Northern Pipe Line Company		Right of way
1955	Expropriation – Department of Highways			
1956	Hester Agnes and Robert McNairn	Elm Hill Company	89.5 acres	With Lot A

Lot B East (LBE).

Robert I.D. Gray (1789 to 1804/1824).

Robert Gray was the son of Major Gray, a commander in the first battalion of the King's Royal Yorkers. In 1784, accompanied by his father, Robert moved to Cornwall where he studied law. He was called to the bar in 1794. Two years later he was elected to the second legislative assembly of Upper Canada, representing Stormont County. In 1797 he became solicitor-general. He retained that position until his early death in an 1804 shipwreck. Gray had also served as treasurer from 1798 to 1801. His LBE property was held by executors until it was sold to Robert.

McDonald / Macdonald / McDonell (1824 to 1940).

Difficulties in determining the LBE property owners, from 1824 to 1940, are presented by the consistent transliteration in the property records of the surnames McDonald, Macdonald, and McDonell. Ewan McDonnell is listed as having purchased the property from Gray's executors in 1824, but Ewan McDonald is listed as leaving it to Jane and Donald McDonald in 1897. An inventing set of transactions shows the property being sold and returned to Ewan, listed with the surname Macdonald. That transaction was mediated by a prominent Cornwall doctor, Dr. Roderick Macdonald, who also served as Treasurer of United Counties from 1850 to 1884. The Jane McDonald mentioned above is shown as signing a quit claim deed to Donald, under the name Mary Jane, in 1909. No "Ewan"s or "Evan"s were discovered in the censuses.

Complicating matters is the fact that, while "H. R. McDonell" appears on the 1861 map, an "H. R. Macdonald" is shown in 1879. An 1848 transaction indicates that Ewan's middle name started with an R as well. As Ewan was the principal owner, on paper, from 1824 to 1897, these persons are likely one in the same.

Because Dr. Roderick Macdonald owned the property briefly, it is possible that the family referred to in the property records, and noted on the maps of 1861 and 1879, is that of John Roy (J. R.) Macdonald: Roderick's father. In 1786, Roy, accompanied by his wife, two daughters and a son, arrived in the area as part of a large group of Scottish Highlanders. The Highlanders settled primarily in Glengarry County, and founded the settlement of St. Andrews, roughly seven kilometres northwest of the study area. But a number of them settled in Cornwall Township.

The 1881 census lists the family of a Hugh McDonell living beside John Loney, who owned part of the adjacent lot (see LCW¾). Hugh, born in 1833, the 48-year old Scottish famer was living with a 64-year-old Jane McDonell; Archibald (32 years), Catherine (30 years), Mary Jane (3 years), and Francis (4 mos.). These family members were likely related to the doctor.

Table 14. LBE property owners from patent date to 1956.

1789	Crown	Robert I. D. Gray	100 acres	
1824	Estate of Robert I. D. Gray	Ewan McDonell	100 acres	
1848	Ewan R. McDonell	Dr. Roderick Macdonald	100 acres	
1849	Dr. Roderick Macdonald	Ewen R. Macdonald	100 acres	
1897	Ewan R. McDonald	Donald and Mary Jane McDonald	100 acres	Subject to life lease
1909	Jane McDonald	Donald McDonald	100 acres	Quit Claim Deed
1913	Donald McDonald	Cedars Rapids Manufacturing and Power Company	1.8 acres	
1914	Donald McDonell	The Glengarry & Stormont Railway Company	1.54 acres	
1923	Cedars Rapids Manufacturing and Power Company	The Cedar Rapids Transmission Company	1.8 acres	
By 1940	Donald Macdonald	Township of Cornwall	96.66 acres	Tax default?
1940	Township of Cornwall	Annie McDonell	96.66 acres	Tax deed
1940	Annie McDonell	Napoleon Struthers	96.66 acres	
1952	Napoleon Struthers	Trans-Northern Pipe Line Company		Right of way
1953	Napoleon Struthers	Irvin Brown	86.66 acres (listed as 85 acres)	"All except north 10 acres"
1955	Expropriation – Department of Highways			

Lot C West 3/4 (LCW3/4).

Robert I.D. Gray (1798 to 1825).

See LBE.

John Loney (1825 to 1884).

John Loney is shown on the west three-quarters of Lot C on the 1879 map. Referring to the erection of St. Columban's Catholic Church on Fourth Street in Cornwall, Kyte Senior notes that, although work on the building proceeded in fits and starts, the Loney family was amongst those who continued to finance its construction. She adds, "Just as faithful were members of the Loney family whose head was John Loney (Looney), a private in the 1st Battalion of the King's Royal Regiment of New York. Loney was one of the first of the

disbanded soldiers to arrive at Township No. 2 [Cornwall] in 1784 with his wife and five children."

The John Loney associated with LC is probably the son of John the soldier. By 1881, at age 85, he was a widowing living with members of the McDonell family, on what appears to be the LC property (see LBW). The McDonells listed were: John (47 years), Catherine (49 years), William (20 years), Alex (18 years), and John A. (16 years). Like the two Johns, William is listed as a farmer. John legally acquires the property in 1884.

John R. / Alex McDonell (1884 to 1938).

John McDonell, who lived and farmed this part of LC with John Loney, acquired the property in 1884. Between 1915 and 1920 he passed it to his son, Alexander, who was also a farmer.

Table 15. LCW 3/4 property owners from patent date to 1956.

1798	Crown	Robert I. D. Gray	150 acres	With other lands, 750 acres
1825	Estate of Robert I. D. Gray	John Loney	150 acres	
1884	John Loney	John R. McDonell	150 acres	Will
1913	John R. McDonell	The Cedars Rapids Manufacturing and Power Company	2.69 acres	
1915	John R. McDonell	The Glengarry & Stormont Railway Company	2.27 acres	
1915 -1920	John R. McDonell	Alex J. McDonell	195.04 acres	Not recorded
1920	Alex J. McDonell	John D. Campbell	Agreement "re sale of logs"	
1923	The Cedars Rapids Manufacturing and Power Company	The Cedars Rapids Transmission Company	2.69 acres	
1938	Alexander McDonell	Louise M. Gogo	145.04 acres	With LCC2E¼ -- default on 1930 mortgage
	With LCC2¼E. Listed as 194 acres. Default on 1930 mortgage			
1938	Louise M. Gogo	Hugh D. McDonald	145.04 acres	And LCC2E¼
1940	Hugh D. McDonald	Claude A. McDonald	145.04 acres	And LCC2E¼
1952	Claude A. McDonald	Trans-Northern Pipe Line Company		Right of way
1955	Expropriation – Department of Highways			

Lot C East 1/4 (LCE1/4).

Elizabeth Grey (1798 to 1816).

Elizabeth Grey was granted the east 50 acres of Lot C in 1798. Her total grant of 750 acres clearly identifies her with LB and LCW¾. Her exact relationship has not been determined here.

John McDonald (1816 to 1827).

The identity of "this" John McDonald, who owned the east 50 of Lot C for only 9 years, is complicated by the factors discussed under LBE.

Eliza Campbell (1827 to 1914).

Eliza Campbell was born in North Carolina. Her date of immigration has not been determined. She acquired the property from John McDonald in 1827, when she was 23 years old. In 1881 she was living her son James, a farmer, and his wife, Mary Josephine. James and Josephine had three children at the time, the youngest of which was named William. In 1893 the property was willed to James and Mary, and in 1914 William was involved in selling their estate to Alexander McDonell. The McDonells were neighbouring farmers (see LBE and LCW¾).

Table 16. LCE1/4 property owners from patent date to 1956.

1798	Crown	Elizabeth Gray	50 acres	With other lands, 750 acres
1816	Estate of Elizabeth Gray	John McDonald	50 acres	With other lands
1827	John McDonald	Eliza Campbell	50 acres	With other lands
1872	Eliza Campbell	Edwin Kewin	50 acres	With other lands
1893	Eliza Campbell	James Reid and Mary Josephine Campbell	50 acres	With other lands
By 1914	James Reid and Mary Josephine Campbell	J. Ellis, John D., and William Campbell	50 acres	
1914	J. Ellis, John D., and William Campbell	The Cedars Rapids Manufacturing and Power Company	0.93 acres	
1914	J. Ellis, John D., and William Campbell	Alexander McDonell	49.07 acres	
1915	Alexander McDonell	The Glengarry & Stormont Railway Company	0.76 acres	
1938	Alexander McDonell	Louise M. Gogo	48.31 acres	With east LCC2W¾ -- default on 1930 mortgage
	With LCC2¼E. Listed as 194 acres. Default on 1930 mortgage			

1938	Louise M. Gogo	Hugh D. McDonald	48.31 acres	And LCC2W¾
1940	Hugh D. McDonald	Claude A. McDonald	48.31 acres	And LCC2W¾
1952	Claude A. McDonald	Trans-Northern Pipe Line Company		Right of way
1955	Expropriation – Department of Highways			

Archaeological Context.

For the purposes of context, the Stage 1 background study conducted for this assessment examined data for a study area that encompassed a one kilometre buffer surrounding the project area. Four collective sources were examined in the course of the basic background research.

The first source was the Archaeological Sites Database of the Ministry of Tourism, Culture and Sport; it houses site record forms for registered sites as well as published and unpublished reports on past surveys, assessments and excavations. Data on registered sites within the study area were provided by Robert von Bitter, Archaeological Data Co-ordinator of the Ministry on September 29, 2011. As such, the registered sites data presented in this report satisfy the standard required by the first bullet of Section 1.1.1 of the standards and guidelines for archaeological resource assessments formulated by the Ministry of Tourism, Culture and Sport (2011:14).

Aside from the presence of nearby registered archaeological sites, other indicators of the presence of extant archaeological remains are the proximity of historical plaques to the study area that commemorate important events in a region's past, whether it be the birth of an individual, the site a specific battle, or the construction of a unique building. Generally, historical plaques and markers point to a specific locale on the landscape that can be visited by the public. Although plaques and markers may not be placed in the exact location that the event has occurred, generally it is in close proximity, taking into consideration access to the public. In Ontario, historical plaques may be erected by the federal government through the Historic Sites and Monuments Board of Canada (HSMBC), the Ontario Heritage Trust (OHT), and local heritage agencies or historical societies.

The third source for the assessment was the library/archives of The Central Archaeology Group Inc. It includes an extensive inventory of published and unpublished reports on past archaeological assessments in the one kilometre study area, as well as inventories of registered and unregistered archaeological sites in the area.

The background study also examined several different sources concerning the eighteenth and nineteenth Euro-Canadian settlement of the Geographic Township of Cornwall.

This section of the report consists of several distinct elements as defined in Section 7.5.8 of the standards and guidelines (MTCS 2011:125-126). They are described below.

Registered Archaeological Sites. Archaeological research in Ontario is often limited to discoveries made during development activities. However, this does not necessarily reflect the known and unknown, yet unrecorded archaeological history of the area. Throughout the eighteenth, nineteenth and early twentieth century, as Euro-Canadian settlers the interior of the region, some would encounter and collect evidence of past First Nations activities, in the form of stone and copper tools, or organic paraphernalia. This practice continued well into the twentieth century and is still carried out to this day by cottagers, tourists, and local residents, some who have amassed significant collections. Furthermore, there are oral references to evidence of pre-contact First Nations occupation made by the first Euro-Canadian settlers to the region, which sometimes results in sites being "recreationally" excavated by non-professional archaeologists.

With increased sensitivity towards the need to preserve cultural heritage within the Province, hundreds of archaeological projects have been undertaken within Ontario. Given the long and rich history of the St. Lawrence River Valley, the surrounding region has undergone quite extensive archaeological and historical research. With increased sensitivity towards the need to preserve cultural heritage within the Province, hundreds of archaeological projects have been undertaken along the Ontario's lakes and rivers, their tributaries, and the interior. Often initiated by development projects, including infrastructure development and improvement, subdivision applications and construction activity, First Nations and early Euro-Canadian history of the region is being revealed.

The Ontario Ministry of Tourism, Culture and Sport maintains a database of all known registered archaeological sites in the Province. A search of the database one kilometre around the study area indicates that no archaeological sites have been recorded. However, given the cultural development of the region, including the discovery of undocumented archaeological resources, there is undoubtably a significant potential for the discovery of more archaeological resources in the region. Furthermore, given the nature of archaeological assessment work, it may take several months to a couple of years before a site is registered by an archaeologist and the information is recorded at the Ministry of Tourism, Culture and Sport.

Previous Archaeological Fieldwork. The Stage 1 background study did not identify any previous archaeological investigations of the lands that are within the project area. The information that is presented herein is being included to satisfy Sections 7.5.8.4 and 7.5.8.5 of the standards and guidelines (MTCS 2011:126).

Historical Plaques and Markers. Aside from the presence of nearby registered archaeological sites, other indicators of the presence of extant archaeological remains are the proximity of historical plaques to the study area that commemorate important events in a region's past, whether it be the birth of an individual, the site a specific battle, or the construction of a unique building. Generally, historical plaques and markers point to a specific locale on the landscape that can be visited by the public. Although plaques and markers may not be placed in the exact location that the event has occurred, generally it is in close proximity, taking into consideration access to the public. In Ontario, historical plaques may be erected by the federal government through the Historic Sites and Monuments Board of Canada (HSMBC), the Ontario Heritage Trust (OHT), and local heritage agencies or historical societies. Although there are no historical plaques or markers within the study area, there are 11 within the City of Cornwall. A list of these plaques and markers is provided in Table 17

along with the registering body or agency and whether it represents a person, building, or event.

