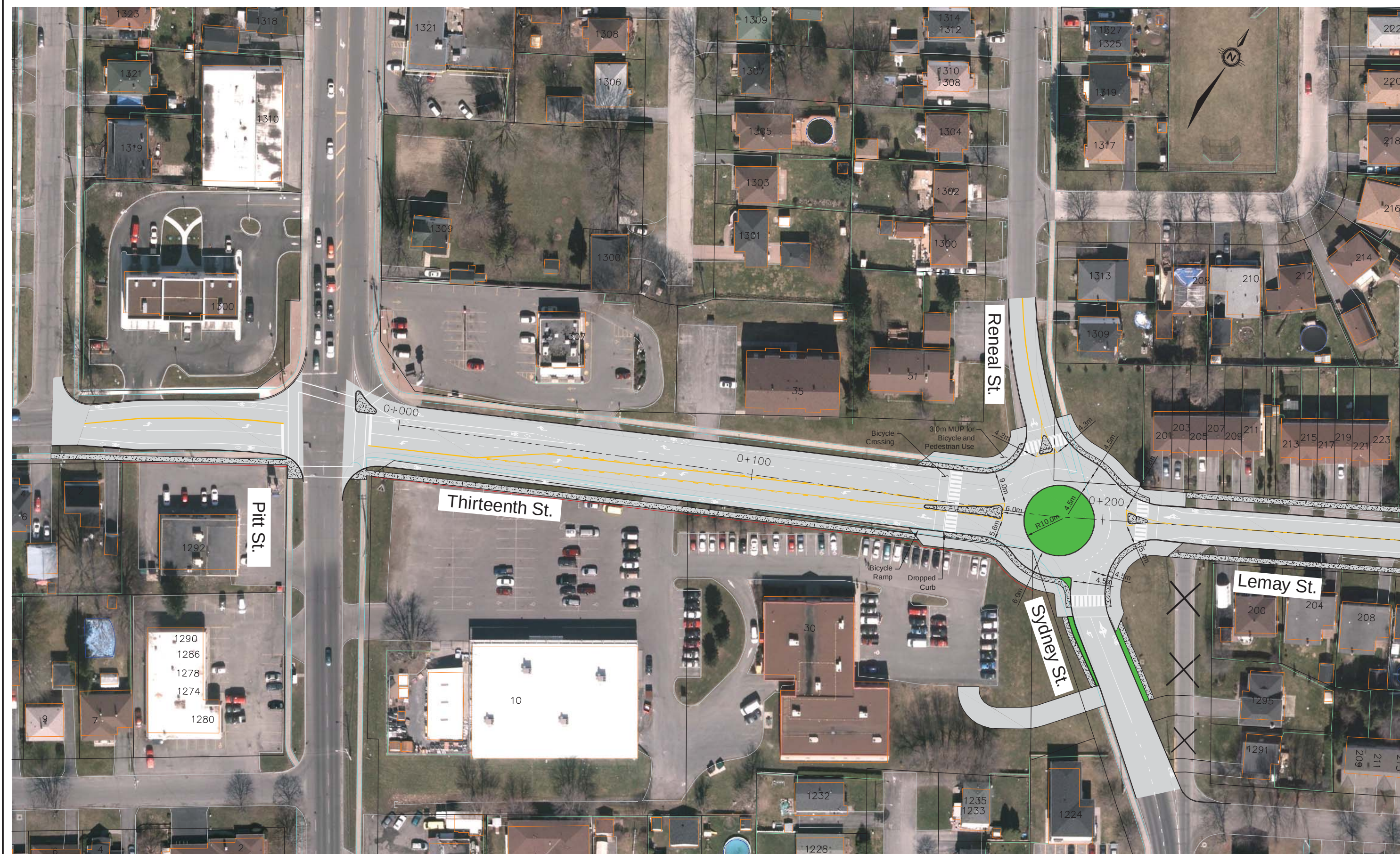


Appendix A

Municipal Class Environmental Assessment Improvement and Extension of Lemay Street – Corporation of the City of Cornwall

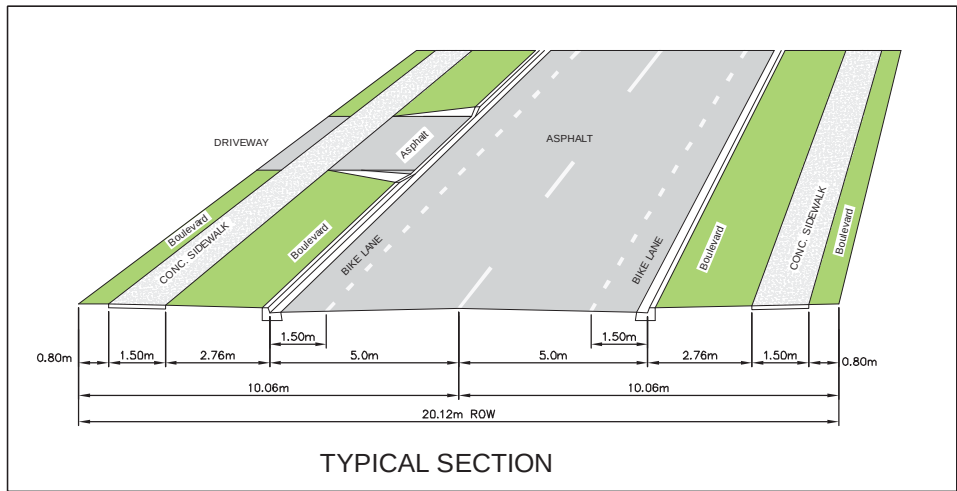
- Recommended Plan







LEMAY STREET CORNWALL EA STUDY PREFERRED OPTION



LEMAY STREET CORNWALL EA STUDY PREFERRED OPTION

Appendix B

Municipal Class Environmental Assessment Improvement and Extension of Lemay Street – Corporation of the City of Cornwall

- Summary of Consultation

Consultation Summary Reports Round 1

Corporation of the City of Cornwall

Consultation Round #1 Summary Report Municipal Class Environmental Assessment

Part A, Proposed Improvement and Extension of Lemay Street and Part B, Redevelopment and Design of the Municipal Works Yard

Prepared by:

AECOM

302 – 1150 Morrison Drive
Ottawa, ON, Canada K2H 8S9
www.aecom.com

613 820 8282 tel
613 820 8338 fax

Project Number:

60337734

Date:

June, 2015

Statement of Qualifications and Limitations

The attached Report (the “Report”) has been prepared by AECOM Canada Ltd. (“Consultant”) for the benefit of the client (“Client”) in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents Consultant’s professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by Consultant represent Consultant’s professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since Consultant has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, Consultant, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

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This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

June 10, 2015

Mr. Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street
Cornwall, Ontario
K6H 5T9

Dear Mr. Wintle:

Project No: 60337734

Regarding: Consultation Round #1 Summary Report

We submit to you the Consultation Round #1 Summary Report

Sincerely,
AECOM Canada Ltd.

A handwritten signature in black ink, appearing to read 'Vanessa Skelton', with a stylized flourish at the end.

Vanessa Skelton, P. Eng.
Senior Transportation Engineer
Vanessa.skelton@aecom.com

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Revision Log

Revision #	Revised By	Date	Issue / Revision Description

AECOM Signatures

Report Prepared By:

Colin MacKenzie
Engineer in Training, Transportation

Report Reviewed By:

Vanessa Skelton, P. Eng.
Senior Transportation Engineer

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3. Public Information Centre

4. Conclusion

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Appendices

- Appendix 1-1. Consultation Round #1 Notices
- Appendix 1-2. Public Information Centre Display Material
- Appendix 1-3. Public Information Centre Comment Sheet

1. Introduction

The City of Cornwall initiated a Class Environmental Assessment (EA) for improvements and extension of Lemay Street from Pitt Street to McConnell Avenue and for the redevelopment of the Municipal Works Yard.

The purpose of the study is to conduct a detailed evaluation of future transportation demand for the east-west direction of travel in the area of Lemay Street. The study will assess current network deficiencies and will develop a recommended plan to address capacity, operational and safety issues while minimizing environmental impacts. The study will also review the existing facilities of the Municipal Works Yard and will develop a plan that will provide efficient operations in the future. The study area, which is subject to refinement during the EA process, is illustrated in the **Figure 1**.

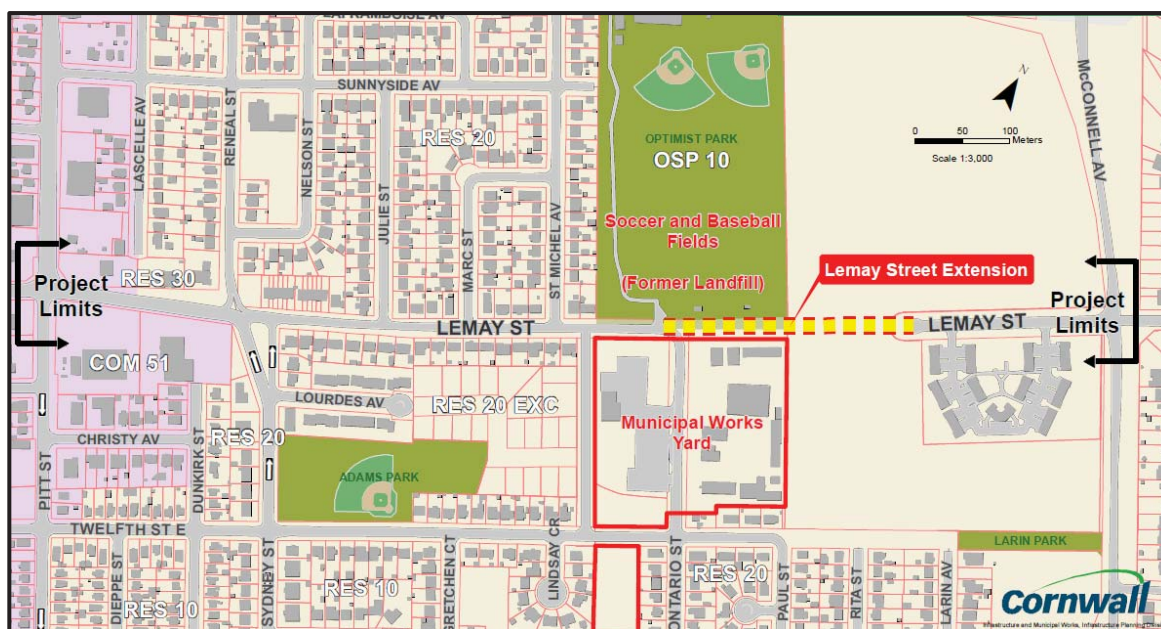


Figure 1. Study Area

The Lemay Street study will be carried out in accordance with the requirements for a Schedule 'C' project under the *Municipal Class Environmental Assessment* document (2007, 2011). The EA process will involve developing, assessing, and evaluating alternatives, which will result in a recommended plan to be presented to the City of Cornwall Council and the public. As part of the Lemay Street EA, a study to redevelop the Municipal Works Yard on Lemay Street will be carried out as Schedule 'B' project.

Two rounds of public consultation are planned during the course of the study to review and discuss the project with the study team and solicit feedback. The purpose of this report is to present an overview of the first round of consultation and to document responses.

2. Project Website

Project information is posted on the City of Cornwall web site throughout the duration of the project. Public notices advising of PIC meetings, display material presented at the meetings and project updates are available on the website. Contact information is also provided to allow the public to comment throughout the study process.

3. Public Information Centre

One of the key objectives of the environmental planning process is to provide the public, interested parties and affected agencies with opportunities for meaningful input. To help ensure this objective is met, public and agency notification of the Study Commencement and of the Public Information Centre (PIC) was undertaken.

Notices of Study Commencement and Public Information Centre #1 were sent to interested parties the week of May 4th, including agencies, First Nations and local property owners. Copies of the English and French notices are provided in **Appendix A**.

The PIC was held Thursday, May 21, 2015 from 4:00 pm to 7:00 pm at the Municipal Works Division Office on 1225 Ontario Street. The purpose of the PIC was to:

- Introduce the project;
- Review the Project Need and Existing Conditions;
- Consult on the proposed evaluation criteria;
- Identify the alternative solutions; and
- Review Next Steps.

The PIC provided an opportunity for members of the public to view the display material and to discuss the project with the City of Cornwall and consultant representatives. Attendees were encouraged to provide written comments. The members of the project team in attendance consisted of:

- | | |
|----------------------|---|
| • Steve Wintle | Project Manager, City of Cornwall |
| • John St. Marseille | General Manager, Infrastructure & Municipal Works, City of Cornwall |
| • Enrique Kamm | Transportation Engineer, City of Cornwall |
| • Bill DeWit | Division Manager, Municipal Works, City of Cornwall |
| • Vanessa Skelton | Consultant Project Manager, Transportation, AECOM |

The displays presented at the Information Centre are provided in **Appendix B** and dealt with the following topics:

- Welcome
- Study Background
- Municipal Class EA Process
- Project Need & Opportunities
- Municipal Works Yard
- Alternative Solutions
- Municipal Works Yard Options
- Transportation Existing Conditions
- Existing Conditions (Natural Environment, Land Use & Socio-Cultural, Noise, Geotechnical and Hydrogeological, Drainage and Stormwater Management, Utilities, Contamination, Archaeology)
- Evaluation Factors & Methodology
- Evaluation of Alternative Solutions
- Next Steps

A total of twelve people signed the registration sheet and no comment sheets were received at the PIC. No additional comments were received prior to the final submission date for comments to be incorporated into this

report. Comments received after this date will still be considered and will be documented in the Environmental Study Report as part of this project. A copy of the original comment sheet is provided in **Appendix C** of this report.

Some points that were brought up during discussions at the Public Information Centre were:

- Will safety be considered as a factor for evaluation of alternative designs?
- What volume of vehicles is expected to be diverted onto Lemay Street if the extension is put through?
- Will warrants for traffic signals be calculated for key intersections in the study area? (Lemay Street / Thirteenth Street at Sydney Street and Lemay Street at McConnell Avenue)
- Were different locations considered for the Municipal Works Yard?

4. Conclusion

Various stakeholders attended the Public Information Centre including residents and municipal representatives. Most of the questions centred on the safety of Lemay Street if an extension is put through. These concerns will be addressed during the alternative design phase and presented to the public.

The PIC exhibits were made available to the public on the City of Cornwall website following the PIC.

Appendix 1-1

Municipal Class EA Part A, Proposed Improvement and Extension of Lemay Street

- Consultation Round #1 Notices and Letters

Notice of Study Commencement

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

The City of Cornwall has initiated a Class Environmental Assessment (EA) for improvements and extension of Lemay Street from Pitt Street to McConnell Avenue. This study will be carried out in accordance with the requirements for a Schedule 'C' project under the *Municipal Class Environmental Assessment* document (2007, 2011). As part of the Lemay Street EA, a study to redevelop the Municipal Works Yard on Lemay Street will be carried out as Schedule 'B' project.

The purpose of the study is to conduct a detailed evaluation of future transportation demand for the east-west direction of travel in the area of Lemay Street. The study will assess current network deficiencies and will develop a recommended plan to address capacity, operational and safety issues while minimizing environmental impacts. The study area, which is subject to refinement during the EA process, is illustrated in the key map. The study will also review the existing facilities of the Municipal Works Yard and will develop a plan that will provide efficient operations in the future.



The EA process will involve developing, assessing, and evaluating alternatives, which will result in a recommended plan to be presented to the City of Cornwall Council and the public. The study is expected to be completed by the fall of 2015. Upon completion of this study, an Environmental Study Report will be available for public review and comment. A notice of study completion will be published at that time.

Public Information Centre

Public open houses will be held during the course of the study to provide an opportunity for the public to review and discuss the project with representatives of the Project Team. The first Public Information Centre (PIC) will be held:

May 21, 2015
Municipal Works Division Office
1225 Ontario Street
Cornwall, Ontario
4:00 p.m.-7:00 p.m.

There is also 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.

For further information on this project, or to be added to our mailing list, please contact:

Vanessa Skelton, P. Eng.
Consultant Project Manager
AECOM
1150 Morrison Drive, Suite 302
Ottawa, ON K2H 8S9
Phone: 613-820-7728 ext. 251
E-mail: Vanessa.Skelton@aecom.com

Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street,
Cornwall, Ontario K6H 5T9
Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Avis de début d'étude

Étude d'évaluation environnementale de portée générale pour la proposition d'améliorations et de prolongement de la rue Lemay et le réaménagement et la conception du parc des Travaux municipaux

La Ville de Cornwall a entamé une étude d'évaluation environnementale (EE) de portée générale pour les améliorations et le prolongement de la rue Lemay, de la rue Pitt à l'avenue McConnell. Cette étude sera menée en conformité aux exigences imposées à un projet de l'annexe C dans le cadre d'un document d'évaluation environnementale municipale de portée générale (2007, 2011). Au sein de l'étude pour la rue Lemay, une autre étude sur le réaménagement du parc des Travaux municipaux, sur la rue Lemay, sera menée à titre de projet de l'annexe B.