Table 17. Historical plaques and markers within the City of Cornwall.

Plaque Name	Location
Captain Samuel Anderson 1736-1836	Montreal Road, Cornwall
Cornwall Canal	Lock 20 in Lamoureux Park, Cornwall
Cornwall Grammar School	Sydney Street, Cornwall
District Court-House and Gaol 1833	Pitt and Water Street, Cornwall
The Founding of Cornwall	Water Street, Cornwall
The French Presence in Cornwall	Montreal Road, Cornwall
The Glengarry Fencibles	Fourth Street, Cornwall
Inverarden	Montreal Road, Cornwall
The Reverend John Strachan in Cornwall	Second Street, Cornwall
Right Reverend John Strachan 1778-1867	Second Street, Cornwall
United Empire Loyalists	Second Street East and Sydney Street

Condition of the Project Area. As stated in the first section of this report, the lands within the project area are situated within the Geographic Township of Cornwall, now the City of Cornwall, in Stormont County. The study area is approximately 260 hectares in size and is bounded to the north by Highway 401, to the east by the Walmart Distribution Centre, to the south by Cedar Rapids Hydro Corridor to the abandoned railway line to the CNR Railway Line and to the west by lands adjacent to the residential/commercial area along McConnell Avenue. It is approximately 3,550 metres northwest of the St. Lawrence River is situated at between 56 and 59 metres a.s.l.

The lands within the project area are situated within the Lancaster Flats physiographic region which is characterized by extremely flat land and relatively poor drainage; these features are exemplified in the project area. Vegetation within the project area included the following species: eastern white cedar, paper birch, pin cherry, staghorn sumac, sugar maple, common yarrow, purple loosestrife, oxeye daisy, bullrush, cattail, Canada thistle, bottle-brush grass, sweet vernal grass, foxtail, common plantain, ground hemlock, sweet fern, juniper and beaked hazel. Soils included mainly poorly drained materials that are typically found on level to depressional topography. This was not unexpected as the majority of the property has been identified as the Summerstown Swamp (historic background study). Historically this area is characterized by a lack of residential, commercial, industrial, and even agricultural development. Its extent, covering all but the study area's most northern and northwestern reaches, is depicted in Map 9. It is also important to note in this section that depending on seasonal precipitation rates, the extent of the swamp varies.

There were also some disturbed areas throughout the property, mostly as a result of development in the surrounding area.

The description of the proposed undertaking that is presented herein has been prepared to satisfy the standard in Section 7.5.8.2 of the standards and guidelines (MTCS 2011:125).

Property Inspection

According to the MTCS Standards and Guidelines for Consultant Archaeologists (2011:15-16):

> A property inspection consists of a visit to the property to gain first-hand knowledge of its geography, topography and current condition and to evaluate and map archaeological potential. It is a visual inspection only and does not include excavation or collection of archaeological resources.

A property inspection is an optional procedure which may be undertaken when a greater level of detail is needed to recommend assessment strategies. The following standards identified with the MTCS Standards and Guidelines for Consultant Archaeologists should apply if a property inspection is conducted:

1. Inspect the entire property and its periphery. The inspection may be either systematic (e.g., every 30 metres) or random spot-checking. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential.
2. Inspect the property when weather conditions permit good visibility of land features. Do not inspect when weather conditions (e.g., snow cover, frozen ground, excessive rain or drought) may reduce the chances of observing features of archaeological potential.
3. Confirm that previously identified features of archaeological potential are present where they were previously identified, e.g.:
   a. watercourses are present where mapped and are not artificial or altered
   b. land formation are natural and not artificial
4. Identify and document additional features of archaeological potential not visible on mapping, e.g.:

a. knolls, ridges or plateaux too small to show on large-scale topographic maps
b. relic water channels
c. glacial shorelines
d. patches of well-drained soils in areas of heavy soil
e. slightly elevated areas in low and wet areas

5. Identify and document features that will affect assessment strategies, e.g.:

a. woodlots
b. small bogs, swamps or permanently wet areas
c. steeper grade than indicated on maps
d. overgrown vegetation that does not allow ploughing
e. heavier soils than expected
f. recent land disturbances such as regrading, depositing fill or clearing vegetation

6. Identify and document structures and built features that will affect assessment strategies, e.g.:

a. heritage structures or landscapes

b. cairns, monuments or plaques
c. cemeteries

A site visit was conducted on September 28, 2011 in order to document the geography, topography and current conditions of the study area. During the site visit, three team members of The Central Archaeology Group Inc. visually surveyed the entire project area and its periphery by foot and at five to ten metre intervals. Conditions for the inspection were ideal with partly cloudy skies and an average temperature of 20.6^{o}C. Survey comprised walking the development area and the outlying lands in order to identify features and to determine if the property retained archaeological potential.

Current conditions.

As stated above, our survey noted that the study area included some disturbed areas throughout the property, mostly as a result of development in the surrounding area. The property was also extremely flat land and had very poor drainage. Vegetation included eastern white cedar, paper birch, pin cherry, staghorn sumac, sugar maple, common yarrow, purple loosestrife, oxeye daisy, bullrush, cattail, Canada thistle, bottle-brush grass, sweet vernal grass, foxtail, common plantain, ground hemlock, sweet fern, juniper and beaked hazel. Historically this area is characterized by a lack of residential, commercial, industrial, and even agricultural development. Its extent, covering all but the study area's most northern and northwestern reaches, is depicted in Map 9.

Map 17 shows the location of the points from which the seven photographs were taken. A description of each photograph is provided in the table below (Table 18).

Table 18. Photograph # (from the site conditions) and description.

Photo #	Description
1	Viewing north from the southeast corner of the project area. Note the disturbance in the form of landscaping for the large industrial complex in the background.
2	Viewing east along the northern boundary of the project area. Note that this section of the project area has been significantly altered by grading of the soils to provide a sound buffer from highway traffic.
3	Viewing east along Highway 401 and the northern boundary of the project area.
4	Viewing northeast into the project area from the northwest corner of the property.
5	Viewing north along the abandoned rail line from the central section of the project area.
6	Viewing east from the southeast corner of the project area. Note the disturbance.
7	Viewing northwest from the southwest corner of the project area. Note that this photograph illustrates the low-lying and wet nature of the project area.

Analysis and Conclusions

The standard specified within Section 7.7.3 of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011:132) requires that this section address the following statements: 1) "Identify and describe areas of archaeological potential within the project area." and 2) "Identify and describe areas that have been subject to extensive and deep land alterations {e.g., development of other activity) that have severely damaged the integrity of archaeological resources and have removed archaeological potential." The information presented below is intended to satisfy this standard.

Results.

The Stage 1 archaeological background study of the Cornwall Business Park Master Plan project area was undertaken to examine, evaluate, and determine the overall archaeological and heritage potential within the project limits.

This stage of the archaeological assessment consisted of background research. This research is conducted in order to:

- Collect all readily available documentary information (i.e., archaeological reports, primary and secondary literary sources, etc.) on any previous archaeological survey completed within the bounds of the study area.

- Determine the locations of any registered and unregistered archaeological sites within and adjacent to the property.

- Identify areas of archaeological potential through a review of geographic, land use, and historical information as well as through a physical survey of the entire property, which have the potential to represent concerns for a Stage 2 archaeological property survey.

- Develop a First Nations and Euro-Canadian historic framework for assigning levels of potential significance to any new sites discovered during the fieldwork.

Assigning levels of potential archaeological significance is employed by applying provincial environmental assessment guidelines (Weiler 1980). The information includes the identification and evaluation of any feature that has one or more of the following attributes:

- Potential can be determined via archaeological exploration, survey, or fieldwork. The information gleaned from these activities can provide answers to hypothesized questions (i.e., relate to particular times and places) regarding events and/or processes that occurred in the past, thereby adding to our knowledge and appreciation of history.

✺ Potential may be determined through archaeological exploration, survey, and fieldwork that may contribute to testing the validity of anthropological principles, cultural change and ecological adaptation, thereby contributing to the understanding and appreciation of our human-made heritage.

✺ The possibility that various technical, methodological, and theoretical advances might occur during archaeological investigation of a feature, alone or in association with other features exists. This therefore may contribute to the development of better scientific means of understanding and appreciating our human-made heritage (Weiler 1980:8).

The Ontario Ministry of Tourism, Culture and Sport also provide the *Archaeological Potential Checklist* which identifies land features that could indicate where archaeological resources are more likely to be located (Table 19).

Evaluating archaeological potential of an area involves the assessment of various criteria. The most common criteria used to evaluate archaeological potential relates to its physical setting which may include potable water sources, elevated landforms, and well-drained areas to which First Nations settlement was often oriented, as well as the presence of fertile soils suitable for cultivation.

Additional factors may include:

✺ the presences of known archaeological sites and whether they are located within a radius of 250 m of the study area;

✺ the presence of watersources in the area (i.e., primary water source within 300 m, secondary water source within 300 m, ancient water source within 300 m);

✺ the presence of elevated topography within or immediately adjacent to the project area;

✺ the presence of pockets of sandy soil within clay or rocky areas;

✺ the presence of particular land formations such as mounds, caverns, or waterfalls which may denote spiritual significance;

✺ the presence of resource rich areas such as primary, secondary, or ancient watersources, spawning fish, concentration of wild plants;

✺ the presence of Euro-Canadian colonization indicators such as cemeteries, standing structures;

✺ the presence of transportation routes within a 100 m radius, such as portages, trails, colonization roads, railways, canals, harbours;

✺ whether the property has been designated a Heritage Property; and,

✺ that there is evidence from documentary sources, local knowledge, or oral histories concerning the property with historical events or activities.

Table 19. Checklist for determining archaeological potential.

	Feature of Archaeological Potential	Yes	No	Not Available	Comment
1	Known archaeological site within 250 m.		x		If Yes, potential determined.
	PHYSICAL FEATURES				
2	Is there water on or near the property?	x			If Yes, what kind of water?
2a	Primary water source within 300 m.		x		If Yes, potential determined
2b	Secondary water source within 300 m.	x			If Yes, potential determined
2c	Past water source within 300 m.		x		If Yes, potential determined
3	Elevated topography.		x		If Yes, and Yes for any of 4-9, potential determined
4	Pockets of sandy soil in a clay or rocky area.		x		If Yes, and Yes for any of 3, 5-9, potential determined
5	Distinctive land formations.		x		If Yes, and Yes for any of 3-4, 6-9, potential determined
	HISTORIC USE FEATURES				
6	Associated with food or scarce resource harvest areas.		x		If Yes, and Yes for any of 3-5, 7-9, potential determined
7	Indications of early Euro-Canadian settlement.		x		If Yes, and Yes for any of 3-6, 8-9, potential determined
8	Associated with historic transportation route within 100 m.		x		If Yes, and Yes for any of 3-7, 9, potential determined
9	Contains property designated under the Ontario Heritage Act.		x		If Yes, and Yes for any of 3-8, potential determined
	APPLICATION SPECIFIC INFORMATION				
10	Local knowledge.		x		If Yes, potential determined
11	Recent (post-1960) disturbance (confirmed extensive and intensive)			Some	If Yes, no potential

Each of the criteria listed above apply in evaluating potential for both pre-contact and historic First Nations sites and historic Euro-Canadian sites of the eighteenth and nineteenth centuries. Finally, consideration may be given to whether past archaeological surveys have cleared all or part of the property of archaeological concerns by confirming that it does not contain extant archaeological remains, regardless of their inherent potential.

Archaeological Potential.

There are a number of criteria used to establish archaeological potential. The Ministry of Tourism, Culture, and Sport has set a number of guidelines that establish archaeological potential within the distance of certain natural and human-made features on the landscape. Natural features include the presence of potable water, primary water sources (i.e., lakes, rivers, streams, and creeks), secondary water sources (i.e., intermittent streams and creeks, springs, marshes, and swamps), elevated landforms (i.e., eskers, drumlins, knolls, ridges, and plateaux), especially in low and wet areas, distinctive land forms that may have special or spiritual significance (i.e., waterfalls, rock outcrops, caverns, mounds, and promontories), and soils suitable for habitation (i.e., pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground), and cultivation (i.e., fertile soil). Human-made features that can influence potential are transportation routes (i.e., portages, trails, roads, and railways), early settlement (i.e., homesteads, schools, military installations and early industry), and known archaeological sites.

In addition, features that are no longer present on the landscape are also considered, including relic water channels (indicated by a clear dip or swale in the topography) and glacial shorelines (indicated by the presence of raised sand or gravel beach ridges). Past and present resources available on the landscape are also considered. These can include certain species of plants for food and medicinal purposes, animals, including their migratory routes and spawning areas, and raw materials (i.e., chert outcrops, quartz, copper, etc.), and early Euro-Canadian industry (i.e., logging, prospecting, and mining) and other activities. There are features on the landscape that can also lower archaeological potential. These include areas that have a slope of greater than 20^0, permanently wet areas (both in the past and the present), or lands that have underwent recent major landscaping or development involving grading below topsoil.

Considering the criteria above that was gathered from various sources during the Stage 1 background study, and the location of the project area within an archaeological sensitive area, a database of all the natural and man-made features discussed was created and a buffer, indicating a moderate to high potential for the discovery of archaeological resources, was plotted on the utilities plates (Map 18). Areas that did not possess any of the above-mentioned features, had a slope greater than 20^0, or had underwent extensive below topsoil grading, especially from infrastructure improvements were deemed to have low archaeological potential.

Potential in the project area is limited to a few sections around the limits of the project area, although it is probable that the southern sections may also be low-lying and wet. The reason is wholely due to the presence of the Summerstown Swamp which encompasses the majority of the property. Historically this area is characterized by a lack of residential, commercial, industrial, and even agricultural development. Furthermore, background research into the property illustrated that although these lots (Lots A to C and 1 to 6) were granted in the late eighteenth and early nineteenth centuries, no buildings were ever constructed upon the land.

Furthermore, The Central Archaeology Group Inc. property inspection of the project area illustrated that much of the land retained low potential (i.e., no indications of early settlement in the form of shanties or log buildings, no apple or lilac trees [both of which are indicative of Euro-Canadian settlement], no elevated topography, no pockets of sandy soil, no distinctive land formations, the presence of the swamp and some areas which were disturbed from recent construction projects). In addition, depending on seasonal precipitation rates, larger portions of the southern section of the project area may be subject to flooding. This is illustrated by the numerous historic maps provided in Appendix B which show a varying extent limit of the Summerstown Swamp.

Recommendations

As detailed within the archaeological context section of this report, the Stage 1 background study determined that no past archaeological investigations had been carried out within the lands that will be subject to impact for the proposed development and that no archaeological sites had been recorded within the subject lands or within close proximity to them. In consequence, possible archaeological planning concerns for the proposed undertaking are limited to the potential for as-yet undiscovered archaeological remains.

Under the Ontario Heritage Act (R.S.O. 1990), it is a requirement of archaeological consulting licences that consultants prepare and submit assessment reports to the Ontario Ministry of Tourism, Culture and Sport. Archaeological Review Officers of the Ministry then review each report to ensure that the assessment and the report satisfy consulting licence requirements under the Act and other pertinent legislation, and that they conform to current archaeological standards and guidelines. If the report and the assessment do so conform, the pertinent Archaeological Review Officer then issues a letter confirming that and accepting the report into the Provincial registry of archaeological reports.

Permission to access the area and to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by Chris Miller, GENIVAR, on behalf of the property owner. Based on the results of the archaeological assessment, the following recommendations are provided for consideration to the Ontario Ministry of Culture and Tourism and the Proponent, and are subject to approval by the Ontario Ministry of Culture and Tourism:

1) Areas that have been identified as having moderate to high potential are located within treed areas. It is recommended that these areas undergo a Stage 2 test pit survey, where shovel-sized test pits, no smaller than 30 cm in diameter, be excavated into the first 5 cm of subsoil to examine for stratigraphy, cultural features, or evidence of fill at 5 m intervals. Soil should be screened through mesh no greater than 6 mm and all test pits should be backfilled.

2) In areas that have been deemed to have moderate to high potential for the discovery of archaeological remains, but test pitting is deemed to be difficult or impossible because of undisturbed forest floors that exhibit a shallow soil horizon, a surface inspection be conducted in place of test pitting. Surface inspection should be carried out by clearing at least a 2 m diameter of vegetation using a soft-toothed leaf rake with close hands and knees visual inspections. If archaeological resources are encountered, clear a 10 m square around the positive cleared area. If the positive cleared area continues beyond the 10 m, resume clearing 2 m areas at 5 m intervals, noting where the positive cleared areas end.

3) The remaining portions of the property have low archaeological potential. This was determined based on a property inspection, background research and GIS and mapping of topographical features. Thus, no further action is required.

Advice on Compliance with Legislation

This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act,* R.S.O. 1990, C. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

It is an offense under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Report referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act.* The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Cemeteries Act,* R.S.O. 1990 C. 4 and the *Funeral, Burial and Cremation services Act,* 2002, S.O. 2002, C. 33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

The licensee shall hold the archaeological collections, including copies of the study material and original notes generated during the course of research, in trust, unless it is transferred to an appropriate public institution as per the terms and conditions of holding a professional license.

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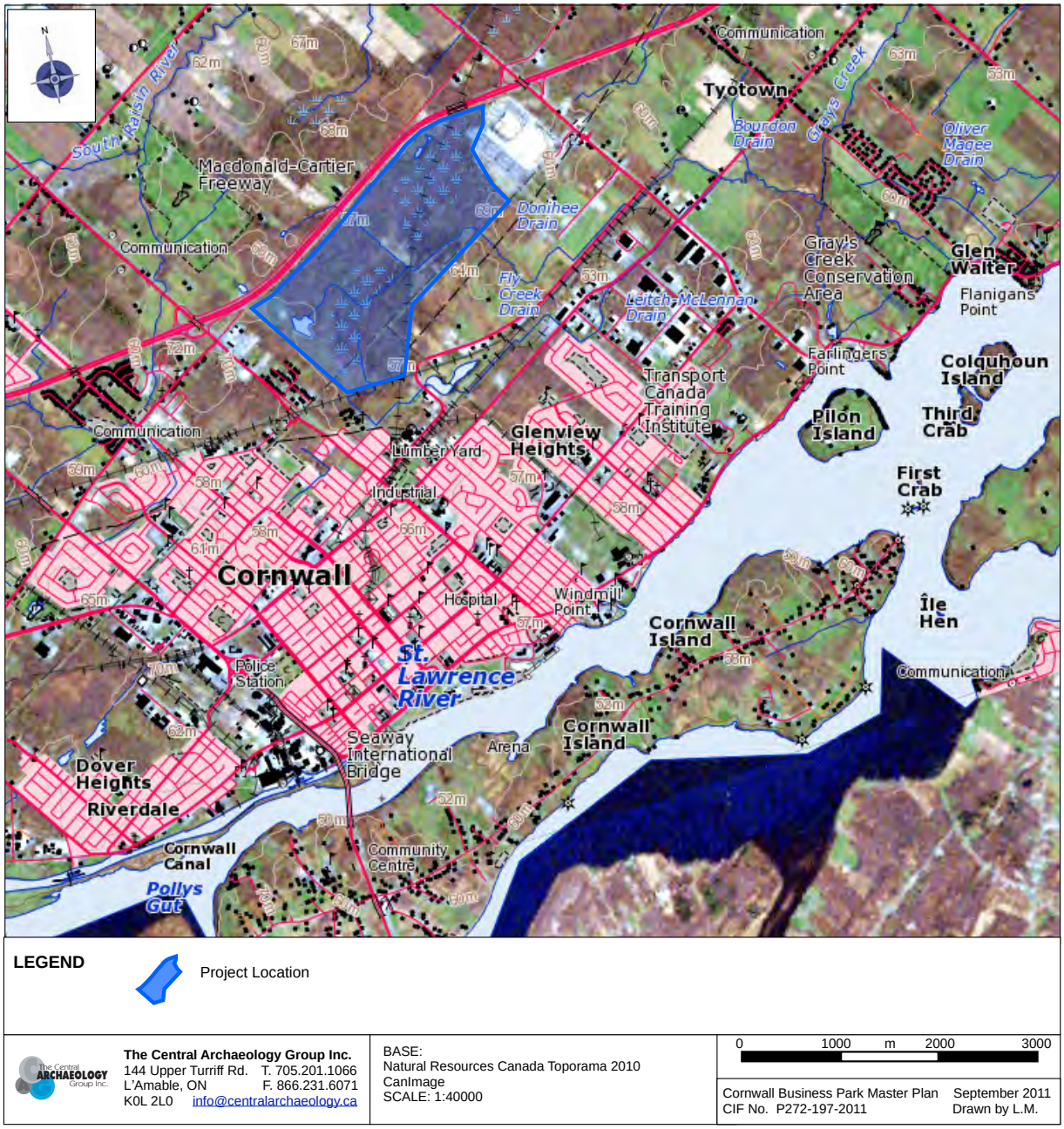
Appendix A - Development Plans

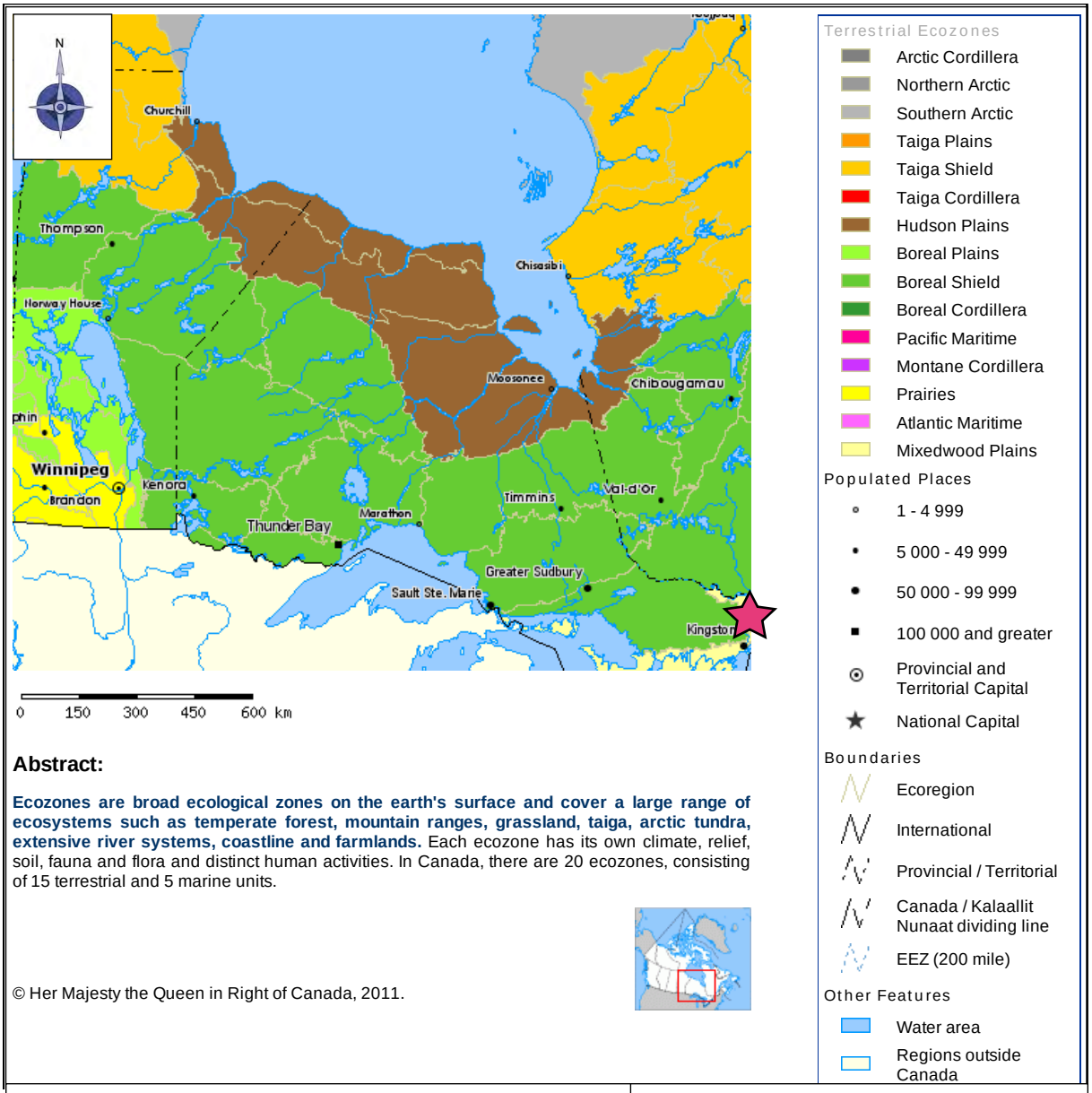
Plan 1. Plan of the project area.

Appendix B - Maps and Images

Maps



Map 1. Location of project area.



Abstract:

Ecozones are broad ecological zones on the earth's surface and cover a large range of ecosystems such as temperate forest, mountain ranges, grassland, taiga, arctic tundra, extensive river systems, coastline and farmlands. Each ecozone has its own climate, relief, soil, fauna and flora and distinct human activities. In Canada, there are 20 ecozones, consisting of 15 terrestrial and 5 marine units.

LEGEND

Project Area

Cornwall Business Park Master Plan September 2011

PIF No. P272-197-2011 Drawn by L.M.