Le but de cette étude est de mener une évaluation détaillée de la demande de transport future pour les déplacements est-ouest dans le quartier de la rue Lemay. L'étude évaluera les lacunes actuelles du réseau et élaborera un plan de recommandations pour aborder les questions de capacité, d'ordre opérationnel et de sécurité, tout en minimisant les effets environnementaux. La zone d'étude, qui sera précisée pendant le processus d'EE, est illustrée sur la carte-index. L'étude examinera aussi les installations existantes du parc des Travaux municipaux et élaborera un plan, qui en permettra une exploitation efficace dans l'avenir.



Le processus d'EE comprendra la création et l'évaluation d'alternatives, ce qui produira un plan de recommandations à présenter au conseil municipal de la Ville de Cornwall et au public. L'étude devrait s'achever à l'automne 2015. À l'achèvement de cette étude, un rapport d'étude environnementale sera mis à la disposition du public, qui pourra l'examiner et fournir des commentaires, et un avis d'achèvement de l'étude sera publié.

Séance porte-ouverte

Des séances porte-ouverte seront organisées pendant l'étude afin de donner au public l'occasion d'examiner le projet et d'en parler avec des représentants de l'équipe du projet.

Le 21 mai 2015
Bureau des Travaux Municipaux
1225, rue Ontario
Cornwall ON
16h00 – 19h00

La possibilité de fournir des commentaires à tout moment pendant le processus d'EE est offerte aux personnes intéressées. Tous les commentaires reçus à propos de l'étude seront recueillis dans le cadre de la *Loi sur les évaluations environnementales* et, à l'exception des renseignements personnels, feront partie du dossier public.

Pour plus de renseignements sur ce projet ou pour être ajouté à notre liste de distribution, veuillez communiquer avec :

Vanessa Skelton, ing.
Chargée de projet du cabinet de conseils
AECOM
1150, promenade Morrison, Bureau 302
Ottawa ON K2H 8S9
Tél. : 613-820-7728, poste 251
Courriel : Vanessa.Skelton@aecom.com

Steve Wintle, C.E.T.
Chargé de projet pour la Ville
Ville de Cornwall
1225, rue Ontario
Cornwall ON K6H 5T9
Tél. : 613-930-2787, poste 2204
Courriel : swintle@cornwall.ca

Appendix 1-2

Municipal Class EA Part A, Proposed Improvement and Extension of Lemay Street

- **Public Information Centre Display
Material**

Welcome

City of Cornwall

Municipal Class Environmental Assessment

Proposed Improvement and Extension of Lemay Street

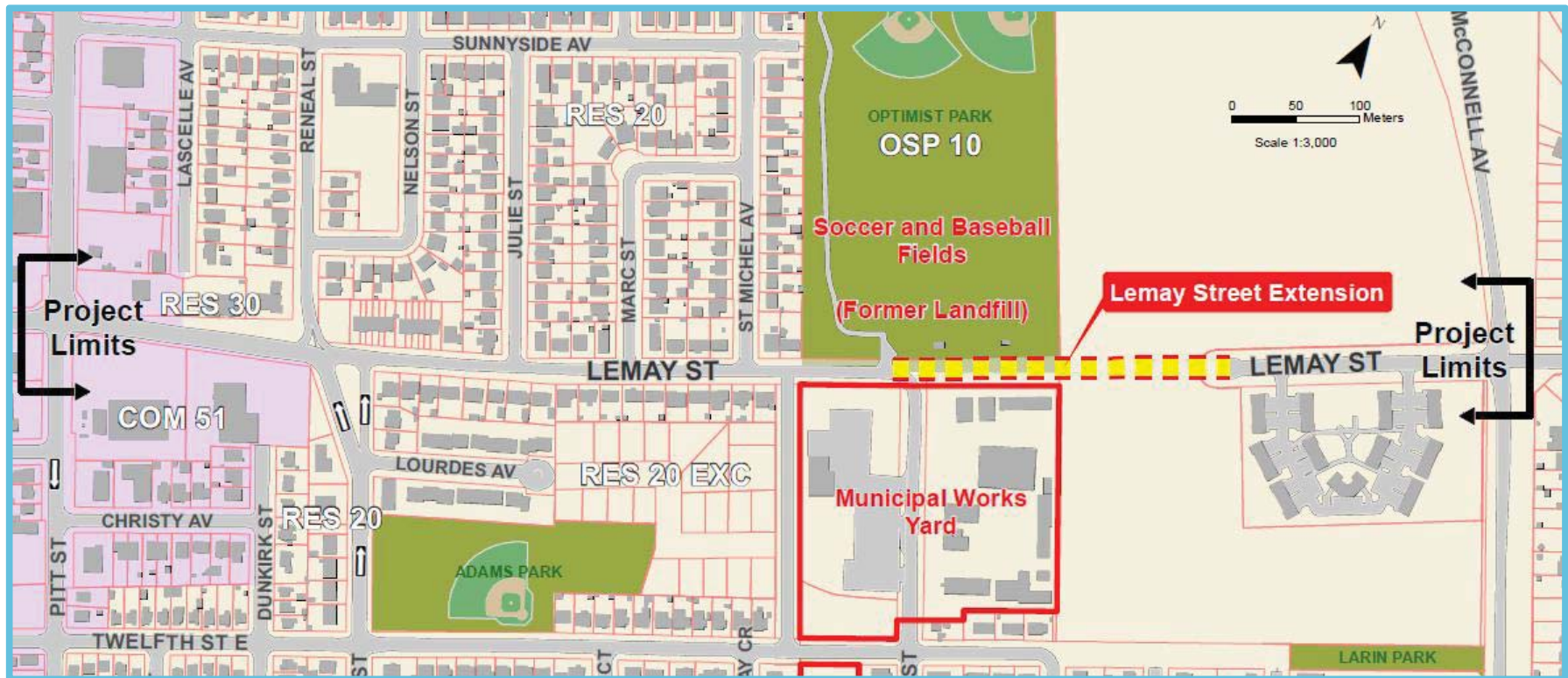
Redevelopment and Design of the Municipal Works Yard

Public Information Centre #1

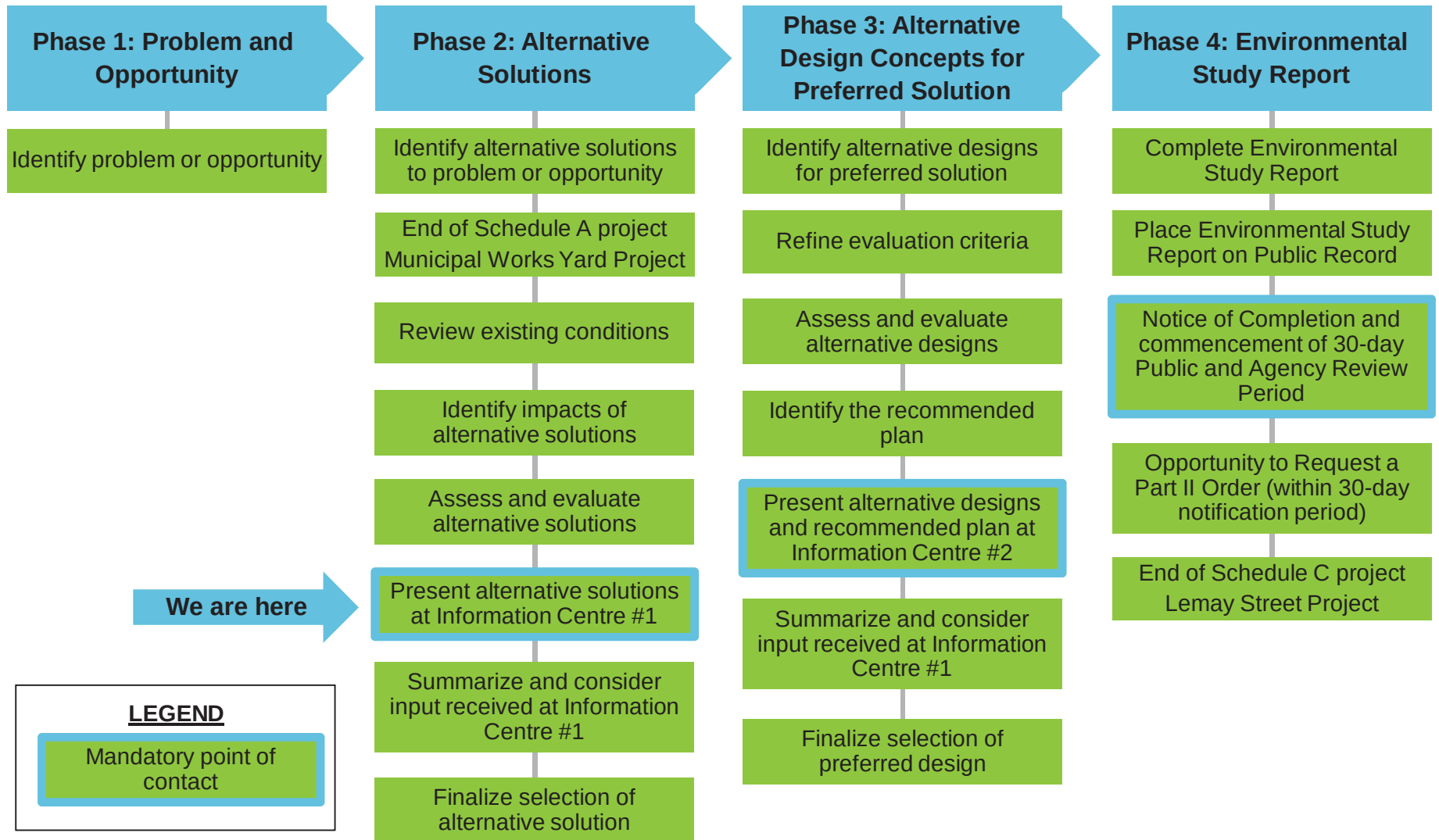
Thursday, May 21, 2015

Study Background

- Two geographically related studies were initiated in early 2015.
- There is a need for updated and improved facilities within the City of Cornwall Municipal Works Yard on Ontario Street. This is a schedule A project under the Municipal Class Environmental Assessment.
- The City's Official Plan and 2006 Critical Infrastructure Review identified the need to extend Lemay Street. This is a schedule C project under the Municipal Class Environmental Assessment. The redevelopment of the municipal works yard provides an opportunity to connect the east and west sections of Lemay Street.



Municipal Class EA Process



Project Needs & Opportunities

- There is a need to improve the poor pavement condition and provide an urban cross-section on Lemay Street. There is an opportunity to provide cycling and sidewalk infrastructure in the corridor.
- There is a need to improve the long delay for eastbound and westbound vehicles at the intersection of Thirteenth Street/Lemay Street at Sydney Street during peak periods.
- There is an opportunity to improve the connectivity of the road network by providing residents of Cornwall with a new corridor in the east-west direction.
 - This will also improve the emergency response time for emergency vehicles in the city, which was recommended in the 2006 Critical Infrastructure Review Study.
 - The City's Official Plan identified a future transportation connection of Lemay St to McConnell Ave.
- There is an opportunity to improve accessibility to the municipal works yard and to provide better access to key travel corridors such as McConnell Avenue and Brookdale Avenue.



Lemay Street west of Optimist Park (Source: Google Maps)

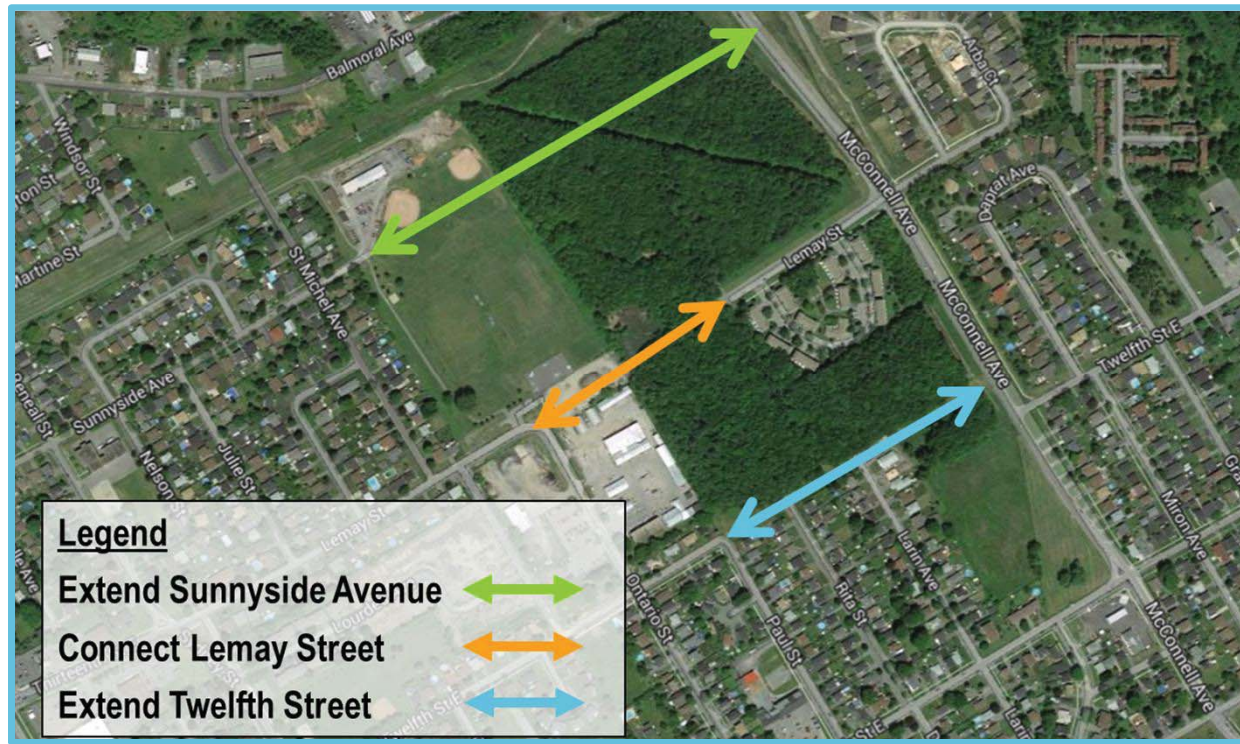
Municipal Works Yard

- All buildings need to be replaced due to deficiencies relating to:
 - Structural integrity (buildings and fuel tanks)
 - End of service life
 - Rust and leaks
 - Energy efficiency
 - Safety
 - Accessibility
 - Lack of storage capacity for winter maintenance material and equipment
- Based on the condition assessment, a timeline for replacement was developed

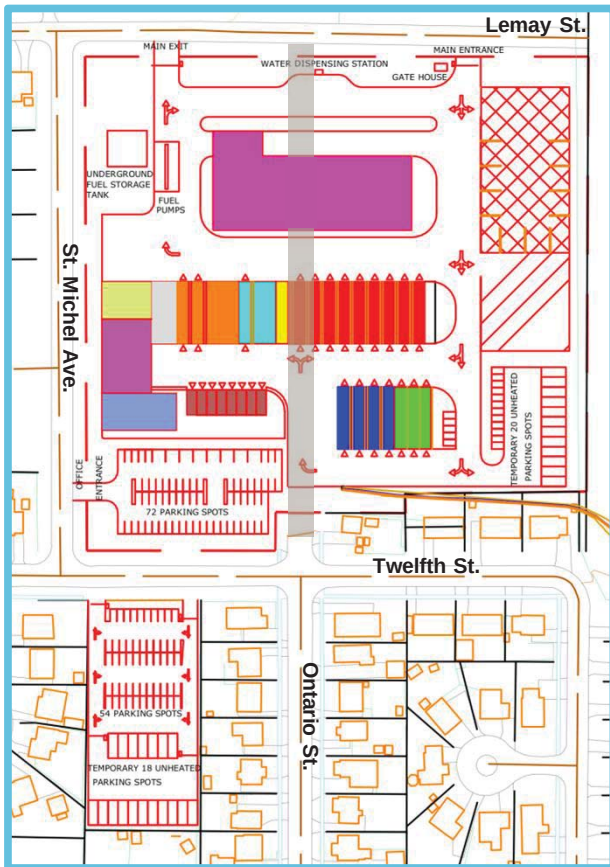
# of Buildings	Timeframe	Action required
3	Critical	0 years
9	Immediate	1-3 years
6	Short Term	4-7 years
1	Later	7-10 years

Alternative Solutions

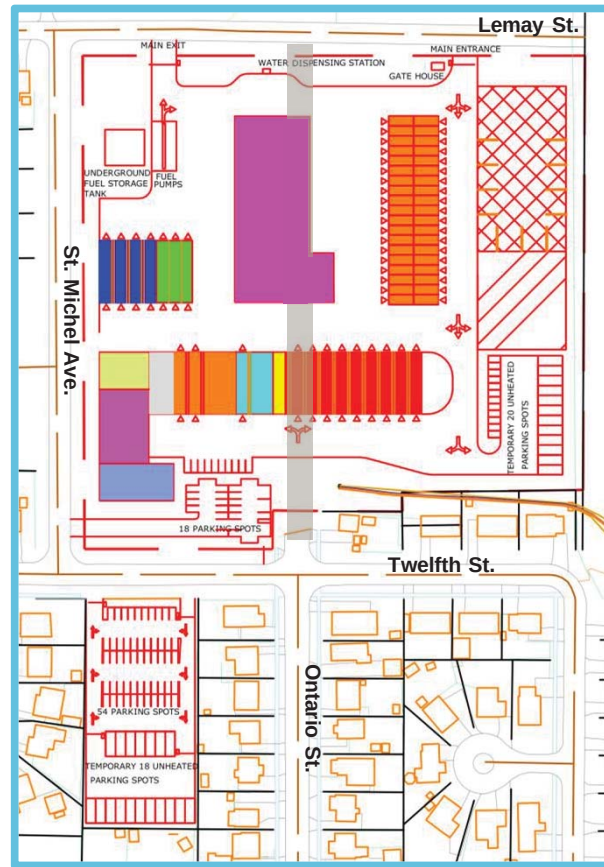
- **Do Nothing:** The base case scenario against which other solutions are compared.
- **Enhance other transportation modes:** Add additional transit service. Continued implementation of Bicycle and Pedestrian Master Plan.
- **New east-west corridor:** Three options to extend an east-west street to connect McConnell Avenue to Pitt Street.