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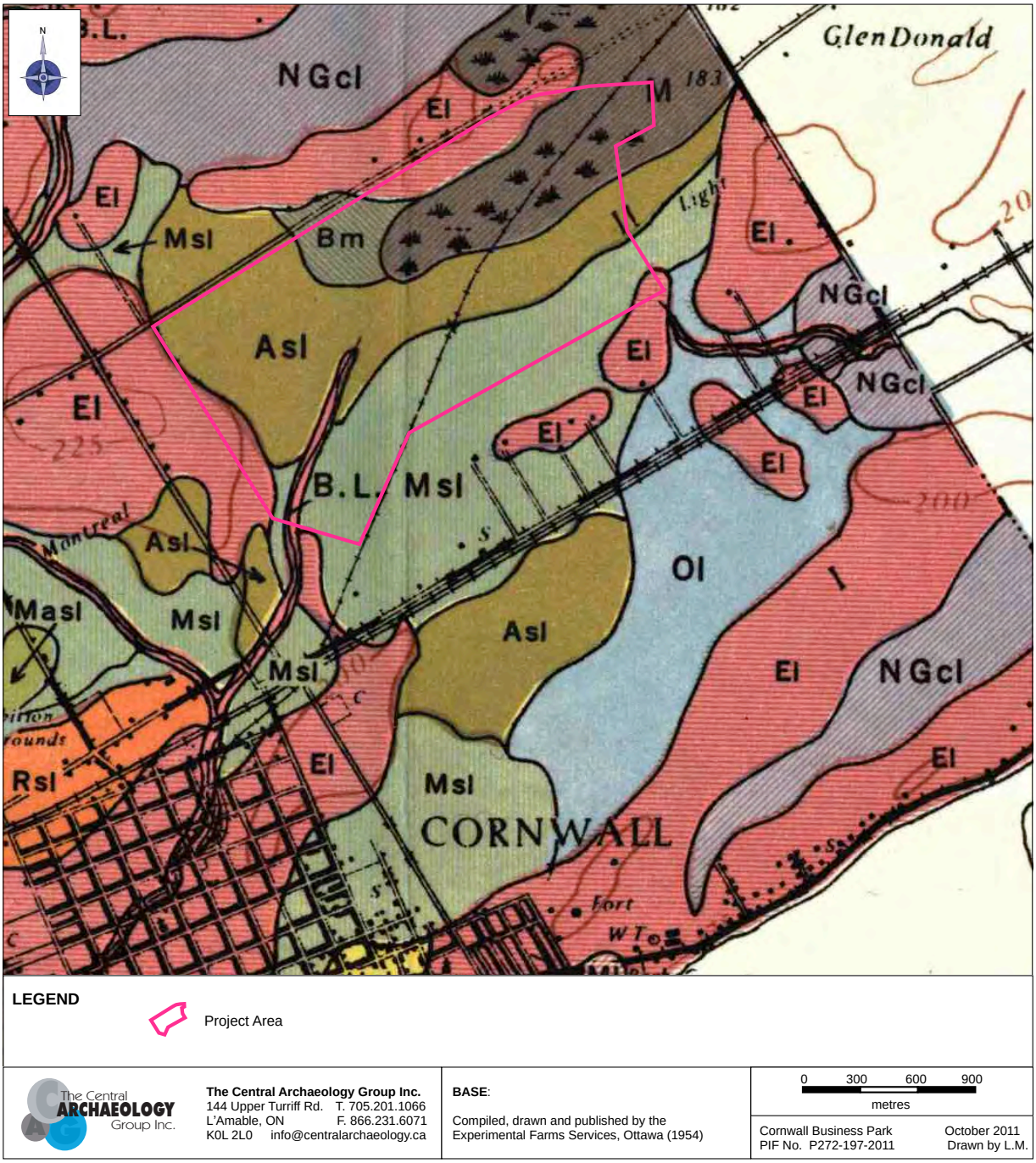
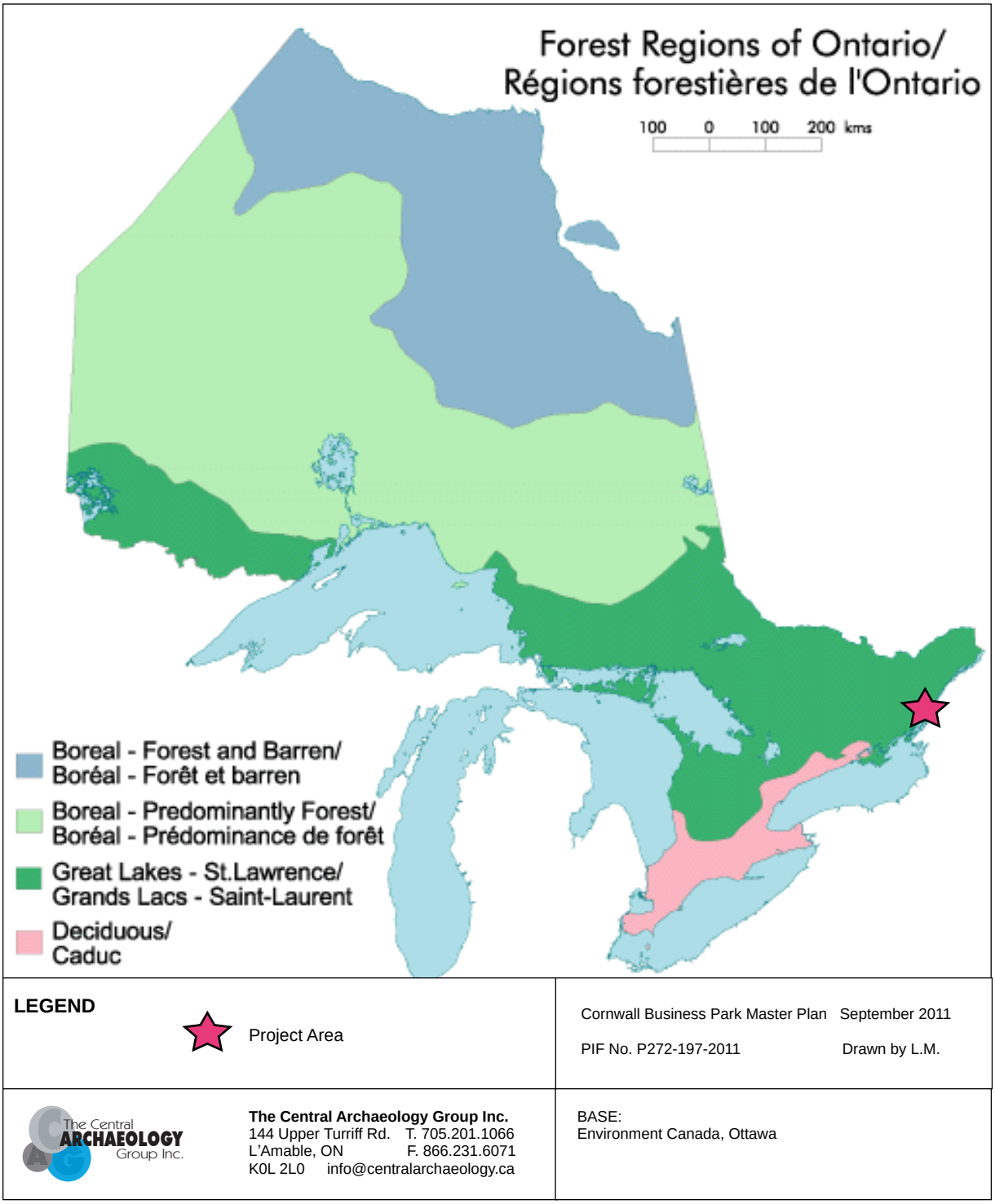
K0L 2L0 info@centralarchaeology.ca

BASE:
Environment Canada, Ottawa

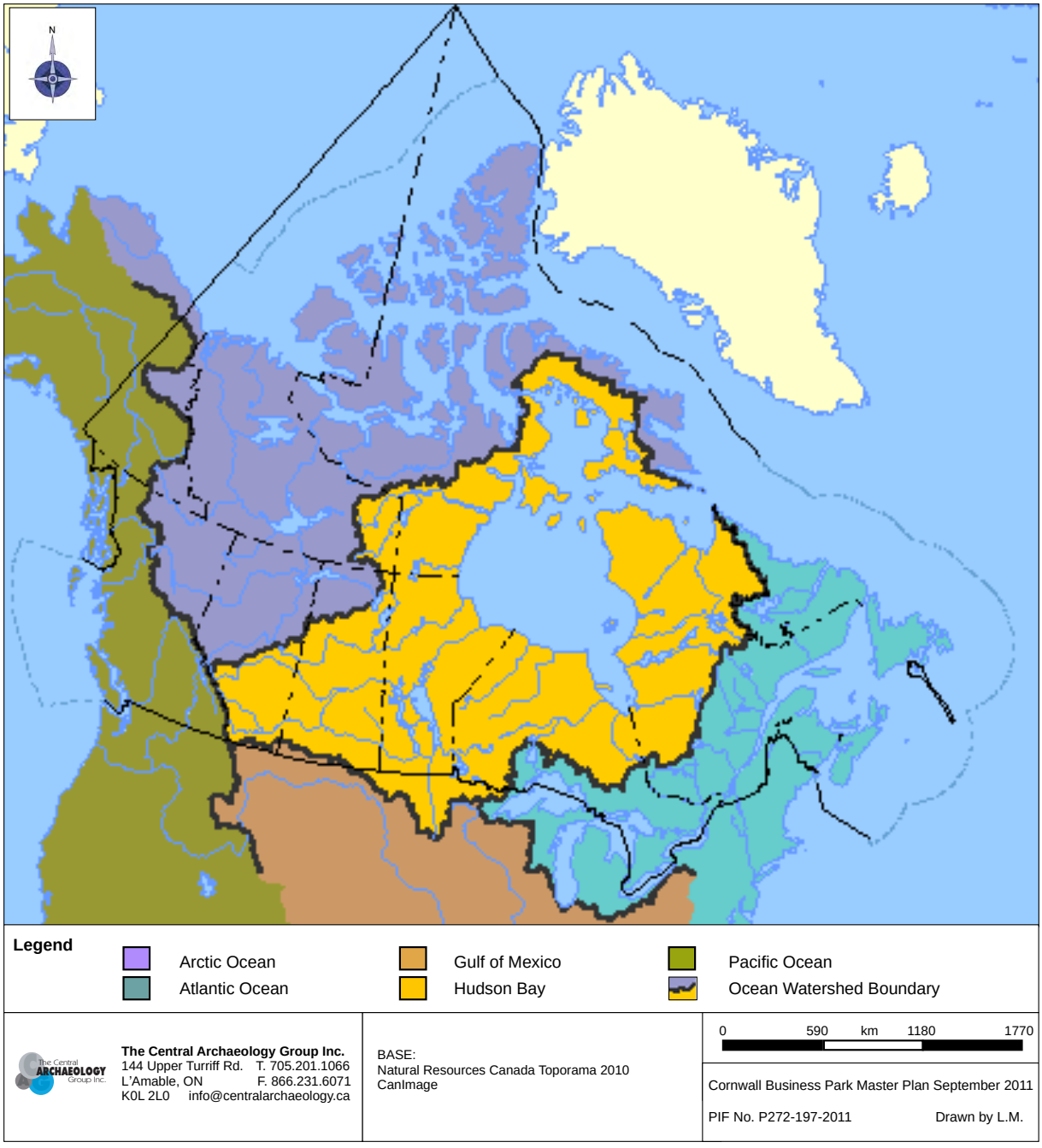
Map 2. Ecozones of Ontario (Environment Canada 2012).



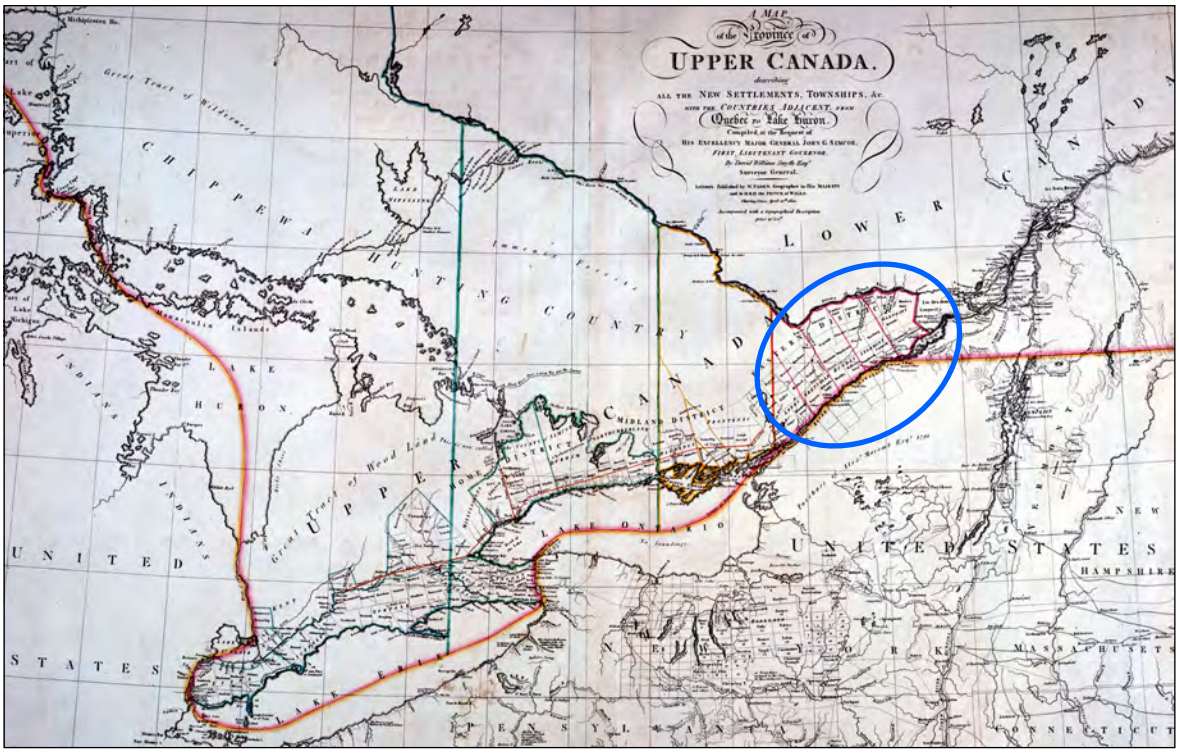
Map 3. Soil map of the project area.