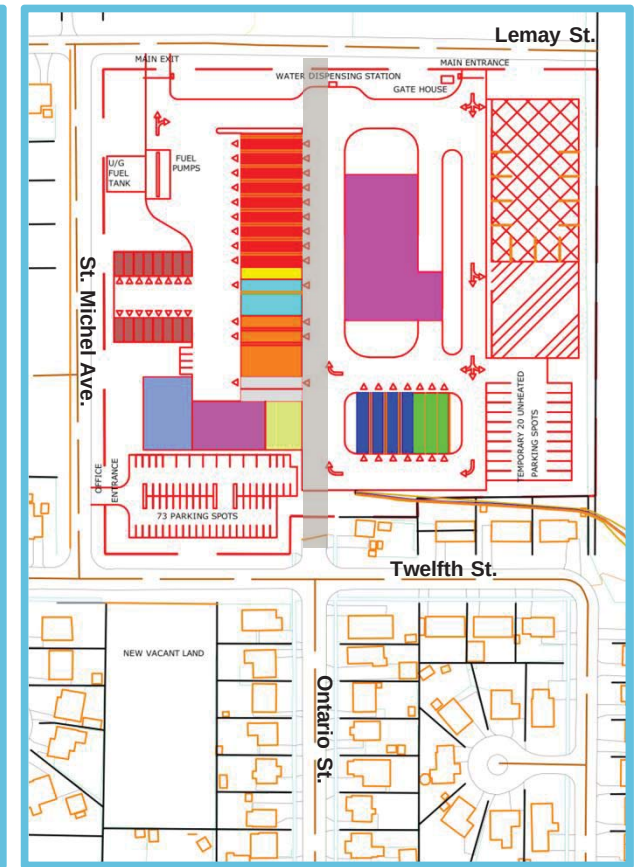
Municipal Works Yard Options



Option 1



Option 2

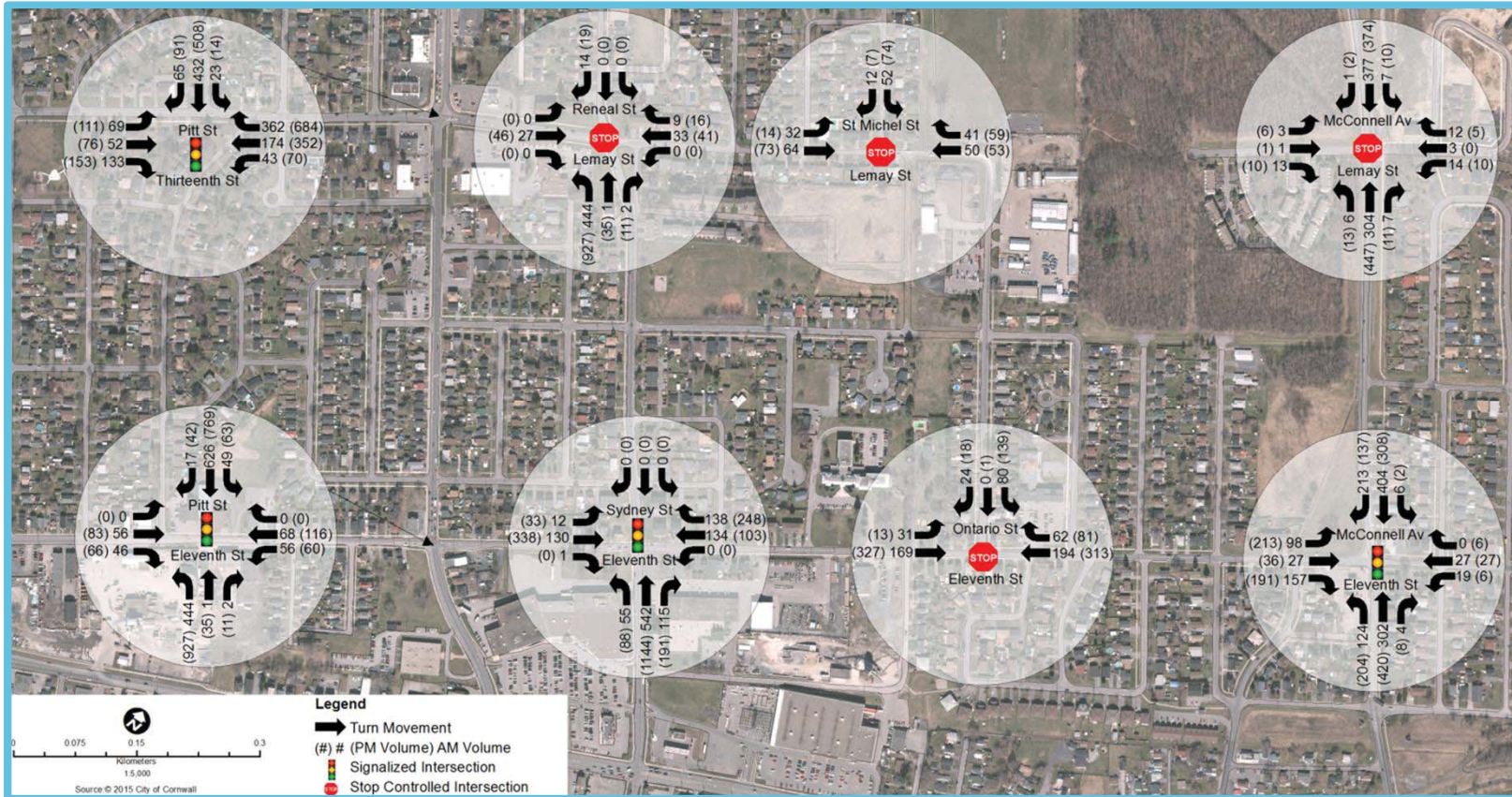


Option 3

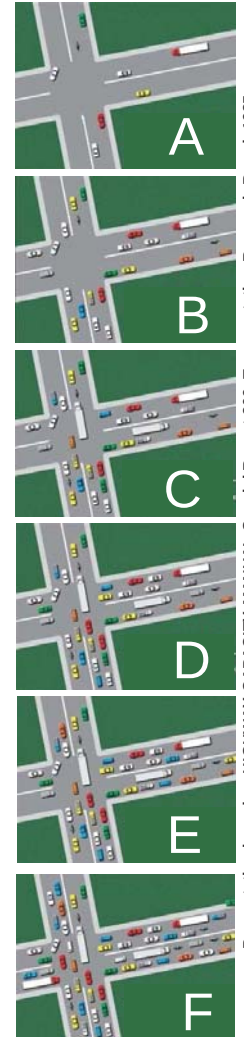
The three options provide more winter maintenance material storage, new underground fuel storage and new structures. Ontario Street will be closed. The staging of the reconstruction of the Municipal Works Yard allows for the continuing operation of the facilities.

Transportation Existing Conditions

Existing Traffic Movements and Operations



Level of Service

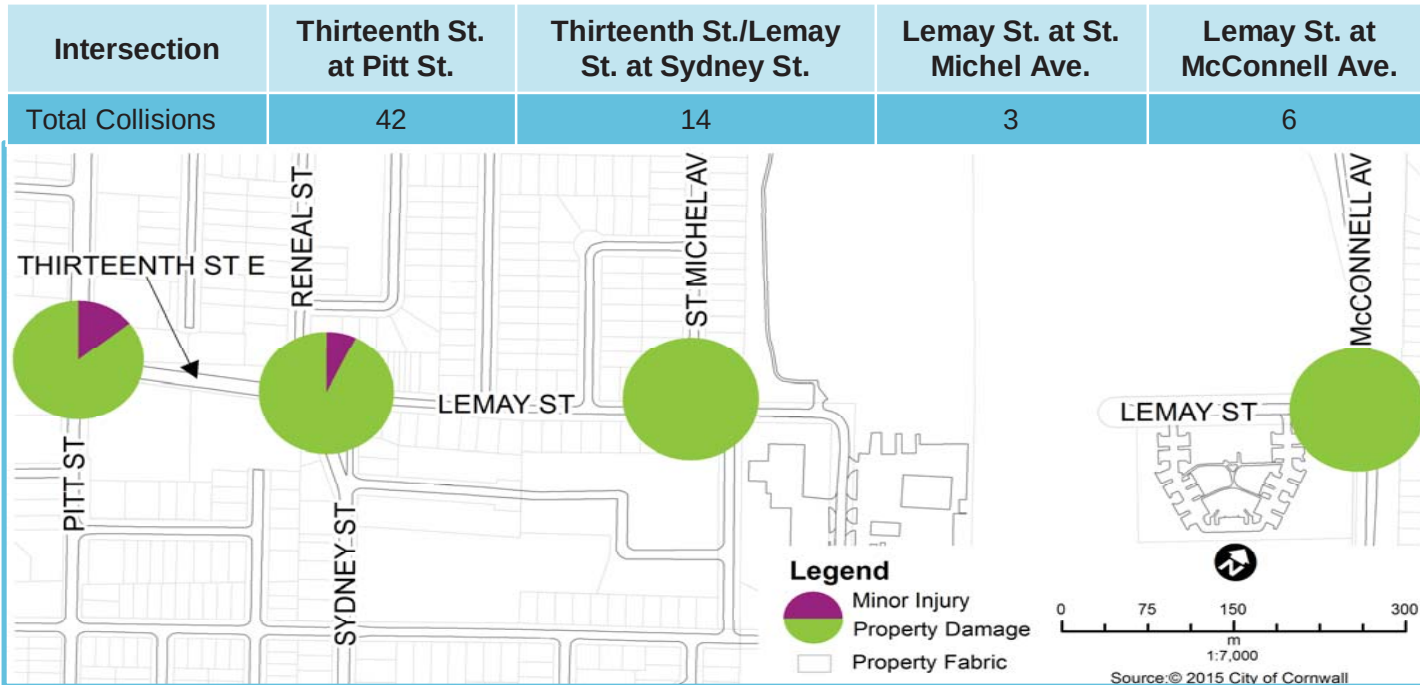


Intersection	Overall Intersection LOS	
	AM Peak Hour	PM Peak Hour
Thirteenth St. at Pitt St.	B	C
Thirteenth St./Lemay St. at Sydney St.	B	F
Lemay St. at McConnell Ave.	A	A

- There are high delays at the intersection of Thirteenth St. and Sydney St. in the PM peak hour. This is due to the large delay for eastbound and westbound vehicles
- Other intersections operate well

Transportation Existing Conditions

Collisions Within Study Area (2009 – 2013)

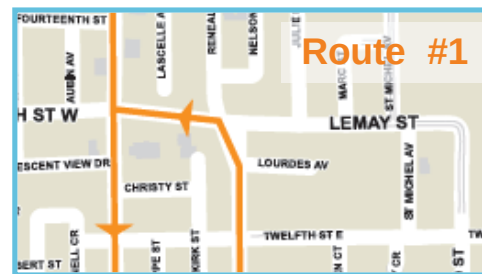


The number of collisions occurring at the intersections are typical for the type of intersection and level of traffic volumes

Cycling and Pedestrians

- No sidewalks or cycling facilities on the western section of Lemay St.
- The eastern section of Lemay St. has a sidewalk on the south side of the street. There are no cycling facilities.
- Sidewalks are present on both sides of Thirteenth St. and Sydney St. There are no cycling facilities.

Transit



Cornwall Transit Route #1 travels northbound through the study area on Sydney Street, Thirteenth Street and Pitt Street.

Existing Conditions

Natural Environment

- The forested land in the study area has potential for the presence of species at risk. Mitigation measures can likely be used to avoid negative impacts. A north to south flowing intermittent stream is located west of the Lemay Street cul-de-sac. Background review indicates that it is not a fish-bearing watercourse. Investigations are currently underway due to seasonal timing windows.

Land Use & Socio-Cultural Environment

- The works yard is predominantly surrounded by residential land, open space/parks, and manufacturing areas. The existing land use plan identified areas to the north-east as residential but no housing developments are currently located within this quadrant. Schedule 5 in the City of Cornwall Official Plan identifies the connection of Lemay Street as a proposed future collector street.

Noise

- Existing noise levels at noise sensitive locations within the study area are within a range typical of sub-urban areas (50-60 dBA).

Geotechnical and Hydrogeological

- Borehole data near the Lemay Street extension indicate the potential for layers of: topsoil, fill, silty sand/sand, silty clay/clay and till. Groundwater is typically located within the silty sand/sand or fill layer which is considered a high water table perched on the low permeable silty clay/clay unit. The groundwater is flowing in a south to southeast direction perpendicular to Lemay Street.

Drainage and Stormwater Management

- Lemay Street is relatively flat with longitudinal grades of 1% or less. Both sides of Lemay Street are serviced by an underground storm sewer network.

Utilities

- Watermain located on the south side of Lemay Street. Sanitary sewer system located on the north side of Lemay Street. Overhead power lines run parallel with Lemay Street. Bell Aliant fibre optic cables are located on the north side of Lemay Street.

Contamination

- The initial environmental assessment indicates a potential to intersect a historical landfill. Historical air photos indicate landfilling in the area of the road extension in the vicinity of the northern section of the municipal works yards. Other areas of concern include the unknown condition of excavated materials, salt storage, fuel storage and equipment storage area.

Archaeology

- The study area exhibits a high potential for the recovery of Pre-Contact and historical sites. However, the review of aerial photographs dated to the mid-twentieth century demonstrates that portions of the study area have been disturbed.

Evaluation Factors & Methodology

Factors

- Transportation
- Natural Environment
- Socio-Cultural Environment
- Infrastructure/Utilities
- Cost

Methodology

- Does the alternative address existing and future problems?
- What are the potential environmental effects?
- Conducted in a traceable and objective manner
- Level of detail sufficient to compare the various alternatives
- Relative comparison approach using:
 - ✓ = positive
 - × = negative
 - = neutral

Evaluation of Alternative Solutions

Evaluation Criteria	Do Nothing	Enhance Other Transportation Modes	Extend Sunnyside Avenue	Connect Lemay Street	Extend Twelfth Street
Does it address the identified needs and opportunities?					
1.0 Transportation					
Yard Accessibility	Will remain the same as existing conditions ✗	Doesn't improve direct service to the municipal works yard –	Doesn't provide direct access for vehicles to the municipal works yard ✗	Provides direct access for vehicles to the municipal works yard ✓	Doesn't provide direct access for vehicles to the municipal works yard ✗
Network Connectivity	The road network will be unchanged ✗	The road network will be unchanged ✗	Will provide a 1.1 kilometre east-west corridor from McConnell Ave. to Pitt St. –	Provides a 2.2 kilometre east-west corridor from McConnell Ave. to Brookdale Ave. ✓	Will provide a 1.1 kilometre east-west corridor from McConnell Ave to Pitt St. –
Traffic Operations	No opportunity to improve 13 th / Sydney intersection ✗	No opportunity to improve 13 th / Sydney intersection ✗	No opportunity to improve 13 th / Sydney intersection ✗	Opportunity to improve 13 th / Sydney intersection ✓	No opportunity to improve 13 th / Sydney intersection ✗
Preliminary Identified Impacts?					
2.0 Natural Environment	No impacts ✓	Minimal impact –	Will impact 500 metres of parkland and wooded area ✗	Will impact 150 metres of parkland and wooded area –	Will impact 350 metres of parkland and wooded area ✗
3.0 Socio-Cultural Environment	No impacts ✓	Minimal impacts on archaeological resources and noise levels –	6 to 9 dB increase in noise levels and some potential for archaeological impacts ✗	3 to 7 dB increase in noise levels and some potential for archaeological impacts ✗	8 to 10 dB increase in noise levels and some potential for archaeological impacts ✗
4.0 Infrastructure / Utilities	No impacts to utilities ✓	No impacts to utilities ✓	Utility relocation may be required –	Utility relocation may be required –	Utility relocation may be required –
5.0 Cost	No extra costs ✓	Cost for new cycling lanes and bus route optimization –	Additional costs for 500 metres of new roadway ✗	Additional costs for 150 metres of new roadway ✗	Additional costs for 350 metres of new roadway ✗
Results	Does not address the identified problem or opportunities. Carried forward for comparison.	Does not address the identified problem or opportunities. Not carried forward.	Does not address the identified problem. Addresses some opportunities. Has more impacts. Not carried forward.	Addresses the identified problem. Addresses the most opportunities. Will be carried forward.	Does not address the identified problem. Addresses some opportunities. Has more impacts. Not carried forward.

Next Steps

- Review public comments
- Identify and evaluate alternative designs
- Develop mitigation measures for alternative designs
- Hold Public Information Centre #2 to present alternative designs (Fall 2015)

Thank you for attending

Your comments are welcome and very important to this study. Please fill in a comment sheet and deposit in the comment box. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments. You may also send your comments by mail or email to:

Mr. Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street
Cornwall, ON K6H 5T9
Tel: (613) 930-2787 ext. 2204
Email: swintle@cornwall.ca

Ms. Vanessa Skelton, P. Eng.
Consultant Project Manager
AECOM
1150 Morrison Drive, Suite 302
Ottawa, ON K2H 8S9
Tel: (613) 820-8282 ext. 251
Email: vanessa.skelton@aecom.com

Appendix 1-3

Municipal Class EA Part A, Proposed Improvement and Extension of Lemay Street

- **Public Information Centre Comment Sheet**

Open House #1 Comment Card



Municipal Works Division Office
1225 Ontario Street, Cornwall, Ontario
May 21, 2015, 4:00 pm - 7:00 pm

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

Let us know what you think...

Please leave your comment sheet with a member of the project team, or provide your sheet by **May 30, 2015** to: Steve Wintle, C.E.T., City Project Manager, City of Cornwall,
1225 Ontario Street Cornwall, Ontario K6H 5T9 Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Optional:

Name: _____ Email: _____

Address: _____ Phone: _____

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

Consultation Summary Reports Round 2

Corporation of the City of Cornwall

Consultation Round #2 Summary Report Municipal Class Environmental Assessment

Part A, Proposed Improvement and Extension of Lemay Street and Part B, Redevelopment and Design of the Municipal Works Yard

Prepared by:

AECOM

302 – 1150 Morrison Drive
Ottawa, ON, Canada K2H 8S9
www.aecom.com

613 820 8282 tel
613 820 8338 fax

Project Number:

60337734

Date:

November, 2015

Statement of Qualifications and Limitations

The attached Report (the “Report”) has been prepared by AECOM Canada Ltd. (“Consultant”) for the benefit of the client (“Client”) in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents Consultant’s professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by Consultant represent Consultant’s professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since Consultant has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, Consultant, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by Consultant and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information (“improper use of the Report”), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

December 10, 2015

Mr. Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street
Cornwall, Ontario
K6H 5T9

Dear Mr. Wintle:

Project No: 60337734

Regarding: Consultation Round #2 Summary Report

We submit to you the Consultation Round #2 Summary Report

Sincerely,
AECOM Canada Ltd.

A handwritten signature in black ink, appearing to read 'Vanessa Skelton', with a stylized flourish at the end.

Vanessa Skelton, P. Eng.
Senior Transportation Engineer
Vanessa.skelton@aecom.com

Distribution List

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Revision Log

Revision #	Revised By	Date	Issue / Revision Description

AECOM Signatures

Report Prepared By:

Colin MacKenzie
Engineer in Training, Transportation

Report Reviewed By:

Vanessa Skelton, P. Eng.
Senior Transportation Engineer

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3. Public Information Centre

4. Conclusion

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Appendices

- Appendix 2-1. Consultation Round #2 Notices
- Appendix 2-2. Public Information Centre Display Material
- Appendix 2-3. Public Information Centre Comment Sheet

1. Introduction

The City of Cornwall initiated a Class Environmental Assessment (EA) for improvements and extension of Lemay Street from Pitt Street to McConnell Avenue and for the redevelopment of the Municipal Works Yard.

The purpose of the study was to conduct a detailed evaluation of future transportation demand for the east-west direction of travel in the area of Lemay Street. The study assessed current network deficiencies and developed a recommended plan to address capacity, operational and safety issues while minimizing environmental impacts. The study also reviewed the existing facilities of the Municipal Works Yard and developed a plan that will provide efficient operations in the future. The study area is illustrated in the **Figure 1**.



Figure 1. Study Area

The Lemay Street study is carried out in accordance with the requirements for a Schedule 'C' project under the *Municipal Class Environmental Assessment* document (2007, 2011). The EA process involves developing, assessing, and evaluating alternatives, which will result in a recommended plan to be presented to the City of Cornwall Council and the public. As part of the Lemay Street EA, a study to redevelop the Municipal Works Yard on Lemay Street will be carried out as a Schedule 'B' project.

Two rounds of public consultation were planned during the course of the study to review and discuss the project with the study team and solicit feedback. The purpose of this report is to present an overview of the second round of consultation and to document responses.

2. Project Website

Project information is posted on the City of Cornwall web site throughout the duration of the project. Public notices advising of public meetings are available on the website. Contact information is also provided to allow the public to comment throughout the study process.

3. Public Information Centre

One of the key objectives of the environmental planning process is to provide the public, interested parties and affected agencies with opportunities for meaningful input. To help ensure this objective is met, public and agency notification of the Public Information Centre (PIC) was undertaken.

Notices of Public Information Centre #2 were sent to interested parties the week of October 5th, including agencies, First Nations and local property owners. Copies of the English and French notices are provided in **Appendix A**.

The PIC was held Wednesday, October 21, 2015 from 4:00 pm to 7:00 pm at the Municipal Works Division Office on 1225 Ontario Street. The purpose of the PIC was to:

- Review the study background and Municipal Class EA Process;
- Consult on the alternative design evaluations and the preferred design for the Lemay Street extension;
- Review the proposed municipal works yard design;
- Review the costs of the Lemay Street extension and municipal works yard; and,
- Review Next Steps.

The PIC provided an opportunity for members of the public to view the display material and to discuss the project with the City of Cornwall and consultant representatives. Attendees were encouraged to provide written comments. The members of the project team in attendance consisted of:

- | | |
|----------------------|---|
| • Steve Wintle | Project Manager, City of Cornwall |
| • John St. Marseille | General Manager, Infrastructure & Municipal Works, City of Cornwall |
| • Enrique Kamm | Transportation Engineer, City of Cornwall |
| • Bill DeWit | Division Manager, Municipal Works, City of Cornwall |
| • Vanessa Skelton | Consultant Project Manager, Transportation, AECOM |

The displays presented at the Information Centre are provided in **Appendix B** and dealt with the following topics:

- Welcome
- Study Background
- Municipal Class EA Process
- Evaluation of Alternative Designs for Thirteenth Street between Sydney Street and Pitt Street
- Alternative Designs for Thirteenth Street between Sydney Street and Pitt Street
- Evaluation of Alternative Designs for intersection of Lemay Street / Thirteenth Street and Sydney Street
- Alternative Designs for intersection of Lemay Street / Thirteenth Street and Sydney Street
- Evaluation of Alternative Designs for Lemay Street road connection
- Alternative Designs for Lemay Street road connection
- Evaluation of Alternative Designs for intersection of Lemay Street and McConnell Avenue
- Alternative Designs for intersection of Lemay Street and McConnell Avenue
- Preferred Design

- Lemay Street Connection Costs
- Municipal Works Yard Design
- Municipal Works Yard Costs
- Next Steps

Seven people signed the attendance sheet and three comment sheets were received at the PIC. No additional comments were received prior to the final submission date for comments to be incorporated into this report. Comments received after this date will still be considered and will be documented in the Environmental Study Report as part of this project. Comment sheets with personal information removed are provided in **Appendix C** of this report.

Some points that were discussed at the Public Information Centre and mentioned on comment sheets were:

- Lemay Street connection will permit the introduction of a transit route
- Since on-street parking on Lemay will be removed, additional parking for Optimist Park will be required
- A privacy fence or landscaping along the future municipal works yard should be considered
- Preference for roundabouts
- Preference for traffic signals
- Speed of vehicles on Lemay Street

4. Conclusion

The residents that attended the Public Information Centre were positive about the proposed project and were looking forward to the construction.

The PIC exhibits were made available to the public on the City of Cornwall website following the PIC.

Appendix 2-1

Municipal Class EA, Proposed Improvement and Extension of Lemay Street, Redevelopment and Design of the Municipal Works Yard

- Consultation Round #2 Notices

Notice of Public Information Centre #2

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

The City of Cornwall initiated a Class Environmental Assessment (EA) in May 2015 for improvements and extension of Lemay Street from Pitt Street to McConnell Avenue. This study is being carried out in accordance with the requirements for a Schedule 'C' project under the *Municipal Class Environmental Assessment* document (2007, 2011). As part of the Lemay Street EA, a study to redevelop the Municipal Works Yard on Lemay Street is being carried out as Schedule 'B' project.

The purpose of the study is to conduct a detailed evaluation of future transportation demand for the east-west direction of travel in the area of Lemay Street. The study will assess current network deficiencies and will develop a recommended plan to address capacity, operational and safety issues while minimizing environmental impacts. The study area, which is subject to refinement during the EA process, is illustrated in the key map. The study will also review the existing facilities of the Municipal Works Yard and will develop a plan that will provide efficient operations in the future.



The EA process involves developing, assessing, and evaluating alternatives, which will result in a recommended plan to be presented to the City of Cornwall Council and the public. The study is expected to be completed by the fall of 2015. Upon completion of this study, an Environmental Study Report will be available for public review and comment. A notice of study completion will be published at that time.

Public Information Centre

Public open houses are being held during the course of the study to provide an opportunity for the public to review and discuss the project with representatives of the Project Team. The second Public Information Centre (PIC) will be held:

October 21, 2015
Municipal Works Division Office
1225 Ontario Street
Cornwall, Ontario
4:00 p.m.-7:00 p.m.

There is also 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.

For further information on this project, or to be added to our mailing list, please contact:

Vanessa Skelton, P. Eng.
Consultant Project Manager
AECOM
1150 Morrison Drive, Suite 302
Ottawa, ON K2H 8S9
Phone: 613-820-7728 ext. 251
E-mail: Vanessa.Skelton@aecom.com

Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street,
Cornwall, Ontario K6H 5T9
Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Avis de séance porte-ouverte

Étude d'évaluation environnementale de portée générale pour la proposition d'améliorations et de prolongement de la rue Lemay et le réaménagement et la conception du parc des Travaux municipaux

La Ville de Cornwall a entamé une étude d'évaluation environnementale (EE) de portée générale pour les améliorations et le prolongement de la rue Lemay, de la rue Pitt à l'avenue McConnell. Cette étude sera menée en conformité aux exigences imposées à un projet de l'annexe C dans le cadre d'un document d'évaluation environnementale municipale de portée générale (2007, 2011). Au sein de l'étude pour la rue Lemay, une autre étude sur le réaménagement du parc des Travaux municipaux, sur la rue Lemay, sera menée à titre de projet de l'annexe B.

Le but de cette étude est de mener une évaluation détaillée de la demande de transport future pour les déplacements est-ouest dans le quartier de la rue Lemay. L'étude évaluera les lacunes actuelles du réseau et élaborera un plan de recommandations pour aborder les questions de capacité, d'ordre opérationnel et de sécurité, tout en minimisant les effets environnementaux. La zone d'étude, qui sera précisée pendant le processus d'EE, est illustrée sur la carte-index. L'étude examinera aussi les installations existantes du parc des Travaux municipaux et élaborera un plan, qui en permettra une exploitation efficace dans l'avenir.



Le processus d'EE comprendra la création et l'évaluation d'alternatives, ce qui produira un plan de recommandations à présenter au conseil municipal de la Ville de Cornwall et au public. L'étude devrait s'achever à l'automne 2015. À l'achèvement de cette étude, un rapport d'étude environnementale sera mis à la disposition du public, qui pourra l'examiner et fournir des commentaires, et un avis d'achèvement de l'étude sera publié.

Séance porte-ouverte

Des séances porte-ouverte seront organisées pendant l'étude afin de donner au public l'occasion d'examiner le projet et d'en parler avec des représentants de l'équipe du projet. Le deuxième séance porte-ouverte aura lieu :

Le 21 octobre 2015
Bureau des Travaux Municipaux
1225, rue Ontario
Cornwall ON
16h00 – 19h00

La possibilité de fournir des commentaires à tout moment pendant le processus d'EE est offerte aux personnes intéressées. Tous les commentaires reçus à propos de l'étude seront recueillis dans le cadre de la *Loi sur les évaluations environnementales* et, à l'exception des renseignements personnels, feront partie du dossier public.

Pour plus de renseignements sur ce projet ou pour être ajouté à notre liste de distribution, veuillez communiquer avec :

Vanessa Skelton, ing.
Chargée de projet du cabinet de conseils
AECOM
1150, promenade Morrison, Bureau 302
Ottawa ON K2H 8S9
Tél. : 613-820-7728, poste 251
Courriel : Vanessa.Skelton@aecom.com

Steve Wintle, C.E.T.
Chargé de projet pour la Ville
Ville de Cornwall
1225, rue Ontario
Cornwall ON K6H 5T9
Tél. : 613-930-2787, poste 2204
Courriel : swintle@cornwall.ca

Appendix 2-2

Municipal Class EA, Proposed Improvement and Extension of Lemay Street, Redevelopment and Design of the Municipal Works Yard

- **Public Information Centre Display Material**

Welcome

City of Cornwall

Municipal Class Environmental Assessment

Proposed Improvement and Extension of Lemay Street

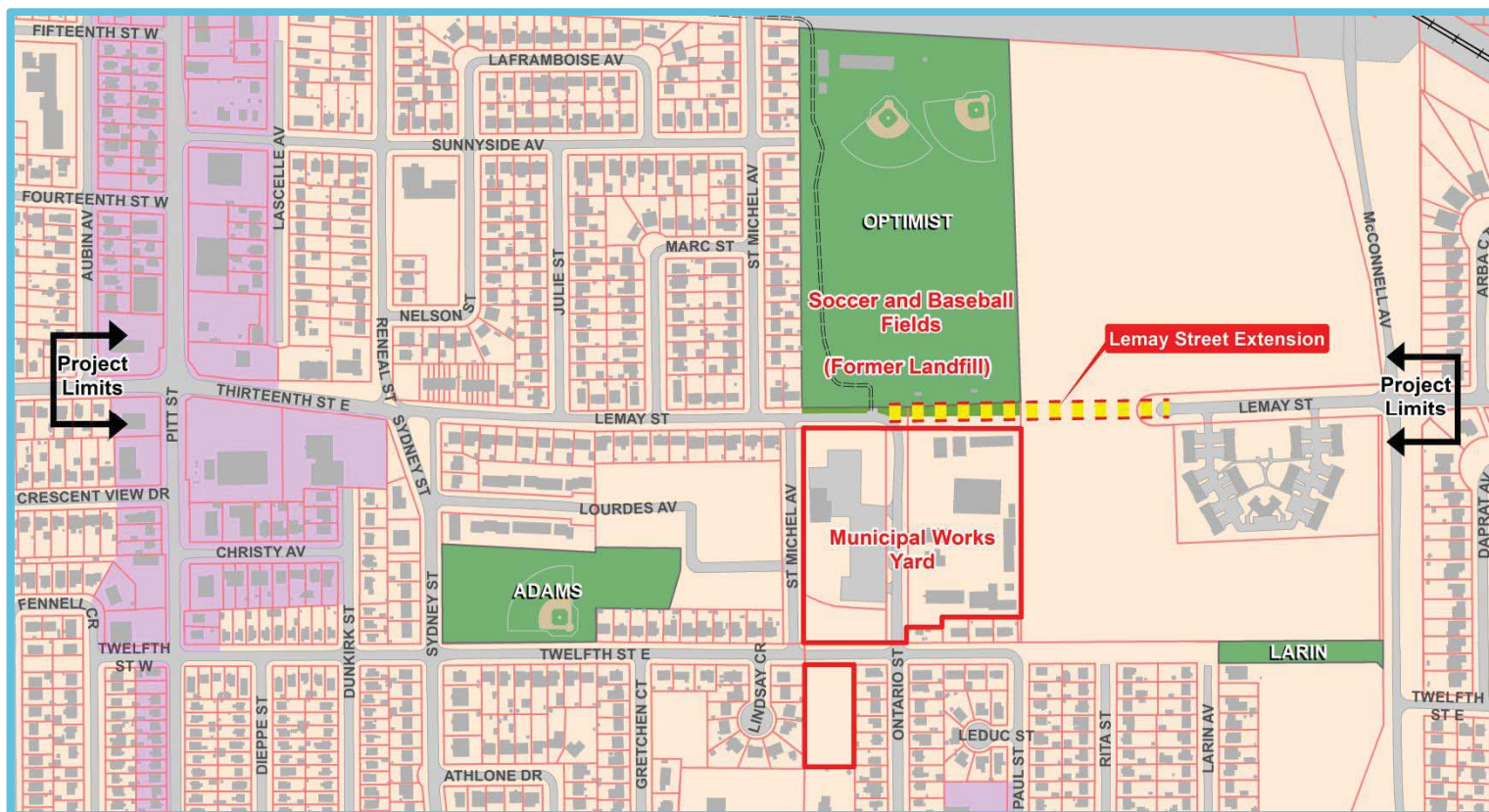
Redevelopment and Design of the Municipal Works Yard