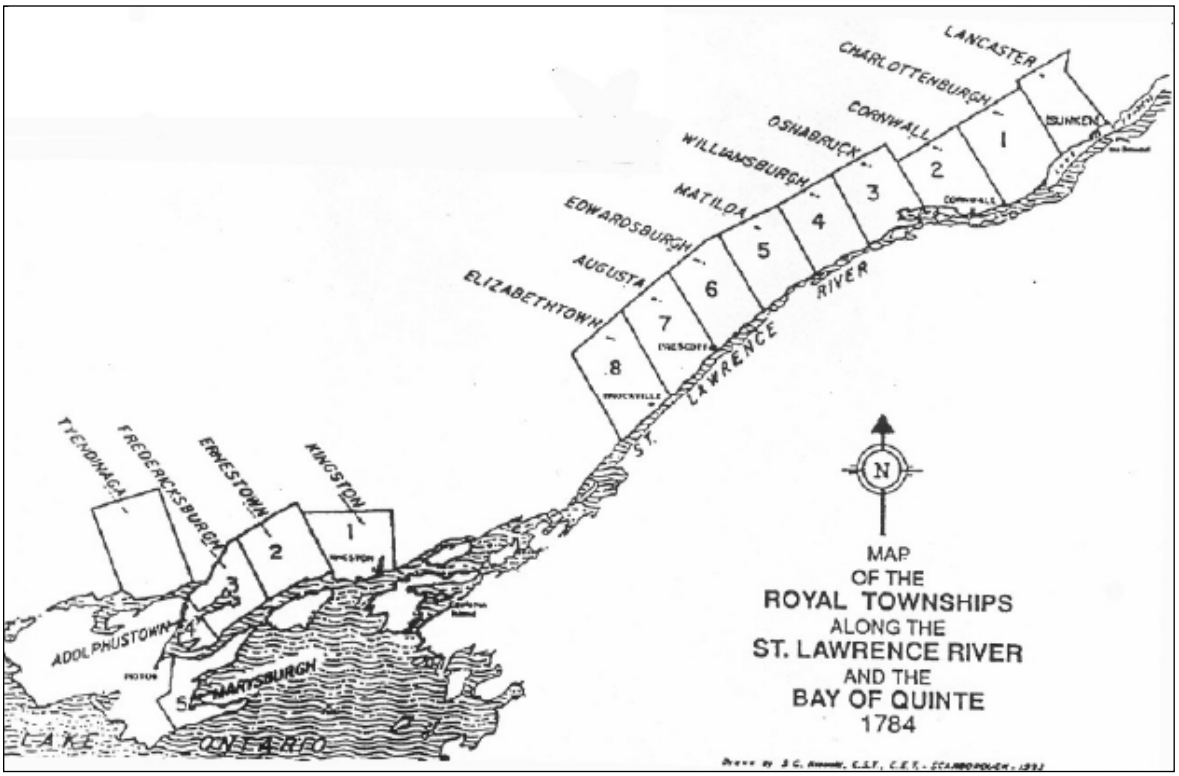
Map 4. Forest ecoregions of Ontario (Environment Canada 2012).



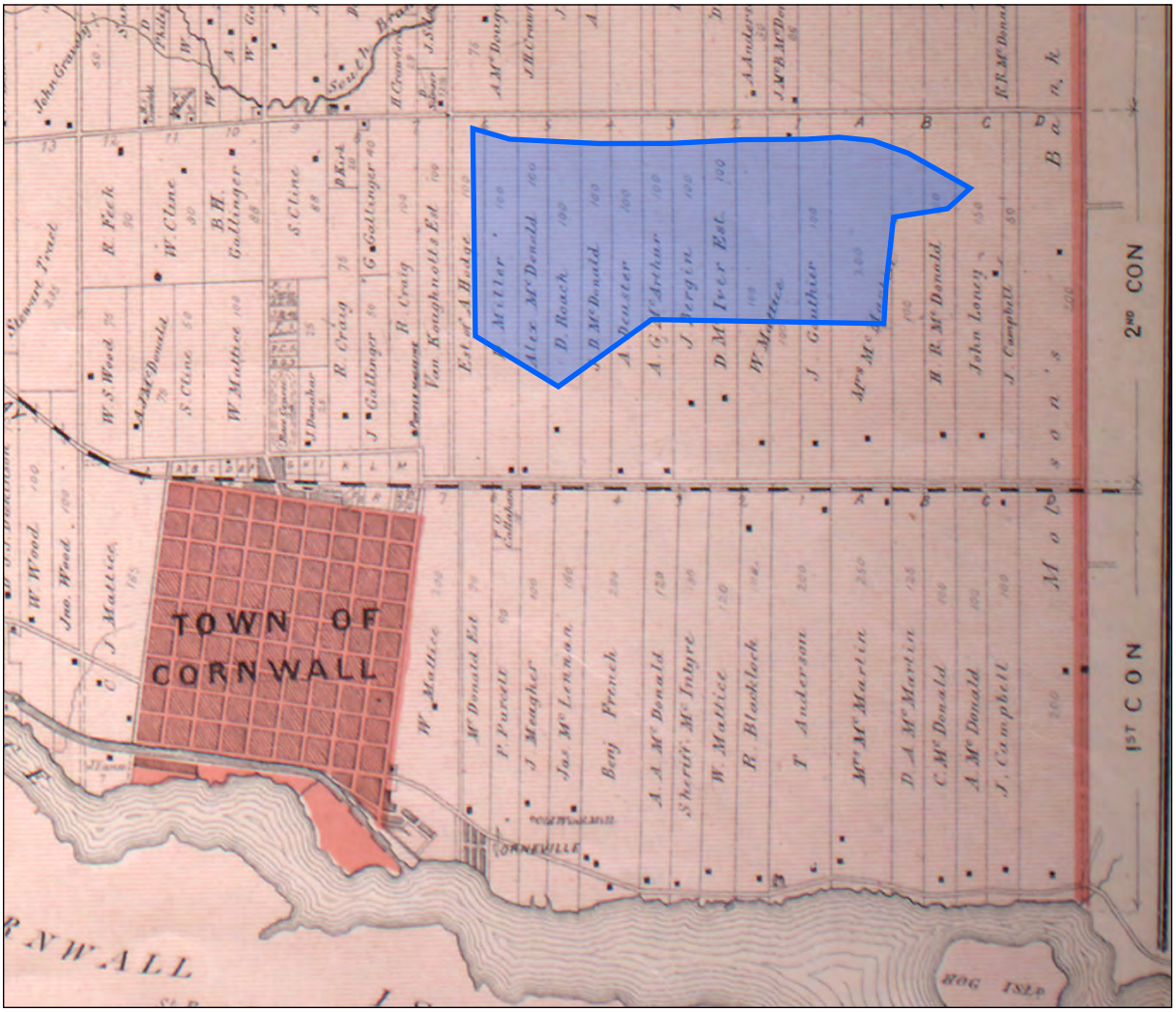
Map 5. Watersheds of Canada.



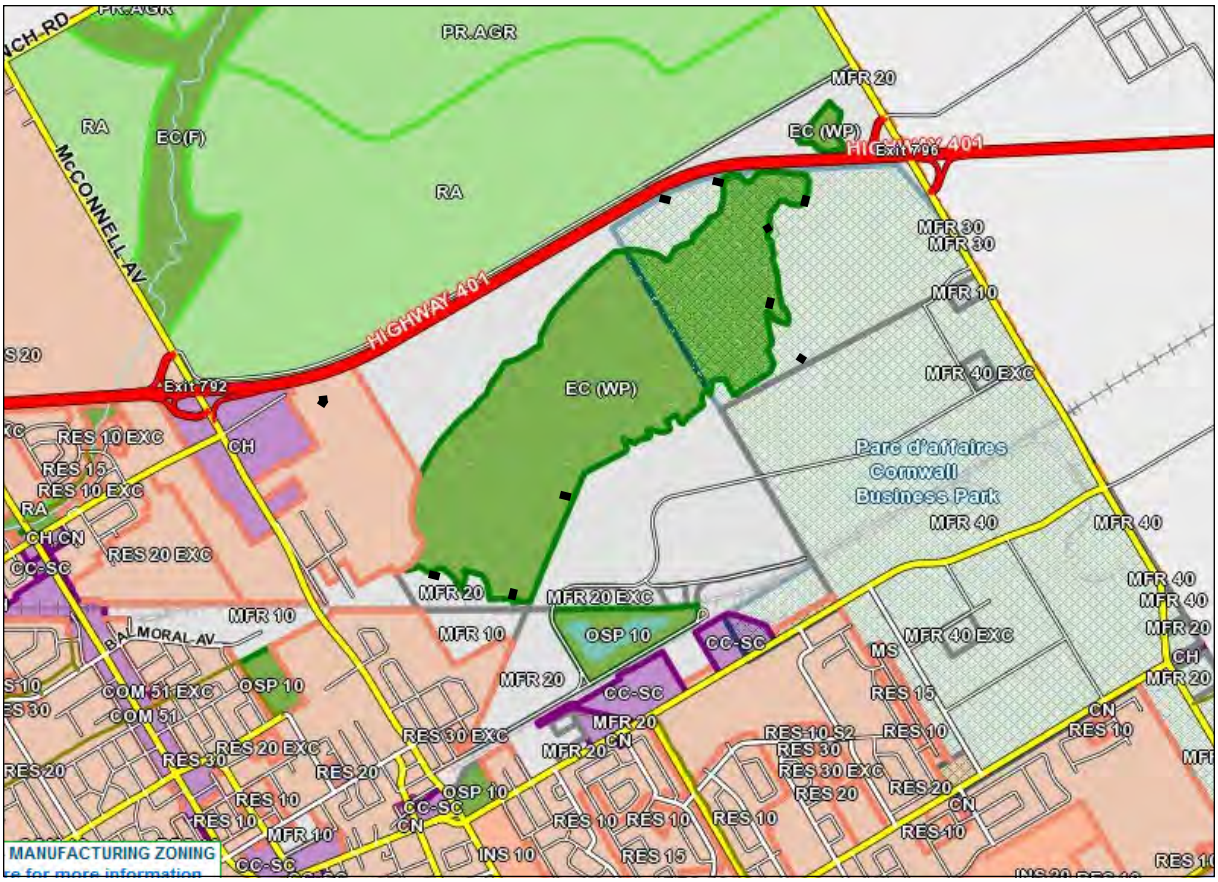
Map 6. Map of Upper Canada from 1800 (Luscombe nd.). District of Lunenberg is circled in blue.



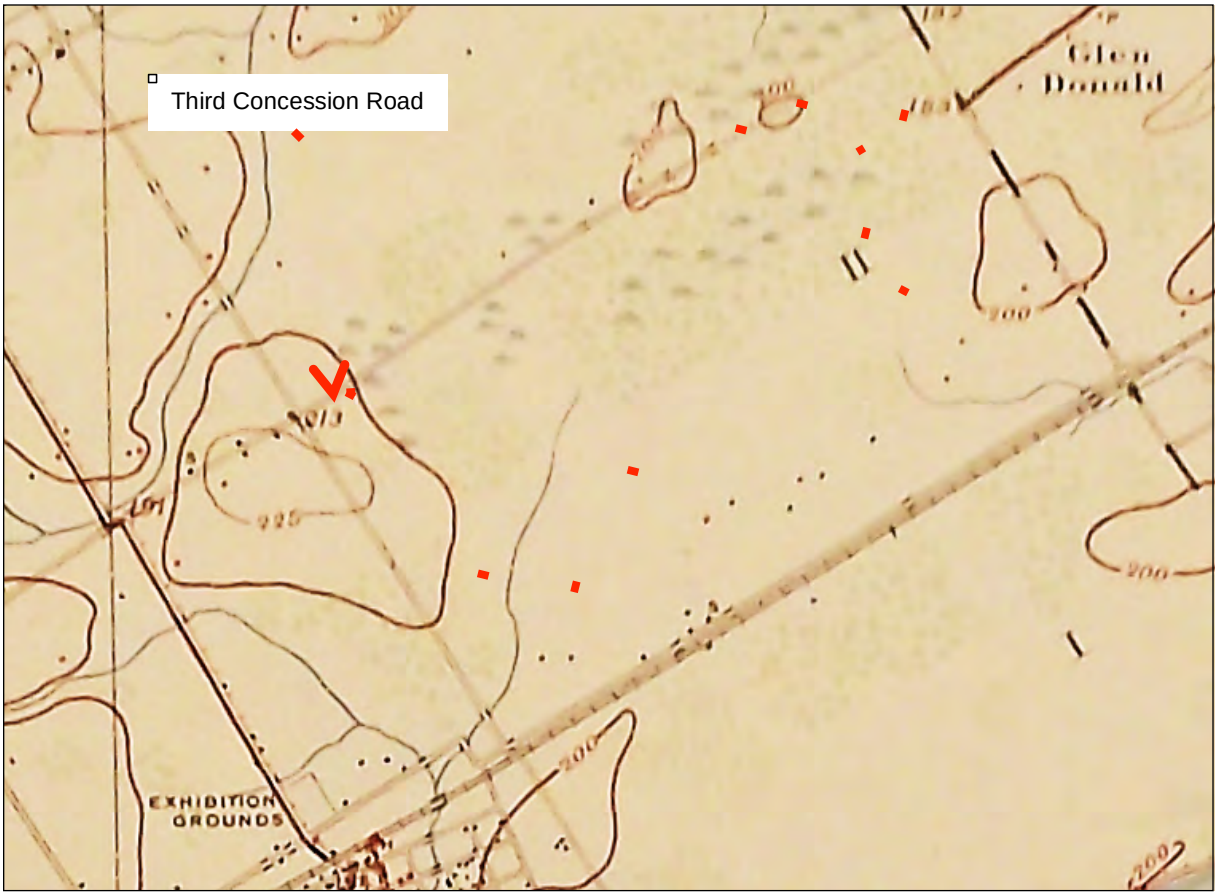
Map 7. Map of the Royal Townships.