Public Information Centre #2

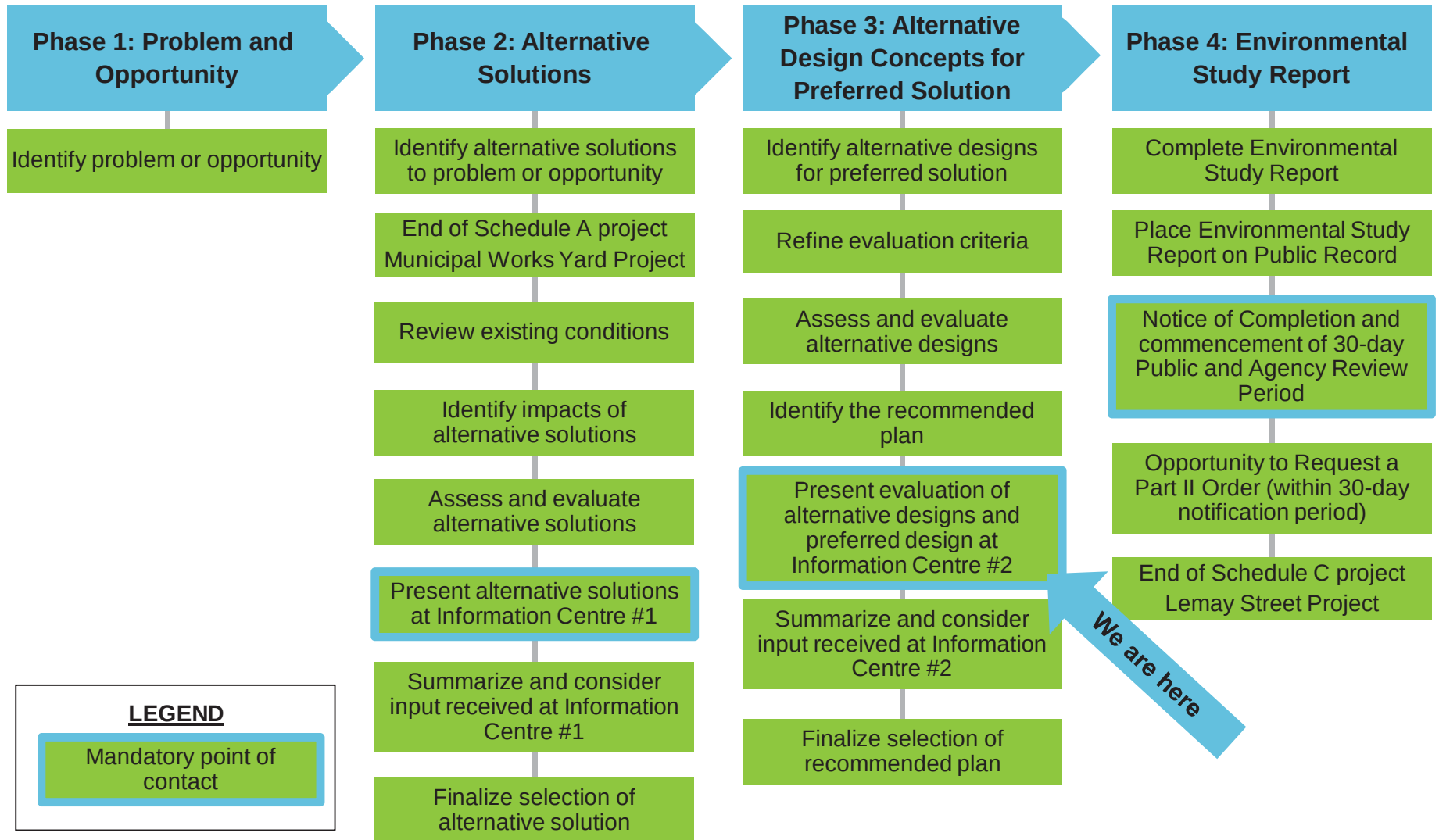
Wednesday, October 21, 2015

Study Background

- Two geographically related studies were initiated in early 2015.
- There is a need for updated and improved facilities within the City of Cornwall Municipal Works Yard on Ontario Street. This is a schedule A project under the Municipal Class Environmental Assessment.
- The City's Official Plan and 2006 Critical Infrastructure Review identified the need to extend Lemay Street. This is a schedule C project under the Municipal Class Environmental Assessment. The redevelopment of the municipal works yard provides an opportunity to connect the east and west sections of Lemay Street.



Municipal Class EA Process

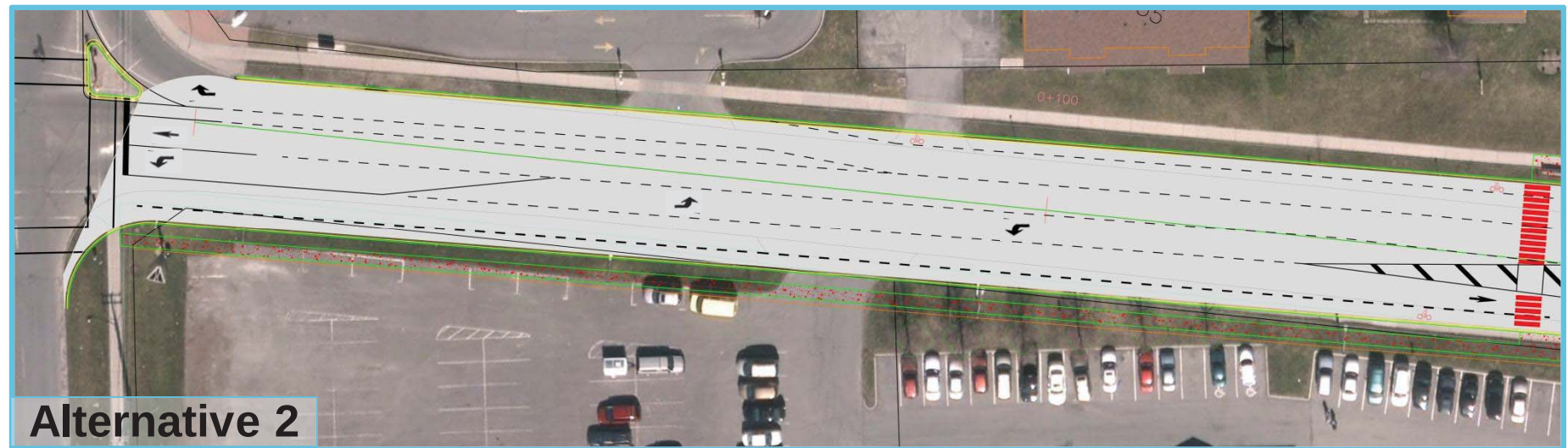


Evaluation of Alternative Designs for Thirteenth Street between Sydney Street and Pitt Street

EVALUATION CRITERIA	ALTERNATIVE 1 Remove Two-Way Left Turn Lane & Convert Westbound Through Lane to Shared Through/Left Lane	ALTERNATIVE 2 Add Cycling Lanes
1.0 TRANSPORTATION		
Active Transportation	Cycling lanes on this segment connect to cycling lanes on Lemay Street. x	Cycling lanes on this segment connect to cycling lanes on Lemay Street and extend beyond Pitt Street. ✓
Operations	Intersection of Pitt Street at Thirteenth Street operates with a LOS 'B' in AM peak hour and LOS 'C' in PM peak hour. Delay may be incurred by traffic queuing behind vehicles turning left into driveways from the through lane. —	Intersection of Pitt Street at Thirteenth Street operates with a LOS 'B' in AM peak hour and LOS 'C' in PM peak hour. ✓
2.0 LAND USE		
Property Access	No changes to existing property access ✓	No impacts to property access. ✓
Property Impacts	No property impacts. ✓	Property impacts on south side of Thirteenth Street east and west of Pitt Street. Impacts to nine parking spaces at Home Hardware. Area required at Mac's: 1m strip along the street, at Home Hardware: 2m along the street, at Medical Centre: 2m strip along the street. —
3.0 UTILITIES	No utility impacts. SCREENED OUT	
4.0 IMPLEMENTATION COST	Cost for repainting of lines on roadway (centre line, cycling lanes) and updating signal timing at the intersection of Pitt Street and Thirteenth Street. ✓	Additional cost for widening of roadway and reconstruction of sidewalks. —
RESULTS	—	✓

The addition of cycling lanes is the preferred alternative since it provides the best cycling lane connections and better traffic operations. Property impacts are minimal.

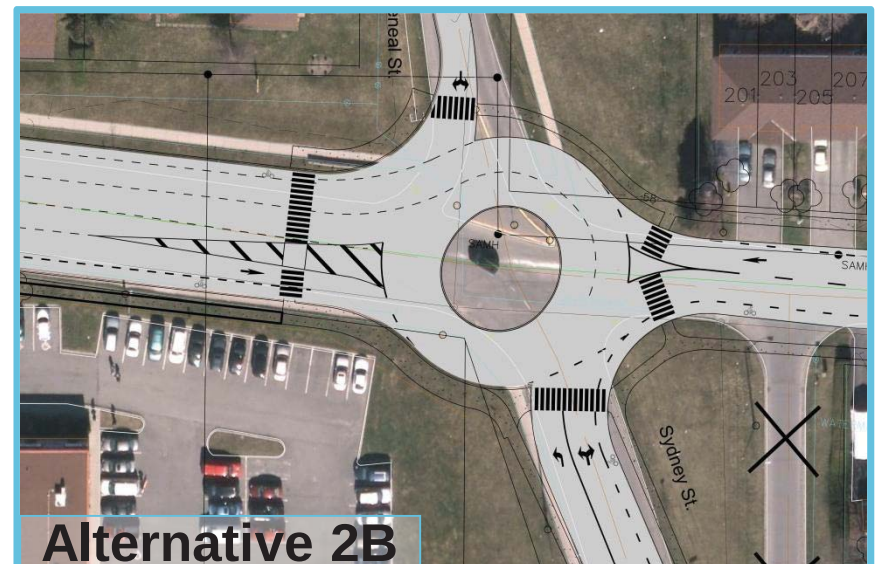
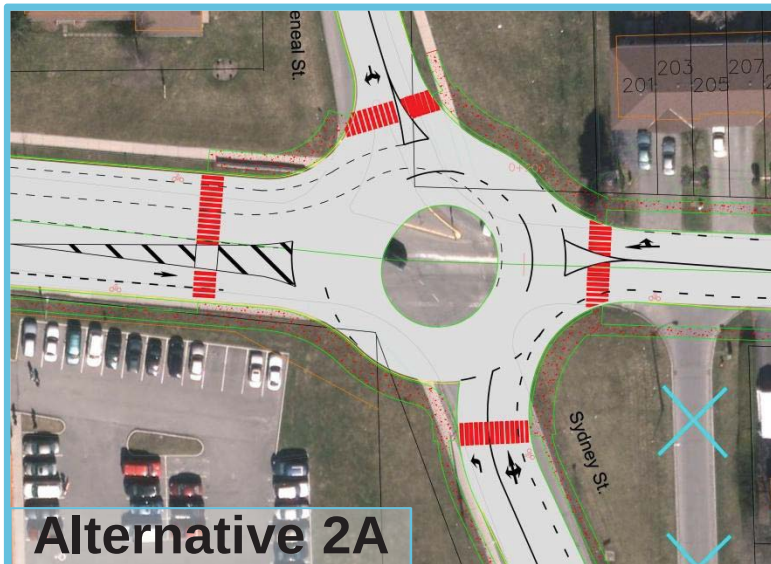
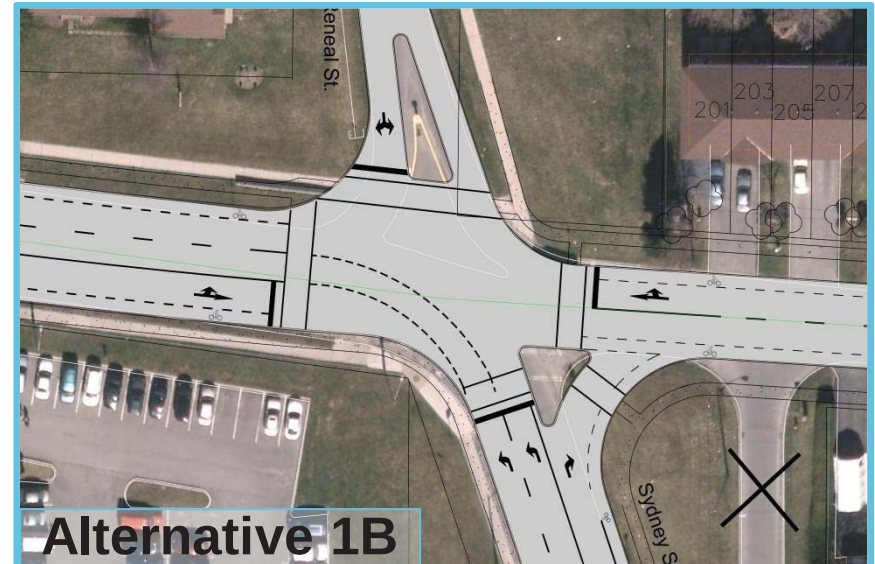
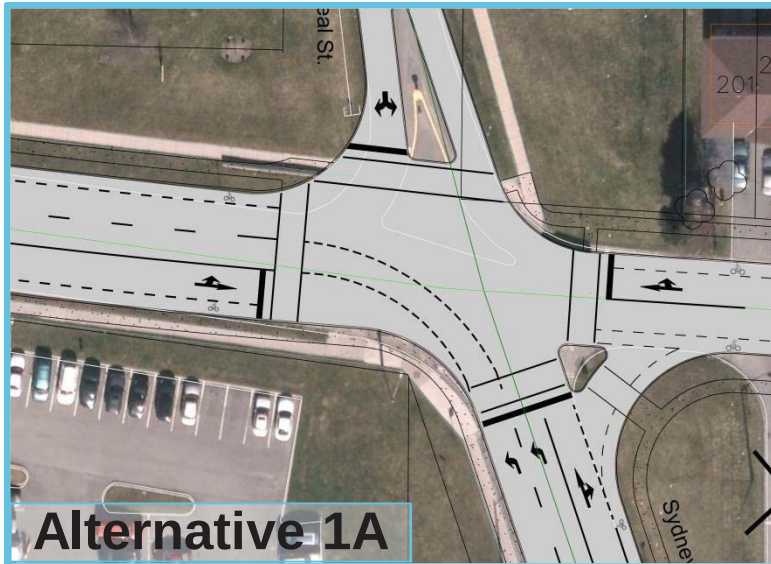
Alternative Designs for Thirteenth Street between Sydney Street and Pitt Street



Evaluation of Alternative Designs for intersection of Lemay Street / Thirteenth Street and Sydney Street

EVALUATION CRITERIA	ALTERANTIVE 1A Traffic Signals with Northbound Through Lane	ALTERANTIVE 1B Traffic Signals with No Northbound Through Lane	ALTERANTIVE 2A Roundabout with Full Access	ALTERANTIVE 2B Roundabout with Restricted Access
1.0 TRANSPORTATION				
Active Transportation	All intersection designs provide an opportunity for pedestrians and cyclists to cross all roads at the intersection. SCREENED OUT			
Operations	LOS 'C' in AM and PM peak hours. —	LOS 'C' in AM and PM peak hours. —	LOS 'A' in the AM and PM peak hours. ✓	LOS 'A' in the AM and PM peak hours. ✓
Number of Movements	All turning movements are possible. ✓	Northbound through movement is restricted. —	All turning movements are possible. ✓	Northbound through, eastbound left turn and westbound right turn movements are restricted. ✗
2.0 LAND USE				
Property Access	One access driveway to Medical Arts Building from Thirteenth St. —		An additional access to the Medical Arts Pharmacy parking lot is provided from Sydney St. ✓	
Property Impacts	No property impacts. ✓		A roundabout will require property at the southwest corner of the intersection. In compensation, property may be provided in exchange. —	
Through Traffic	A northbound through lane will increase the volume of through traffic on Reneal St. ✗	Restricting the northbound through movement prevents through traffic on Reneal St. ✓	A roundabout allows northbound vehicles to access Reneal St, which will increase the volume of through traffic on Reneal St. ✗	Access to Reneal St is restricted. Northbound, eastbound and westbound traffic must take a circuitous route to Reneal St. —
3.0 INFRASTRUCTURE / UTILITIES	No impacts or negligible impacts to utilities. SCREENED OUT			
4.0 IMPLEMENTATION COST	The costs for the intersection upgrades are relatively equivalent. SCREENED OUT			
RESULTS	✗	—	✓	✗

Alternative Designs for intersection of Lemay Street / Thirteenth Street and Sydney Street



Evaluation of Alternative Designs for Lemay Street road connection

EVALUATION CRITERIA	ALTERNATIVE 1 Straight Road Connection	ALTERNATIVE 2 Road Connection with Horizontal Deflection
1.0 TRANSPORTATION		
Network Connectivity	Both the straight road connection and the road connection with horizontal deflection will provide the same level of network connectivity. SCREENED OUT	
Safety	No speed reduction likely on a straight road. —	The road connection with horizontal deflection may reduce travel speed along Lemay St. A retaining wall is likely required in the clear zone to maintain the skateboard park, which is a safety impact. x
2.0 LAND USE		
Yard Design	A straight road does not provide additional property for the municipal works yard; however additional property is not required for the design of the municipal works yard. —	A road connection with horizontal deflection provides additional property for the municipal works yard. ✓
Property Impacts	No additional impacts. ✓	Impacts Optimist Park: the parking lot and the skateboard park. x
3.0 INFRASTRUCTURE / UTILITIES		
Contamination	Construction of the new road requires remediation of the existing subsurface landfill. —	The road with horizontal deflection will require additional remediation of the existing subsurface landfill. x
4.0 IMPLEMENTATION		
Cost	Construction costs for both roads are equivalent. SCREENED OUT	
RESULTS	✓	x

- The straight road connection is the preferred alternative since it is the safest alternative and it addresses the identified opportunity with the fewest impacts to the subsurface landfill.

Alternative Designs for Lemay Street road connection

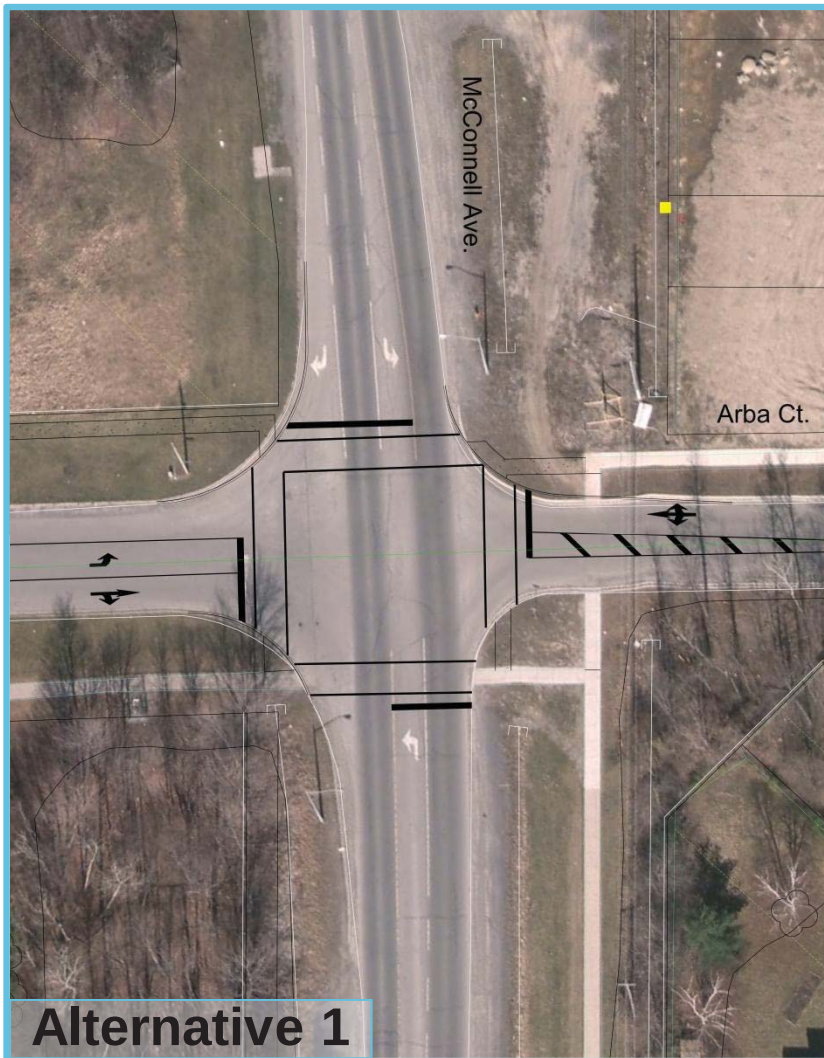


Evaluation of Alternative Designs for intersection of Lemay Street and McConnell Avenue

EVALUATION CRITERIA	ALTERNATIVE 1 Traffic Signals	ALTERNATIVE 2 Roundabout
1.0 TRANSPORTATION		
Active Transportation	Both options provide the opportunity for pedestrians and cyclists to cross at the intersection. SCREENED OUT	
Operations	Overall intersection LOS 'B' in the AM and PM peak hours. LOS 'B' for eastbound traffic in PM peak hour. ✓	Overall intersection LOS 'A' in the AM and PM peak hours. LOS 'A' for eastbound traffic in PM peak hour. ✓
Safety	No speed reduction on McConnell Avenue on a green signal for northbound and southbound traffic. x	Gateway feature provides speed reduction for northbound and southbound traffic on McConnell Avenue. A roundabout provides a rural to urban transition into the City of Cornwall and a speed zone transition of 70 km/h to 50 km/h. ✓
2.0 LAND USE		
Property Impacts	No property impacts for any alternative at the intersection of Lemay Street and McConnell Avenue. SCREENED OUT	
3.0 INFRASTRUCTURE / UTILITIES		
Utilities	No impacts or negligible impacts to utilities. SCREENED OUT	
4.0 IMPLEMENTATION		
Cost	\$210,000 ✓	\$485,000 x
RESULTS	x	✓

- The roundabout is the preferred alternative at this intersection since it addresses the identified opportunity with the best traffic operations and improves traffic safety.

Alternative Designs for intersection of Lemay Street and McConnell Avenue



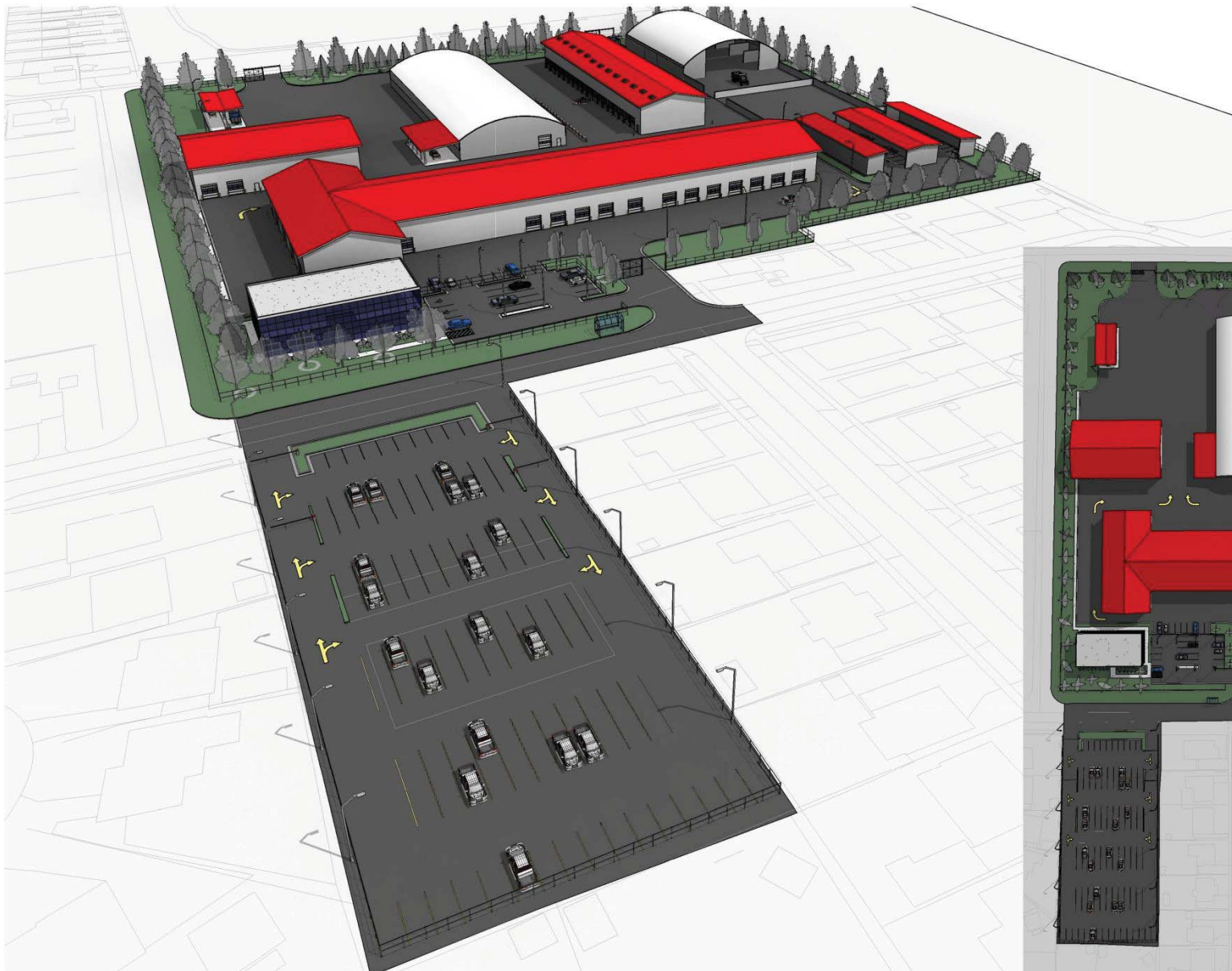
Preferred Design

Lemay Street Connection Costs

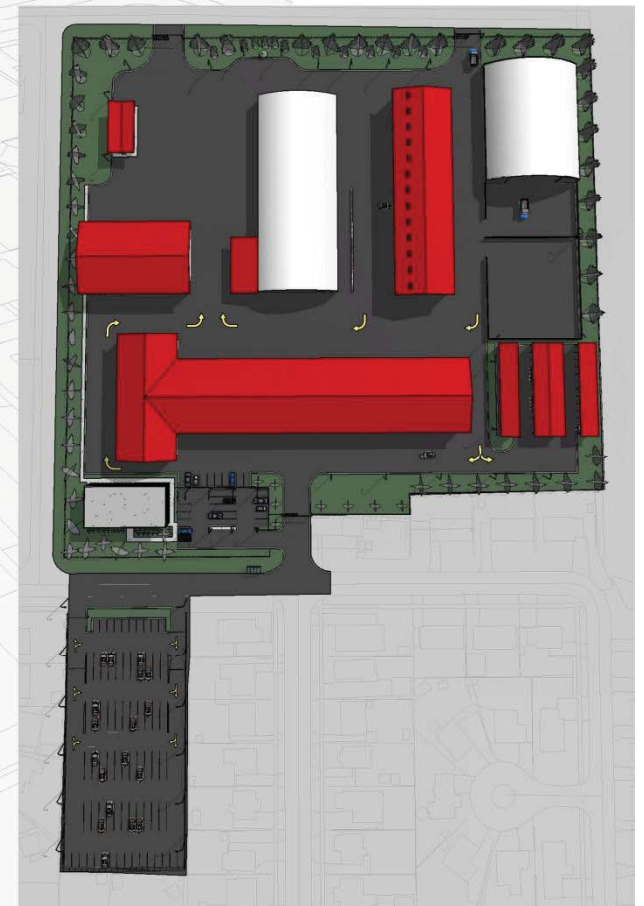
The total cost estimate for the Lemay Street connection is indicated in the table below.

	Total Cost
Roadwork Reconstruction/construction of two lane road between Pitt Street and McConnell Avenue, roundabouts at McConnell Avenue and Sydney Street, sidewalks, bicycle lanes, boulevards	\$2,905,000
Landscaping	
Storm Sewers	
Contingency	\$581,000
Total Cost	\$3,486,000

Municipal Works Yard Design



AERIAL VIEW FROM SOUTH WEST



OVERALL SITE LAYOUT

Municipal Works Yard Costs

The total cost estimate for the new municipal works yard is divided into stages as shown in the table below.

	Total Cost
Stage 1 - Construction of salt storage building, fuel pumps, water dispensing station. - Demolition/decommissioning of fuel pumps and water dispensing station.	\$1,520,000
Stage 2 - Construction of building containing public property section, road section, water & sewer section, traffic shop, tire storage and stores building. Construction of new employee parking lot. - Demolition/decommissioning of salt storage building, traffic shop and stores building.	\$7,940,000
Stage 3 - Construction of Optimist Park maintenance building and equipment storage building and municipal works yard garage. - Demolition/decommissioning of roads section building, tire shed, public property section building, municipal works yard garage, water & sewer section building, equipment storage shed and Optimist Park maintenance building	\$8,250,000
Stage 4 - Construction of administration building, heated parking storage, unheated parking storage, construction material storage, construction material open area storage and excavated material storage. - Demolition/decommissioning of administration building.	\$8,990,000
Sub-Total	\$26,700,000
Contingency	\$5,345,000
Total Cost	\$32,045,000

Next Steps

- Consider and document comments received
- Refine preferred alternative and develop recommended plan
- Complete Environmental Study Report
- Publish Notice of Study Completion and provide Environmental Study Report to the public for a formal 30 day review period

Thank you for attending

Your comments are welcome and very important to this study. Please fill in a comment sheet and deposit in the comment box. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments. You may also send your comments by mail or email to:

Mr. Steve Wintle, C.E.T.
City Project Manager
City of Cornwall
1225 Ontario Street
Cornwall, ON K6H 5T9
Tel: (613) 930-2787 ext. 2204
Email: swintle@cornwall.ca

Ms. Vanessa Skelton, P. Eng.
Consultant Project Manager
AECOM
1150 Morrison Drive, Suite 302
Ottawa, ON K2H 8S9
Tel: (613) 820-8282 ext. 251
Email: vanessa.skelton@aecom.com

Appendix 2-3

Municipal Class EA, Proposed Improvement and Extension of Lemay Street, Redevelopment and Design of the Municipal Works Yard

- **Public Information Centre Comment Sheet**



OPERATOR OF ALBERTA PRODUCTS PIPE LINE

2015-10-09

AECOM
1150 Morrison Drive, Suite 302
Ottawa, ON
K2H 8S9

Attention: Ms. Vanessa Skelton, P. Eng.

Subject: Extension of Lemay Street
City of Cornwall

Your File: N/A
Our File: 15-E178 182
Reference: MP-15, R/W-18

Trans-Northern owns and operates 273.1mm high pressure petroleum products pipeline within your proposed work area in City of Cornwall. We enclose a copy of our drawing M-1904-16 showing the approximate location of the pipeline. Please note that pipelines must always be located and depth confirmed at the crossing locations in the field prior to scheduling of any design or construction work within the vicinity. Unfortunately, we do not have updated information of the depth of our pipelines at the crossing locations. Therefore, a survey will be required in order to establish the exact location and depth of our pipelines in the field at your proposed work area. We are prepared to provide the inspector in the field, however, you are required to supply and bear the cost of excavation & surveyor as well as obtain the appropriate excavation permits. Please forward three copies of your plan indicating the locations where pipelines are to be exposed to establish elevation so that a permit could be issued to expose the pipelines. Also forward project owner's name, address, contact persons' name and tel. no.

Upon confirming the location and the depth of the pipelines in the field, please forward four copies of the drawing showing the following information for our review and approval.

- Plan and profile of the crossings in relation to the pipeline.
- Dimensions of the proposed work both on plan and profile view along TNPI pipeline.
- Pipeline right-of-way boundaries and dimensions
- Clearance distance between installation and pipelines in profile.

TORONTO

310-45 Vogell Road
Richmond Hill ON L4B 3P6

TEL (905) 770-3353
FAX (905) 770-8675

CALGARY

2140 Pegasus Way N.E.
Calgary AB T2E 8M5

TEL (403) 476-1645
FAX (403) 250-1298

As an interprovincial pipeline, Trans-Northern's activities are regulated by the National Energy Board, therefore, crossing of its right-of-way must conform to the Pipeline Crossing Regulations.

In addition, please be advised that no heavy equipment should cross the pipeline and no construction should take place within 30 m (100ft) of the pipeline easement without first informing Trans-Northern, our field services office must be notified in advance and the location of the pipelines must be marked prior to construction under Section 112 of the National Energy Board Act. These regulations are contained in the guidelines entitled "Excavation and Construction Near Pipelines" in order to ensure that any activity near a pipeline is carried out in the safest possible manner.

For information, we enclose one copy each of the following publications.

- TNPI "Pipeline Crossing Guidelines"
- TNPI "Contractor's Guidelines"
- NEB "Excavation and Construction Near Pipelines"

In order to have the pipeline located in the field, ON1CALL can be contacted at 1-800-400-2255.

Should you have any questions or comments, please do not hesitate to contact me at (905) 770-3353, ext. 211.

Yours truly,

TRANS NORTHERN PIPELINES INC.

A handwritten signature in blue ink, appearing to read "Satish Kumar Korpai", is written over a light blue horizontal line.

Satish Kumar Korpai
Co-ordinator- Crossings & Facilities

Public Information Centre #2

Comment Card



Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

Please provide your comments in the space below:

- Parking for the <u>park</u> when Lemay is becomes
arterial & parking is not permitted -
St. Michel ??
- Privacy fence / Landscaping but hours &
future HW yard.