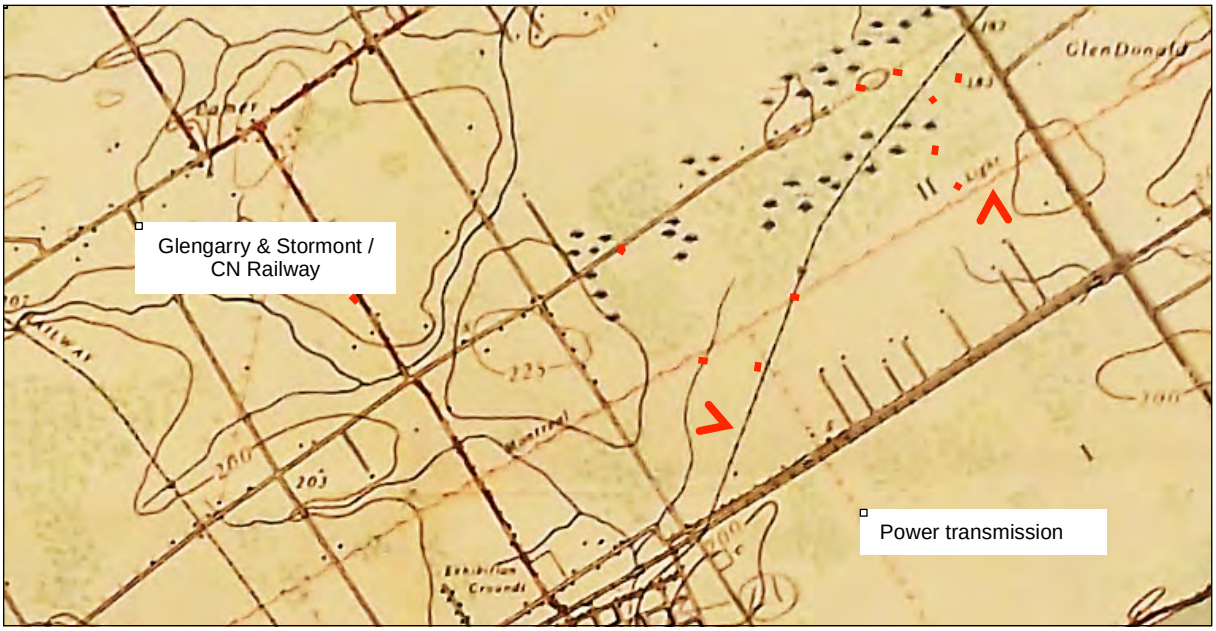
Map 8. Geographic Township of Cornwall (Belden 1879). Project area is in blue.



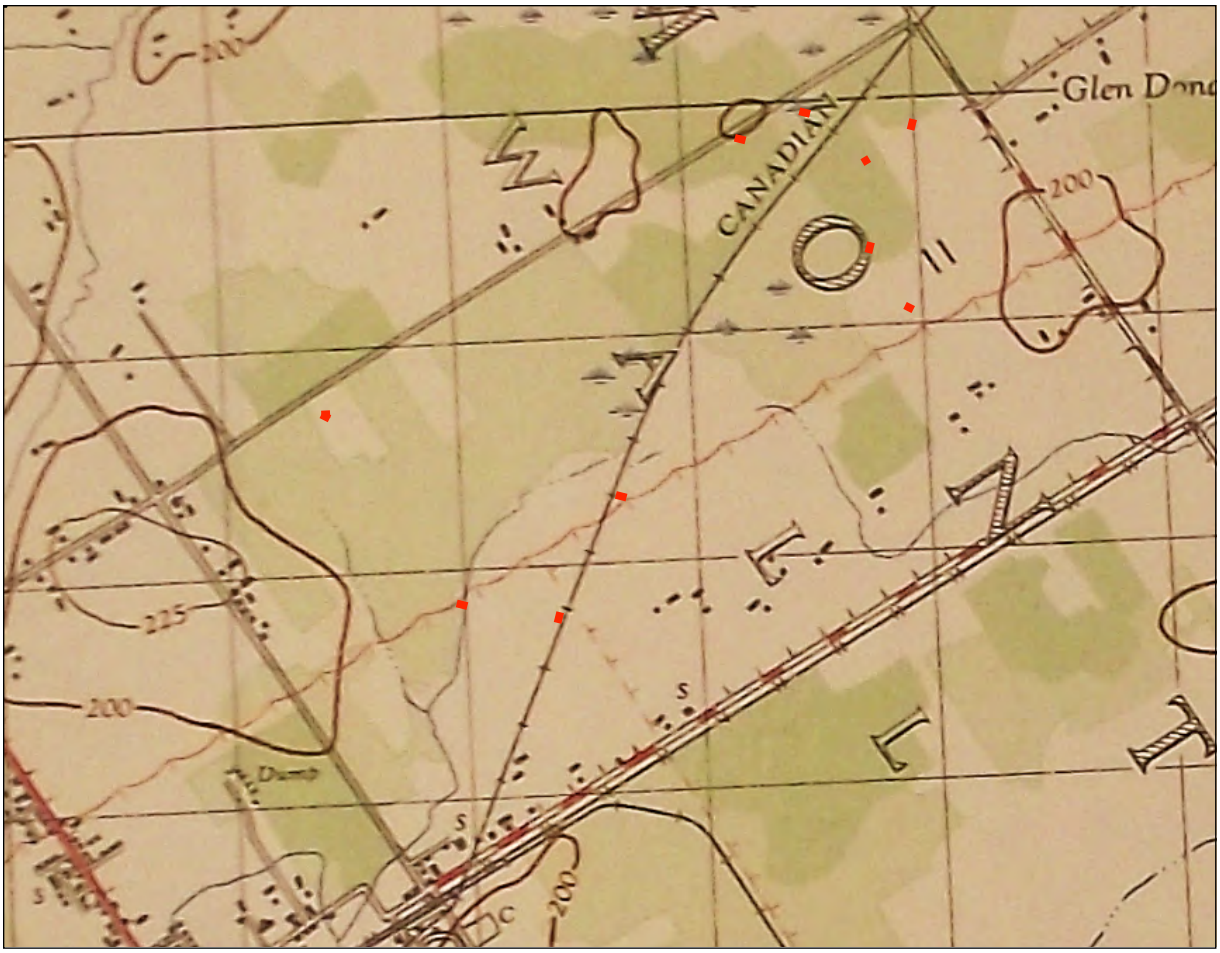
Map 9. Parametres of the Summertown Swamp floodplain (City of Cornwall 2012).



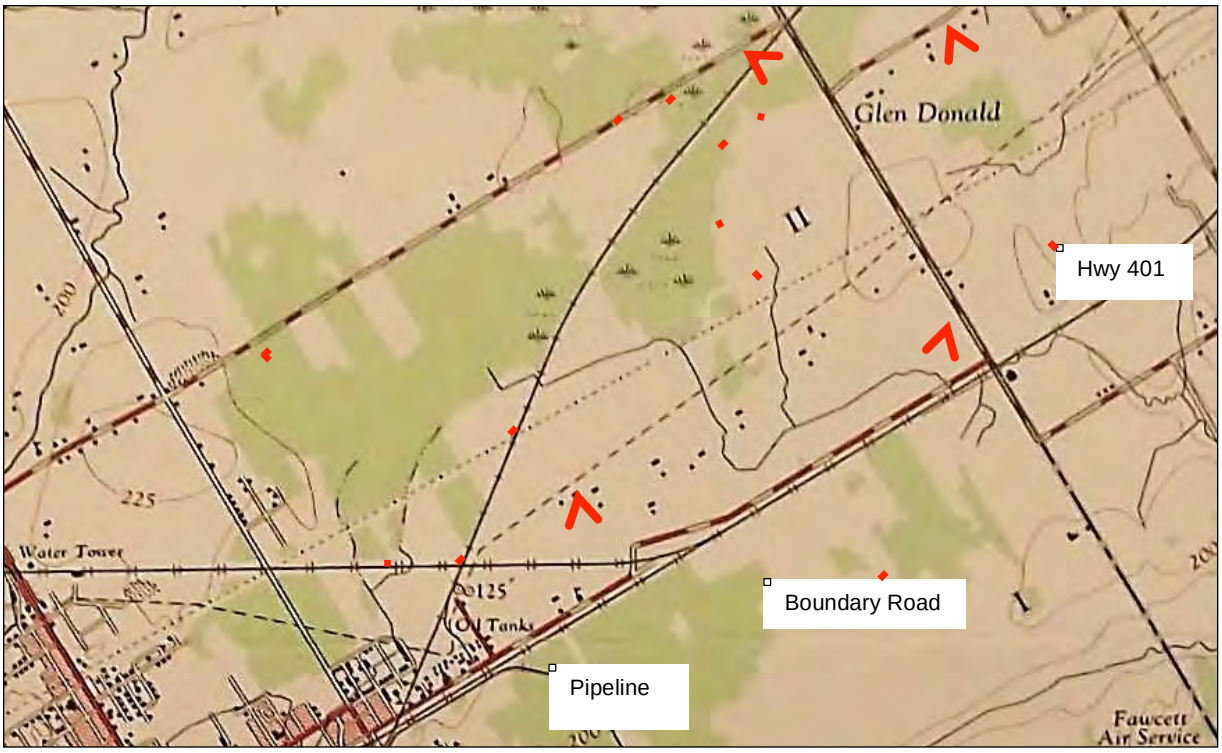
Map 10. The study area in 1909 (Department of Militia and Defence 1909).



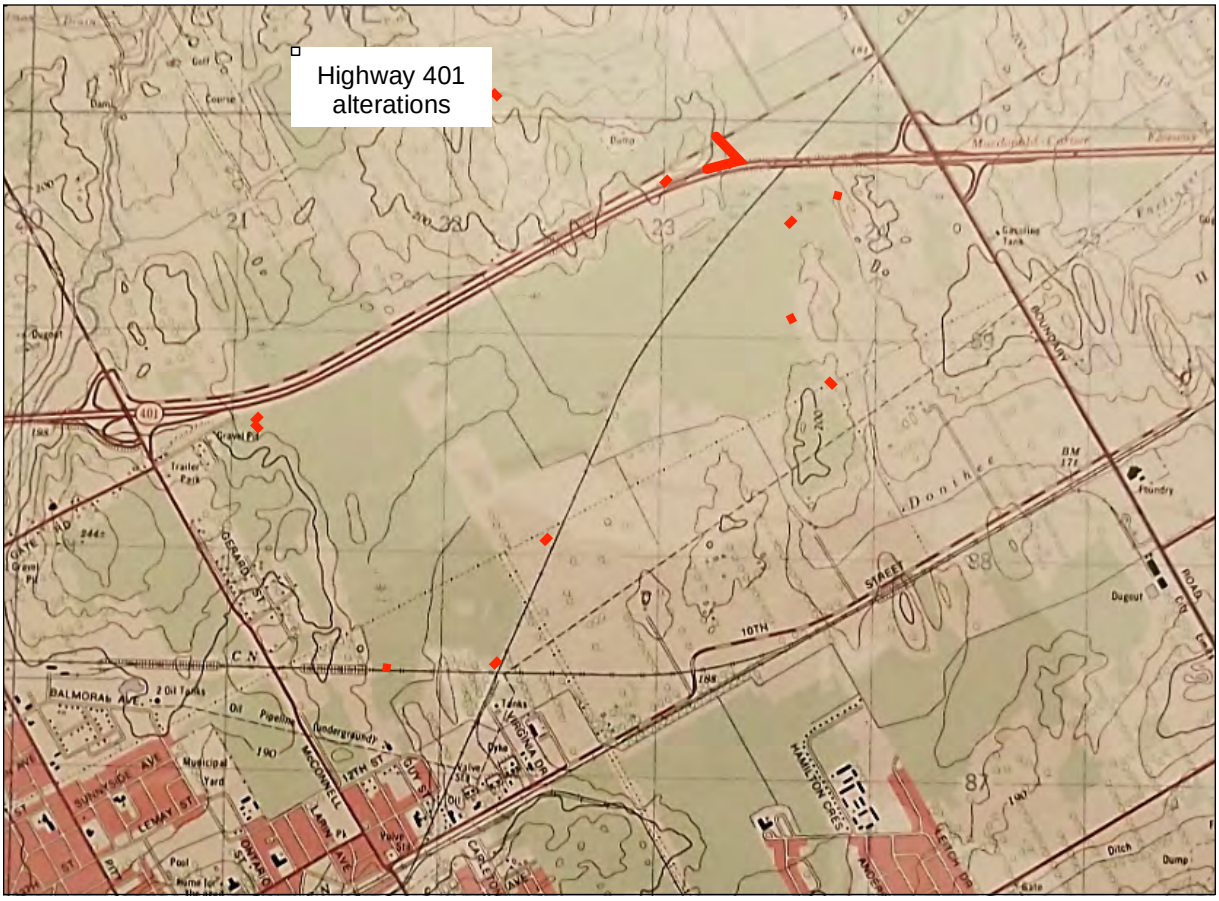
Map 11. The study area in 1937, showing the 1914 railway line built for the Glengarry and Stormont Railway Company (Department of National Defence 1937).



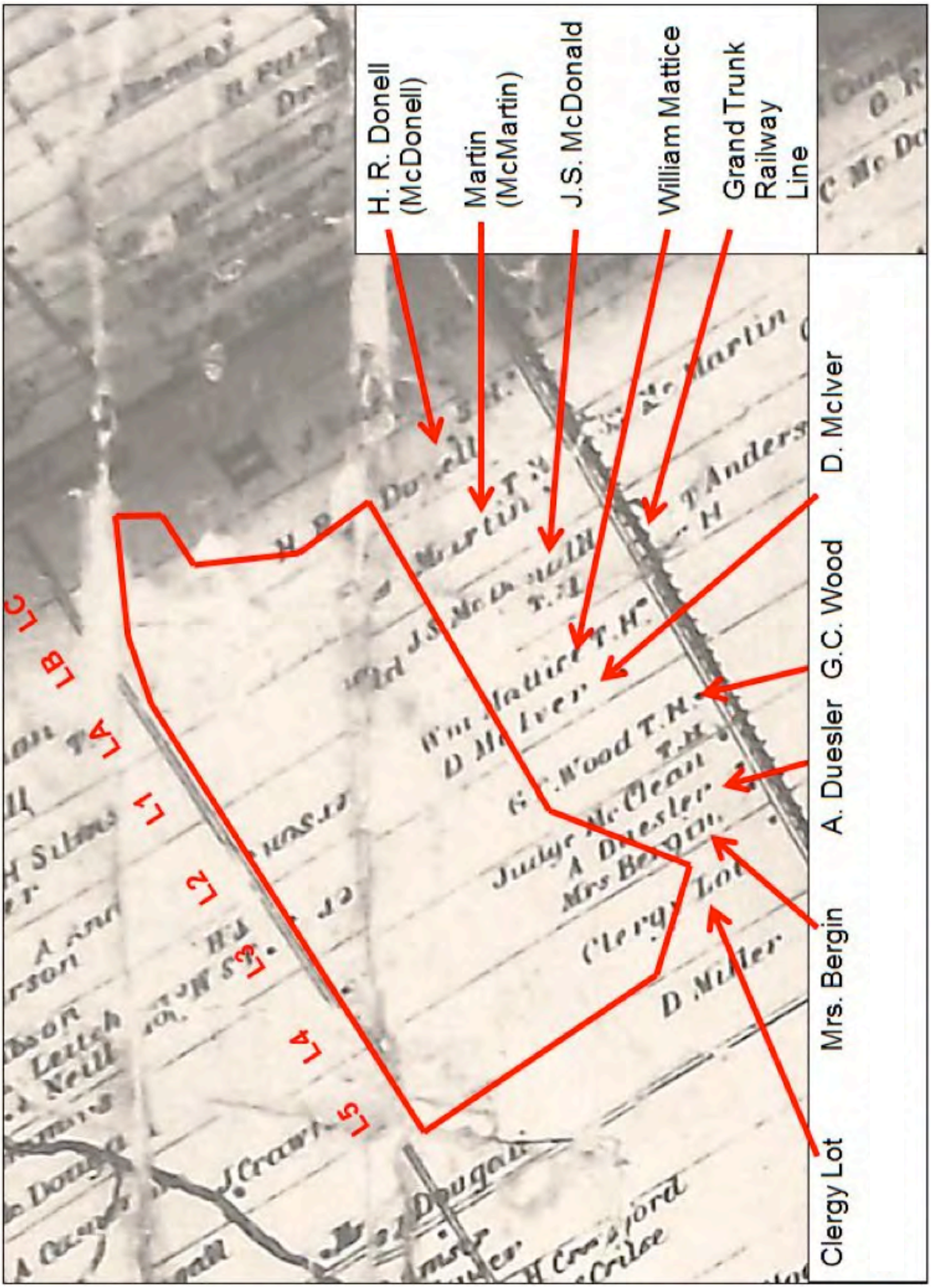
Map 12. The study area in 1949, showing the Cedar Rapids Transmission Company power line (Army Survey Establishment 1949).



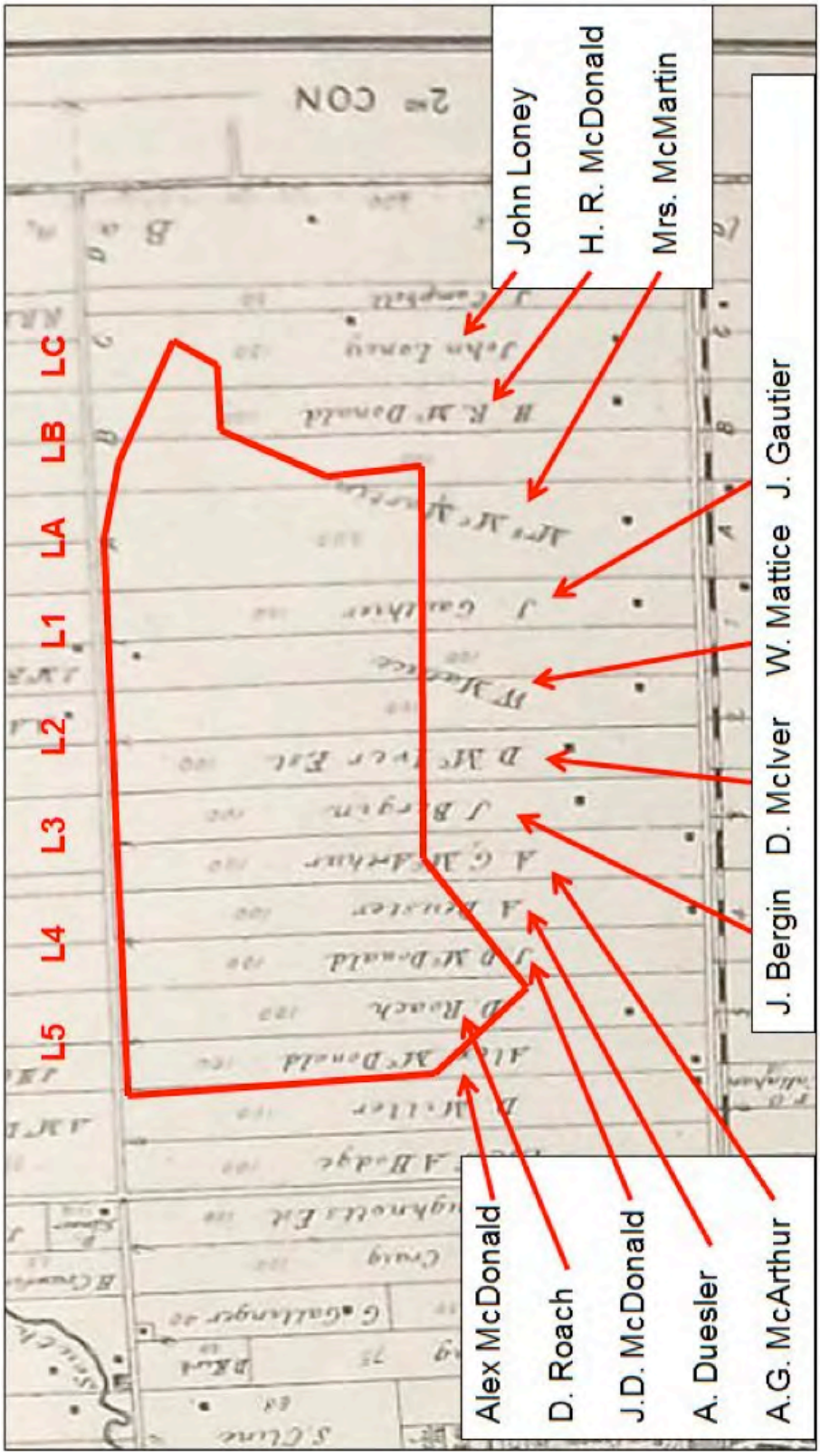
Map 13. The study area in 1965, showing the 1952 Trans-Northern Pipeline, built outside of the study area (Army Survey Establishment 1965).



Map 14. The study area in 1973, showing alterations to Highway 401 through Lots A, B, and C of Concession 2 (Department of Lines, Energy and Resources 1973).



Map 15. The study area in 1861, showing property divisions, owners and buildings (Walling 1861).



Map 16. The study area in 1879, showing property divisions, owners and buildings (Belden 1879).

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LEGEND

- Project Area
- Swamp
- Railway
- Hydro corridor
- # Photograph and orientation

0 125 250 375 500
metres

BASE:

Orthographic Image - Google 2008, Digital Globe 2011, Data SIO, NOAA, U.S. Navy, NGA, GEBCO

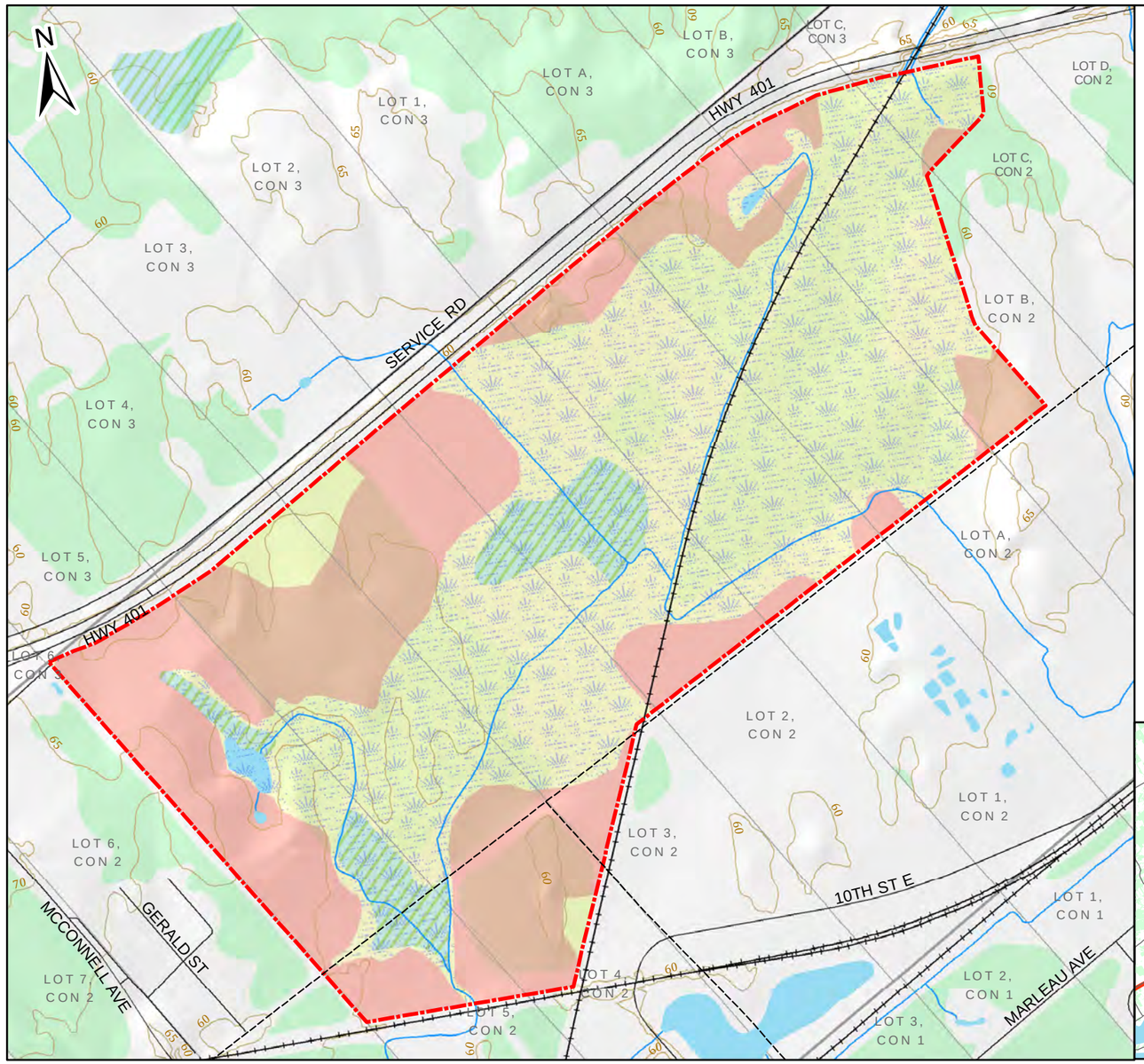
NOTE:

This map should be read in conjunction with the Stage 1 Archaeological Background Study completed for Cornwall Business Park Master Plan

Cornwall Business Park Master Plan November 2011

PIF No. P272-197-2011 Drawn by L.M.