Please leave your comment sheet with a member of the project team, or provide your sheet by **October 30, 2015** to:

Steve Wintle, C.E.T.,
City Project Manager, City of Cornwall,
1225 Ontario Street, Cornwall, ON, K6H 5T9
613-930-2787 x2204 swintle@cornwall.ca

Vanessa Skelton, P. Eng.
Consultant Project Manager, AECOM
1150 Morrison Drive, Suite 302, Ottawa, ON, K2H 8S9
613-820-8282 x251 vanessa.skelton@aecom.com

Optional:

Name: _____ Email: _____

Address: _____ Phone: _____

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

Comment Card



Please provide your comments in the space below:

I like what I see.

Steve Wintle, C.E.T.,
City Project Manager, City of Cornwall,
1225 Ontario Street, Cornwall, ON, K6H 5T9
613-930-2787 x2204 swintle@cornwall.ca

Vanessa Skelton, P. Eng.
Consultant Project Manager, AECOM
1150 Morrison Drive, Suite 302, Ottawa, ON, K2H 8S9
613-820-8282 x251 vanessa.skelton@aecom.com

Optional:

Name: _____ Email: _____

Address: _____ Phone: _____

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

Comment Card



Please provide your comments in the space below:

Opening lemma would make for a progressive transmit
note.

Vanessa Skelton, P. Eng.
Consultant Project Manager, AECOM
1150 Morrison Drive, Suite 302, Ottawa, ON, K2H 8S9
613-820-8282 x251 vanessa.skelton@aecom.com

Optional:

Name: _____ Email: _____

Address: _____ Phone: _____

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order) which addresses environmental assessments.

Open House #1 Comment Card



Municipal Works Division Office
1225 Ontario Street, Cornwall, Ontario
May 21, 2015, 4:00 pm - 7:00 pm

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

Let us know what you think...

The Parks Dept. has a gravel parking lot that could be affected by the proposed Lemay St. alignment. If the parking area conflicts with the proposed road alignment, the Parks Dept. would like to see the parking lot relocated relocated further north inside Optimist Park.

Please leave your comment sheet with a member of the project team, or provide your sheet by **May 30, 2015** to: Steve Wintle, C.E.T., City Project Manager, City of Cornwall,
1225 Ontario Street Cornwall, Ontario K6H 5T9 Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Optional:

Name: [REDACTED] Email: [REDACTED]
Address: Manager Parks & Recreation Phone: _____

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

Open House #2 Comment Card



Municipal Works Division Office
1225 Ontario Street, Cornwall, Ontario
October 21, 2015, 4:00 pm - 7:00 pm

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

Let us know what you think...

I have been a tax payer in Cornwall for
[REDACTED]
do not want my tax dollars spent on something
like roundabout.
Cornwall is asess as a senior city so how could you
even think of such a thing, bad choice

Please leave your comment sheet with a member of the project team, or provide your sheet by **October 30, 2015** to: Steve Wintle, C.E.T., City Project Manager, City of Cornwall,
1225 Ontario Street Cornwall, Ontario K6H 5T9 Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Optional:

Name: [REDACTED] Email: _____
Address: [REDACTED] Phone: [REDACTED]

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

Open House #2 Comment Card



Municipal Works Division Office
1225 Ontario Street, Cornwall, Ontario
October 21, 2015, 4:00 pm - 7:00 pm

Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class Environmental Assessment Study

Let us know what you think...

Being a resident of this area, I've been wondering when this was going to happen. An extension of Lemay St. would certainly help in getting out of our driveways in this area of McConnell Ave north. A street going right through to Pitt would be very welcome by all residents in this area. Also, being a hiker, a bike path would be fitting for all area as well.

Please leave your comment sheet with a member of the project team, or provide your sheet by **October 30, 2015** to: Steve Wintle, C.E.T., City Project Manager, City of Cornwall,
1225 Ontario Street Cornwall, Ontario K6H 5T9 Phone: 613-930-2787 ext. 2204
Email: swintle@cornwall.ca

Optional:

Name: [REDACTED] Email: _____
Address: [REDACTED] Phone: [REDACTED]

Any comments received pertaining to the study will be collected under the *Planning Act* and *Environmental Assessment Act*, and with the exception of personal information, will become part of the public record. If concerns raised as part of this Class EA cannot be resolved by the end of this process through discussion with the City of Cornwall, a person may request that the Minister of the Environment make an order for the project to comply with Part II of the *Environmental Assessment Act* (referred to as a Part II Order) which addresses environmental assessments.

From: Inforequest, Kemptville (MNRF) [<mailto:Kemptville.Inforequest@ontario.ca>]

Sent: Wednesday, November 25, 2015 7:17 PM

To: Kielstra, David

Subject: RE: Notice - Public Information Centre 2 - Cornwall - Proposed Improvement and Extension of Lemay Street and the Redevelopment & Design of the Municipal Works Yard Class EA

Hi David,

Thank you for sending the MNRF Kemptville notice of the second PIC for the Lemay Street extension project. Though we will not be attending the PIC, I would like to be sent any reports as they are created for the project for our review.

Thank you sincerely,

Lyn

Lyn Garrah, M.E.S.

District Planner

Ministry of Natural Resources and Forestry

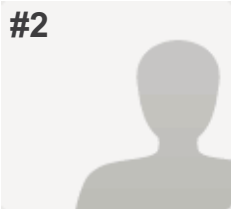
Kemptville District

10 Campus Drive, PO Box 2002, Kemptville, ON K0G 1J0

613-258-8414

**Comments Received to City
Website following Media
Release**

#2



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 8:07:11 PM

Last Modified: Sunday, November 29, 2015 8:07:53 PM

Time Spent: 00:00:41

IP Address: [REDACTED]

PAGE 1:

Q1: Name



Q2: Address

Respondent skipped this question

Q3: Email

Respondent skipped this question

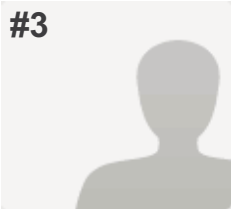
Q4: Phone

Respondent skipped this question

Q5: Let us know what you think!

I don't think it's needed. It's fine the way it is now.

#3



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 8:28:41 PM

Last Modified: Sunday, November 29, 2015 8:34:57 PM

Time Spent: 00:06:16

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

Q4: Phone

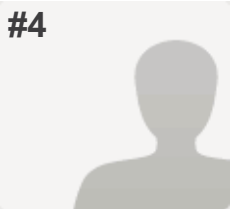
[REDACTED]

Q5: Let us know what you think!

Re: Thirteen Street & Lemay intersection.

I drive down Sydney Street and turn reast onto Lemay at least six times per day. I have no idea why a roundabout would even be considered or necessary at this location.

#4



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 9:15:48 PM

Last Modified: Sunday, November 29, 2015 9:19:30 PM

Time Spent: 00:03:42

IP Address: [REDACTED]

PAGE 1:

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[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

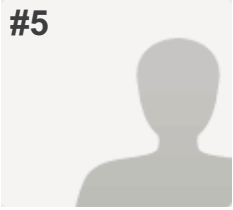
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

The reason for the plan is absolutely reasonable and fair. I agree with it. However, would there not be a more cost effective way? I'd like to know why street lights, stop signs, etc. wouldn't do the job... Hope this helps.

#5



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 9:31:55 PM

Last Modified: Sunday, November 29, 2015 9:32:37 PM

Time Spent: 00:00:42

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PAGE 1:

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[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

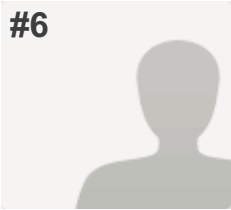
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

I approve the proposed roundabouts on Sydney and McConnell.

#6



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 9:49:44 PM

Last Modified: Sunday, November 29, 2015 9:51:53 PM

Time Spent: 00:02:08

IP Address: [REDACTED]

PAGE 1:

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[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

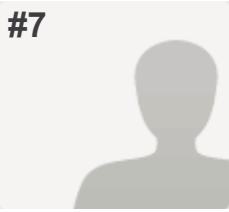
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

The east bound traffic on 13th to Lemay is negligible. As Sydney is already a one way this is a waste of money for little gain. The bike lanes should be taken off 2nd st and moved to the one way streets east and west north of 2nd.

#7



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 9:47:41 PM

Last Modified: Sunday, November 29, 2015 9:53:28 PM

Time Spent: 00:05:47

IP Address: [REDACTED]

PAGE 1:

Q1: Name

Respondent skipped this question

Q2: Address

Respondent skipped this question

Q3: Email

Respondent skipped this question

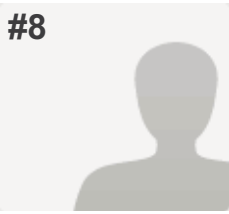
Q4: Phone

Respondent skipped this question

Q5: Let us know what you think!

We can't even use the one roundabout that we have properly, you want to had two more.! Maybe we should focus more on fixing the one we have. The flow of the traffic is horrid and the road rage because of the circle is ridiculous. Thank you

#8



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 10:25:49 PM

Last Modified: Sunday, November 29, 2015 10:35:15 PM

Time Spent: 00:09:25

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

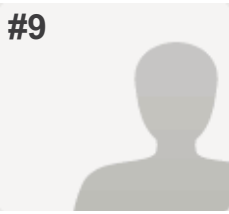
Q4: Phone

Respondent skipped this question

Q5: Let us know what you think!

All for the one on Sydney and lemay pulling up to the stop sign and going to lemay is a nightmare. However to place one after the over pass on McConnell where it switches from an 70 zone to a 50 isn't the best idea why not have that as a stop sign. I'd like the city to survey how much traffic actually goes through lemay and Ontario street because you're literally adding this for the city workers which honestly isn't worth the millions that it will cost.

#9



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Sunday, November 29, 2015 11:01:23 PM

Last Modified: Sunday, November 29, 2015 11:08:38 PM

Time Spent: 00:07:15

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

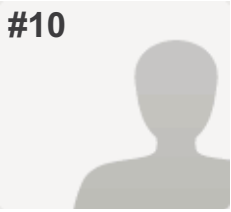
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

I think that the round about for the Sydney/13th is reasonable since it is close to that already. The other proposed round about is a terrible idea for the current residents who already have a hard time getting onto McConnell. I think you should study the key peak work commuting hours and try to remedy an already poorly designed traffic layout before adding to the confusion and frustration. Also so many of these new traffic lights being replaced or erected are done so improperly and create terrible RF interference. Many under road grid sensors are placed too far up and need the vehicle to cross the white line by half a length or more before the sensor works. The RF is present through radios.

#10



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Monday, November 30, 2015 3:28:53 PM

Last Modified: Monday, November 30, 2015 3:37:09 PM

Time Spent: 00:08:15

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

Q4: Phone

[REDACTED]

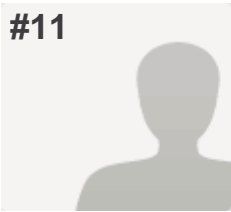
Q5: Let us know what you think!

I believe the plan for the roundabout is a good one and will solve some traffic issues.

I have a question about the proposal, however. It seems the narrow road that passes in front of our home will be eliminated. Will this elongate our driveway or add a connecting road? Who will be responsible for snow removal of this portion of road. If it is the city, will it be plowed simultaneously with the rest of the road? Does it also add greenspace to the area in front of our home? If so, who is responsible for maintenance (lawn cutting, weeding) of it?

Thank you

#11



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Monday, November 30, 2015 10:39:11 PM

Last Modified: Monday, November 30, 2015 11:04:29 PM

Time Spent: 00:25:18

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

[REDACTED]

[REDACTED].com

Q4: Phone

Respondent skipped this question

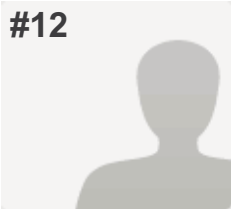
Q5: Let us know what you think!

I think this is the worst plan EVER...as things stand now I am afraid to use my customary stores and stops at the Brookdale Mall because Lowes has closed off our (Riverdale) entrance to the mall...For years I have asked for an entrance to the mall off Rosemont so that seniors could avoid the heavy CONFUSING Brookdale traffic...open up ninth to Riverdale...and kill those bike lanes (mostly UNUSED) on Second...How are we to see or remember all the inane lane changes to Anderson when the lines are covered with snow...Best to just stay at home if one is over seventy!

AND I do not wish to contribute one penny to a new yard...So much City work is contracted out now...No new yard is needed!

Give your heads a shake!

#12



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Tuesday, December 01, 2015 7:18:12 AM

Last Modified: Tuesday, December 01, 2015 7:27:37 AM

Time Spent: 00:09:25

IP Address: [REDACTED]

PAGE 1:

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[REDACTED]

[REDACTED]

[REDACTED]

Q3: Email

[REDACTED]

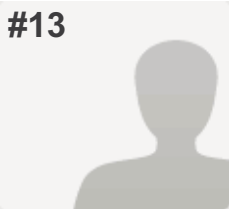
Q4: Phone

Respondent skipped this question

Q5: Let us know what you think!

I absolutely hate roundabouts...why anyone thinks these are a good idea is beyond me.

#13

**COMPLETE****Collector:** Web Link 1 (Web Link)**Started:** Tuesday, December 01, 2015 8:24:23 AM**Last Modified:** Tuesday, December 01, 2015 8:34:50 AM**Time Spent:** 00:10:27**IP Address:** [REDACTED]

PAGE 1:

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[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

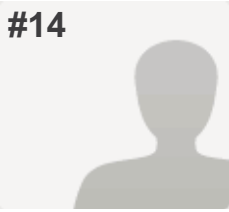
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

I don't mind these at all. Having visited communities that have roundabouts currently, I don't find they impede the flow of traffic at all. If anything, it helps to control speeds and flow and I think at Lemay and McConnell, that's an area that will continue to see increased traffic with the new residential development and there are quite frequently folks going over the posted limit right about that area. People tend to forget there are two residential communities near the CNR overpass that access McConnell and should keep to the posted limits between 11th and the overpass. There's a reason the limit only changes north of the tracks. At Thirteenth and Sydney, I think it'll improve traffic flow, in that drivers going west to east along Thirteenth thru Sydney and onto Lemay will be a lot less likely to "take a chance" at this corner, like they do now. That 70° bend always worries me when folks driving Corolla's and Smart Cars think they are behind the wheel of a ultra performance cornering machine like a Ferrari or something of the sort. They cut the corner short, go around far too fast and then occasionally cut people off to head north on Pitt. That bend in the road is a nightmare. Roundabouts? Bring them on.....I for one support them. By the way, stick one along Brookdale somewhere along that brand new stretch between Wendy's and Home Depot.....too many people think that's a drag strip. Either that or stick speed bumps or something along there, slow people down a bit.

#14



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Tuesday, December 01, 2015 12:00:55 PM

Last Modified: Tuesday, December 01, 2015 12:14:18 PM

Time Spent: 00:13:22

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

[REDACTED]

[REDACTED]

Q3: Email

[REDACTED]

Q4: Phone

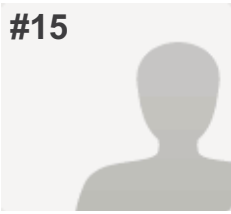
[REDACTED]

Q5: Let us know what you think!

RE: LEMAY & MC CONNELL ROUNDABOUT.

Strongly disagree. \$3.5M dollars could be spent much more wisely than on this project. If need be, install lights, not an accident causing, confusing traffic circle that will result in more injuries and property damage than they are designed to avoid! Furthermore, we have just spent a ton of money on resurfacing McConnell. These things seem to be the latest rage within a number of municipalities and they simply do not work. Try out the ones in Kemptville...they are despised by the motorists I know of and are a source of accidents. Let the Europeans have fun with them, we don't need them here! Did you all go to the same seminar, why are these things being favored by so many municipal administrators all of a sudden? [REDACTED]

#15



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Tuesday, December 01, 2015 1:57:01 PM

Last Modified: Tuesday, December 01, 2015 2:02:51 PM

Time Spent: 00:05:49

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

Q4: Phone

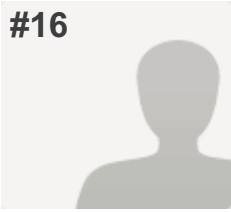
[REDACTED]

Q5: Let us know what you think!

Interesting plan. The addition of two new round-a-bouts/traffic circles in town may provide efficiency, only if they are true round-a-bouts. As in, cars approaching the roundabout are forced to yield to those already in the circle, unlike the confusing mess that exists on Brookdale. And to have two new circles in one configuration, and the old one in another config would be confusing and frustrating. I can only support this if all three roundabouts were configured the same way.

Hell, even if the two new roundabouts don't get approval, please fix the one on Brookdale. We are Bass Ackwards.

#16



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Tuesday, December 01, 2015 9:20:55 PM

Last Modified: Tuesday, December 01, 2015 9:22:17 PM

Time Spent: 00:01:22

IP Address: [REDACTED]

PAGE 1:

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[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

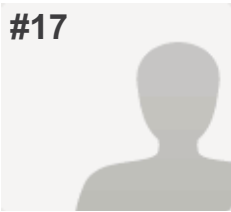
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

This is a horrible idea. Please do not add roundabouts to our city.