Map 17. Site conditions.



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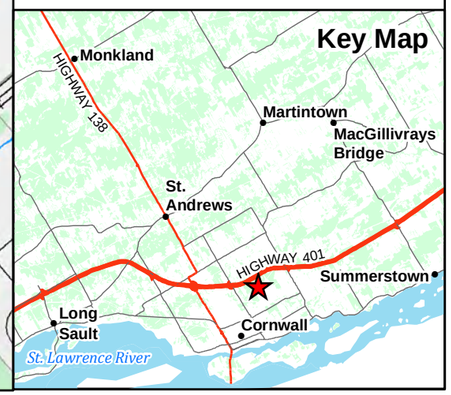
Cornwall Business Park EA
Cornwall, Ontario

Archaeological Potential

- Utility Line
- Railroad
- Project Area
- Archaeological Potential
- Low Potential
- Elevated Topography
- Primary Water Source
- Secondary Water Source
- Wetland
- Wooded Area



Drawn by: R.C.
Date: December 4, 2011

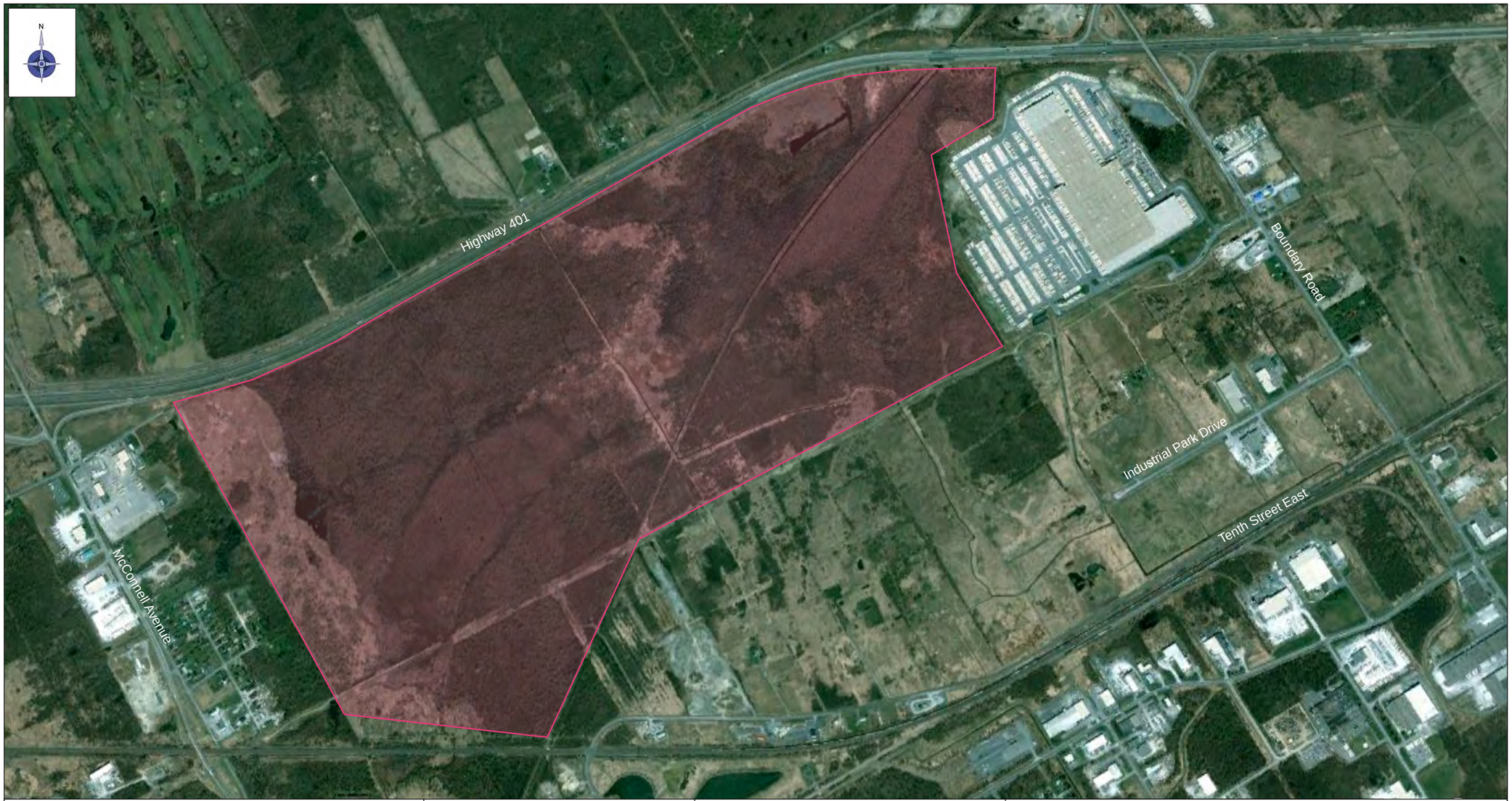
0 400 800 1,600 Meters

Projection: UTM Zone 18N Datum: NAD83

This map is not intended as a precise indicator of routes, locations of features, or as a guide to navigation. This map may contain cartographic omissions. Map data compiled from various sources.

Map 17. Site conditions.

Images



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BASE:
Orthographic Image - Google 2008, Digital Globe 2011, Data SIO, NOAA, U.S. Navy, NGA, GEBCO

LEGEND
Project Area

0 400 800 1200 1600 2000
metres

Cornwall Business Park Master Plan
PIF No. P272-197-2011

November 2011
Drawn by L.M.

Image 1. Orthographic image of the project area (Google Earth 2012).

Appendix C - Glossary of Terms

Archaeology - is the scientific study of the physical evidence of past human societies recovered through excavation.

Archaeological Site - is a place in which physical evidence of past human activity is preserved and which has been, or may be, investigated using the discipline of archaeology.

Archaic Period - in Ontario is characterized by the appearance of ground stone tools, notched or stemmed projectile points, the predominance of less extensively flaked stone tools, increased reliance on local chert resources, a lack of pottery and smoking pipes, and an increase in the numbers and sizes of sites.

Atlatl - a tool used to throw spears faster and with more accuracy. It consists of a short pole with a handle at one end and a hook for engaging the spear in the other.

Bioturbation - results in changes to the nature, form, and arrangement of archaeological deposits and sediments as a result of biological activity in the ground. This includes root action, animal activity, and the degeneration of organic matter.

BP - Before Present. Years before present (1950), used in dating sites and/or artifacts from an archaeological site.

Burial Goods or Burial Paraphernalia - items interred with an individual (or group) burial that may give clues to their social and/or economic and/or political position within their culture.

Chert - is a fine-grained, sedimentery rock, similar to flint. In antiquity, chert was one of the universally preferred materials for making stone tools.

Contact Period - refers to the period when European and First Nations peoples were first exposed to one another. In Ontario from 450 BP to 200 BP.

Cultural Resources - are sites, structures, landscapes, and objects of particular importance to a culture or community.

Diagnostic - a distinguishing characteristic serving to identify or determine the artifact.

Disarticulated - this occurs when bones are found separated at the joints.

Disturbed - refers to a study area that has recently been excavated or altered.

Environmental Assessment Act - sets up a process for reviewing the environmental impact of proposed activities prior to the granting of government funds.

Excavation - is the systematic digging and recording of an archaeological site.

Flake - is a fragment of stone removed from a core or from another flake.

Feature - is a collection of one or more contexts representing some human activity that has a vertical characteristic to it in relation to site stratigraphy.

Fluted - grooved or channeled. A fluted point is a projectile point which has had one or more long thinning flakes removed from the base along one or both faces.

Ground Stone - is a stone artifact shaped by sawing, grinding, and/or polishing with abrasive materials.

Historic Period - the period when written records become available, 300 BP to the present.

Lanceolate - lance-shaped, much longer that wide, widened at or above the base and opening to the apex.

Lithic - stone, or made of stone.

Maize - also known as corn, is a cereal grain that was first domesticated in Mesoamerica and then spread throughout the American continents.

Mitigation - measures undertaken to limit the adverse impact of construction methods on archaeological sites or cultural resources.

Ochre - used as a natural pigment, colour is commonly reddish-brown to yellow.

Ontario Heritage Act - allows municipalities and the provincial government to designate individual properties and districts in Ontario as being of cultural heritage value or interest.

Palaeoamerican Period - first evidence of human occupation in Ontario. This period is characterized by family groups hunting large game and seasonal occupation along lakeshore environments, 11,500 - 9000 BP.

Projectile Point - is an artifact used to tip an arrow, atlatl dart, spear, or harpoon. Usually made of chipped or ground stone, however, some are also made of copper.

Stage 1 Background Study - The purpose of a Stage 1 assessment is to investigate the cultural land use, archaeological history, and the present conditions of a property. The majority of the Stage 1 process is conducted in the office and involves the examination of records such as historic settlement maps, land titles, and documents, historical land use and ownership records, primary and secondary documentary sources, and the Ministry of Culture's archaeological site database. The study may also involve interviews with individuals who can provide information about the property and consultation with local First Nations communities. The background study is followed by a property inspection to examine geography, topography and current conditions, and to determine the potential for archaeological resources. Stage 1 background research is usually completed in conjunction with a Stage 2 property survey.

Stage 2 Property Survey - The Stage 2 property survey involves the documentation of archaeological resources by collecting artifacts and mapping cultural features. Depending on the nature of the property environment, two methods are employed in the survey: 1) pedestrian survey, and; 2) test-pit survey.

Strata - are layers of rock, soil, cultural material, etc. with internally consistent characteristics that distinguish contiguous.

Stratigraphy - the layering of deposits on archaeological sites. Cultural remains and natural sediments become buried over time, forming strata.

Subsistence - obtaining food and shelter necessary to support life.

Survey - is used to accurately determine the terrestrial or three-dimensional space position of points and the distances and angles between them.

Woodland Period - is a period of time following the Archaic Period. From 3000 BP to 300 BP. It is sub-divided into Early, Middle, and Late.

Appendix D

Council Resolution

Cornwall City Council

DEPARTMENT: **Department of Economic Development**

REPORT NUMBER: 2012-47-ED

PREPARED BY: Mark A. Boileau, Manager Economic Dev.

REPORT DATE: November 20, 2012

MEETING DATE: Nov 26, 2012 07:00 PM

SUBJECT: **Cornwall Business Park Master Plan - Environmental Assessment**

PURPOSE

To obtain Council endorsement of the 'Recommended Plan' in the Cornwall Business Park Master Plan Environmental Assessment (EA) Report

RECOMMENDATIONS

That council endorse the 'Recommended Plan' as outlined in the Cornwall Business Park Master Plan - Environmental Assessment, prepared by Genivar and presented at the November 13, 2012 Council Meeting.

FINANCIAL IMPLICATIONS

This preliminary roadway cost estimate for the Recommended Plan is approximately $4 million, in addition to infrastructure services such as water, sewer, hydro and other required utilities. Implementation would only take place as development lands and services are required within the Cornwall Business Park.

BACKGROUND / DISCUSSION

In 2011, Genivar was retained to provide a Class Environmental Assessment and Secondary Plan for the Cornwall Business Park. Part of that process has involved the review of a preferred road alignment for the future western portion of the Park. Staff has assisted Genivar in outlining various alternatives, which were then presented to external agencies, and to the public on June 19th, 2012. The Technically preferred Alternative was then presented to the public and agencies on October 17th, 2012. Finally the 'Recommended Plan' was presented at the public Council Meeting on November 13, 2012.

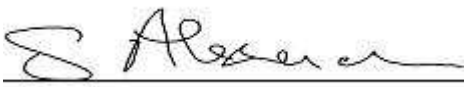
The new roadway would provide linkage from the improved Industrial Park Drive/Tenth Street East area to the north-west portion of the future park, aligning with Tollgate Road east. In addition, the route would provide an access point for the Cornwall Business Park to the McConnell Avenue Highway 401 interchange. The roadway would potentially provide access to nearly 300 acres of developable lands.

Following endorsement of the Recommended Plan by City Council, the Environmental Study Report will be filed for a 30-day public review. Provided there are no objections submitted to the Ministry of the Environment (MOE) within that time frame, the project will receive environmental clearance to proceed.

ATTACHMENTS

111-15011 Cornwall BP EA Council PRE NOV 02 12.pdf

Approval

November 21, 2012 11:53 AM	Mark A. Boileau Manager Economic Dev.	
November 21, 2012 04:01 PM	Maureen Adams G.M.Financial Services	
November 21, 2012 05:29 PM	Stephen Alexander Acting Chief Administrative Officer	

ENDORSE

Moved By: Denis Carr, Councillor
Seconded By: Syd Gardiner, Councillor

MOTION APPROVED