#17



COMPLETE

Collector: Web Link 1 (Web Link)

Started: Wednesday, December 02, 2015 6:25:21 PM

Last Modified: Wednesday, December 02, 2015 6:46:34 PM

Time Spent: 00:21:12

IP Address: [REDACTED]

PAGE 1:

Q1: Name

[REDACTED]

Q2: Address

[REDACTED]

Q3: Email

[REDACTED]

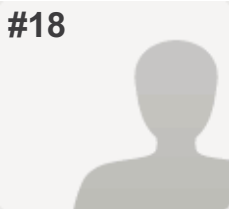
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

I am happy to see that Lemay Street will be opened up to McConnell Avenue but I am not seeing the benefits of a roundabout at the intersection of Sydney Street and Thirteenth Street. I work in the Medical Building located at 30 Thirteenth Street East and my route home requires me to make a left turn from the parking lot onto Thirteenth Street. Most nights I have to wait for several minutes (perhaps 2 or 3 light changes from the intersection of Eleventh and Sydney Streets?) to get a break in the traffic so that I can safely cross to the far lane to enable me to make a quick right turn onto Pitt Street. Traffic coming around the curve of Sydney Street is heavy and usually seems to be going faster than it should be on a curve. I believe that once Lemay Street is open that traffic coming from the east will only add to the congestion and make it even more difficult to enter the roadway from the Medical Centre or Home Hardware. I think only thing that will stop traffic long enough for breaks in the traffic to make safe left turns would be a traffic light. My office window looks out on the Sydney Street curve and I see many transports, large trucks as well as the city fire trucks use that roadway. I wonder how well they will be able to navigate a roundabout? These are my thoughts, hopefully you will take them into consideration. Thank you.

#18

**COMPLETE****Collector:** Web Link 1 (Web Link)**Started:** Thursday, December 03, 2015 7:02:38 PM**Last Modified:** Thursday, December 03, 2015 8:27:39 PM**Time Spent:** 01:25:00**IP Address:** [REDACTED]

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Q5: Let us know what you think!

The Municipal Works yard improvement looks great. The two entrances off Lemay St. is a good idea. In regards to the Lemay St improvement, I am in favour of extension to McConnell Ave. but I am not in favour of the round-a-bouts. Attempting to enter a round-a-bout would be the same as trying to enter the main thruway from a stop sign. Signal lights at McConnell and Lemay St with priority given to thru traffic on McConnell Ave. would make entering onto McConnell from Lemay and Arba Court a little easier.

As for Sydney and Lemay, I would suggest bringing Sydney St. to a "T" with 2 left turn lanes and 1 right turn lane controlled with traffic signals. Access to and from Reneal St. be abolished.

Also, Optimist Park needs additional parking. During the summer months cars park on Lemay Street to access the soccer fields. Relocating the skate park, to the former Bob Turner Centre, and making a parking lot from that vacant area would be ideal, with access from Lemay St. of course.

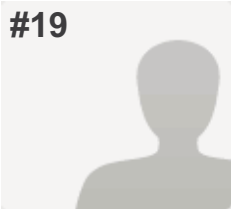
Snowbanks may interfere with visibility of the round-a-bouts.

Off topic--I would like to see Cornwall Transit stops on Lemay St. to access the low income housing, Optimist Park and for employees of Municipal Works.

I hope you consider these options. Thank you for giving the residents of Cornwall a chance to voice their opinion in this manner.

[REDACTED]

#19



COMPLETE

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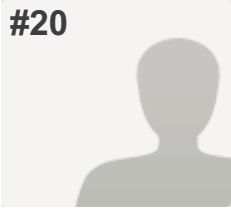
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Q5: Let us know what you think!

Sir, let me first say that I am in favour of the proposal as outlined. Having driven thousands of kilometres in Europe, I am a believer in the efficiency of the roundabout. Also, the additional east-west corridor would be an asset. I know that there will be opposition to roundabouts, since so many people shy away from change, but I believe that this sort of change is necessary and would, sooner than later, be accepted and appreciated. Thank you for your time, [REDACTED]

#20



COMPLETE

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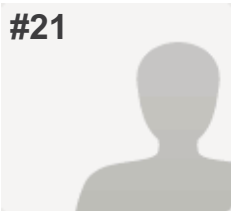
Q4: Phone

[REDACTED]

Q5: Let us know what you think!

given that the city does not own the land pertaining to the extension wouldn't it be more cost effective to flow traffic through the 12th st extension which we own?. i understand the green space issue but with optimist park and 12th st park close by its not a huge loss. it would also allow municipal works easier access to the water and sewer mains within that easement. it would also open two city dead ends. traffic would still flow through the Michel and Lourdes route. a proper parking lot for optimist park can still then be added.
picture 5 trucks waiting on lemay for the new traffic circle at Sydney with plows on. 12th is wide enough to allow for this. just a thought.

#21



COMPLETE

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Q4: Phone

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Q5: Let us know what you think!

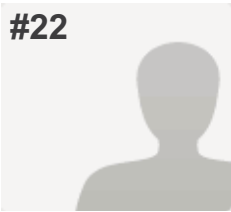
This is our SECOND communication to you regarding this issue.

We are at [REDACTED]. Our next-door neighbours and we are directly affected by this proposed change and we are very dissatisfied at the level of communication from the city. We should have received a letter from the city much earlier. We did not like being surprised by this with a post on Facebook. We do not subscribe to the hard-copy of the Standard-Freeholder, nor do we visit the City of Cornwall website on a regular basis. Apparently these were the initial chosen sources to share this information with the public. Again, we deserved to be personally advised of this major disruption which could happen in our FRONT YARD!

The plan for the roundabout seems to show our driveway being extended to an unacceptable length and the road in front of our home being eliminated. Please advise us by email as to what days and times Mr.Wintle would be available to talk to by phone this week.

Thank you

#22



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Q4: Phone

[REDACTED]

Q5: Let us know what you think!

I am all for the Lemay Street extension, but I am totally against the re-building of the Municipal Works Yard at an estimated 32 Million dollars at the Ontario Street location.

The site (buildings) need to be replaced.

I would prefer to see the City, select a location in the Industrial Park and design the new buildings with the proper infrastructure and design that will can best for future use.

Why spend money, on a location with dated infrastructure and is in the middle of a residential area.

If the demand for additional services increase, we will be "land locked"

Decommission the buildings and ground as the buildings become redundant and over a period of time the property can be retained by the City for Affordable Housing Projects or sold to a developer to development.

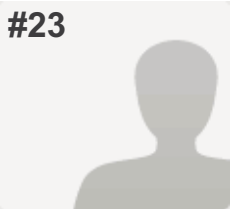
With the Optimist Park right there, I think it would be a great benefit to a housing project.

I also think the City should look at possibly purchases of property that could meet these needs as well as other departments.

e.g. Domtar (north) CIL and the Brentag (scheduled to close 2017) sites.

Transits there (also with fuel tanks and large vehicle bays) Benson Centre (board rooms, training rooms, parking etc, etc)

#23



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Q3: Email

Respondent skipped this question

Q4: Phone

[REDACTED]

Q5: Let us know what you think!

1. I am concerned that we were not advised before the planning meeting of this proposal. Also, we did not receive invitations to the planning meeting on October 21st.

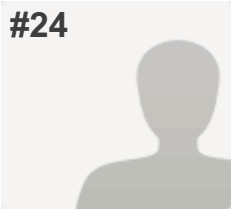
2. Access to Sydney St--Currently there isn't a great deal of traffic to cope with when backing out onto Sydney St. With the proposed changes, this will greatly impact the ease in which this occurs.

3. Cost of snow removal when driveway is lengthened. I have a physical handicap and pay to have my driveway cleared.

4. Property value will possibly be negatively impacted. I am in contact with a realtor in regards to this.

5. Will be looking at getting legal advice

#24



COMPLETE

Collector: Web Link 1 (Web Link)

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Q4: Phone

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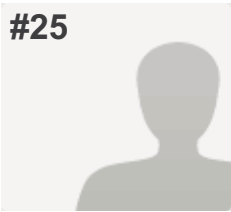
Q5: Let us know what you think!

It is my understanding that traffic flow studies have indicated the need for another east - west link. This new link will take traffic off Tollgate and Eleventh St which is good.

The roundabouts are an excellent choice for improved traffic flow. My son lives in Quispansis NB and they have built in a few roundabouts at some intersections. I find when I travel these the traffic flow is smooth with less stops. Yes there will be naysayers that say we don't need roundabouts however with a bit of education and signage most everyone will get on with them. One point for Cornwall is with the existing traffic circle, which does not operate as a roundabout, it will be confusing having both. With the bridge gone and Brookdale being redeveloped now would be the time to convert the circle to a roundabout. I am sure I am understating the requirements to do so but it might just involve signage and lane markings. And of course a bit of education.

As for the new public works hard, this is a very high expenditure that may not have the allure of a sports center or secondary treatment plant and will be a tough sell to the taxpayer with other competing high priorities. Every attempt should be made to reuse existing facilities if and where possible and work that into the plan.

#25



COMPLETE

Collector: Web Link 1 (Web Link)

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[REDACTED]

Q5: Let us know what you think!

Cars currently making the left turn from the right hand lane on the curve northbound from Sydney St. to 13th St. drift left into the left lane on the curve. I think this issue will be made worse by making the current curve into a full roundabout.

Also, I would like to see operational examples of roundabouts where some but not all of the roads entering are one way. I have tried to find one that works that way but have not been successful.

The traffic in eastbound lanes of 13th St. in any configuration of a roundabout needs to be physically prevented from accidentally turning south onto Sydney.

The street lighting would need to be improved to be able to see traffic about to enter or exit a roundabout, too.

Since the road will be cut through where it now is not a through street, there will be considerably more traffic travelling on that section of roadway to and from Pitt St.

The plan did not show exactly how pedestrians would traverse the area.

I think carefully coordinated traffic lights would be a better solution than a roundabout.

[REDACTED]

Appendix C

Municipal Class Environmental Assessment Improvement and Extension of Lemay Street – Corporation of the City of Cornwall

- **Natural Environment Report**

Natural Environment Report

Proposed Extension of Lemay Street in Cornwall

Part of Lots 7 and 8, Concession 2, City of Cornwall

Environmental Impact Statement

Prepared for:
AECOM

1150 Morrison Drive, Suite 302
Ottawa, Ontario, K2H 8S9

Prepared by:
Bowfin Environmental Consulting Inc.
168 Montreal Road
Cornwall, ON
K6H 1B3

April 2016

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1.0 INTRODUCTION

Bowfin Environmental Consulting Inc. (Bowfin) was retained by AECOM to prepare an Environmental Impact Assessment (EIA) for the proposed Lemay Street extension which forms part of the request for proposal 14-P16 (RFP) issued by the City of Cornwall (City). Under consideration is the extending of Lemay Street from Ontario Street to 200 m west of McConnell Avenue. The total length of the extension would be 240 m of which approximately 125 m would travel through a natural environment. The remainder would run through developed lands (Optimist Park and Ontario Street Municipal Works Yard). This Environmental Impact Statement (EIS) discusses the area situated within the natural habitats which are referred to as the study area (Figure 1). The remainder of the lands within the project area (Figure 1) consists of residential and commercial lands or manicured parks.

The natural area consists primarily of forested lands and is situated within part of Lots 7 and 8, Concession 2, in the City of Cornwall (Figure 1). The purpose of this assessment is to address any EIS requirements related to the natural environment as set out in Section 4.11 of the Official Plan (OP) as well as those pertaining to the federal *Fisheries Act* and *Species at Risk Act* and the Ministry of Natural Resources and Forestry (MNRF) *Endangered Species Act*.

The OP follows the guidelines set out in the Provincial Policy Statement in which there are several natural features and areas identified as needing protection. These are:

- Significant habitat of Endangered and Threatened Species;
- Significant wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Significant Areas of Natural and Scientific Interest; and
- Fish habitat.

Within the City of Cornwall, the significant natural features are designated as Environmental Constraints Areas (ECA) on Schedule 3. The OP indicates that land owners are encouraged to apply best management practices in protecting natural heritage features. No development in or within 120 m of identified Environmental Constraint Areas [including Provincial Significant Wetlands (PSW)] and 30 m for fish habitat is permitted unless an EIS has been conducted and determines that there are no negative impacts to the feature or its ecological functions.

This EIS was scoped to potential impacts associated with the proposed road extension and limited by the approved field work. The work undertaken included:

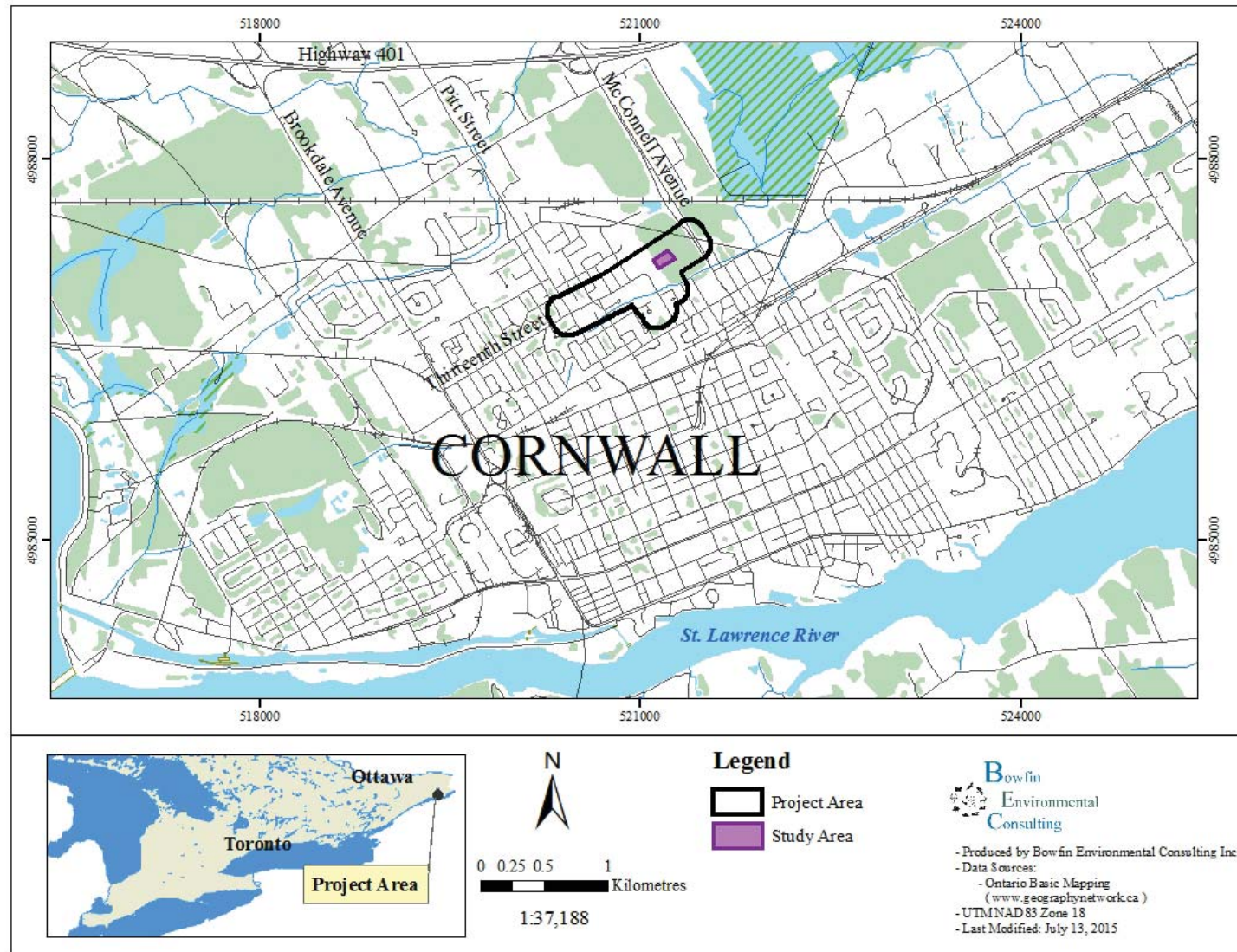
Background Review:

- collection of background information.

Field Investigations:

- Habitat mapping (aquatic, wetland and terrestrial)
- Tree cavity Survey
- Raptor nest inventory
- SAR breeding bird surveys (one day and one night time survey)
- SAR plant inventory (butternuts)

The report begins with a review of background information to determine if any significant natural features were designated within or adjacent to the subject lands followed with a summary of existing conditions as observed during field investigations. Where identified, the boundaries of any significant features are noted and the potential for the proposed extension to cause negative impacts is addressed. For those features which may be negatively affected, mitigation measures are recommended.

Figure 1 Location of the Subject Lands

2.0 METHODS

Work undertaken for the completion of this project included a background review of existing information and field investigations.

2.1 Background Review

The background review began with preliminary mapping of the vegetation communities as a desktop exercise. A search through available records and consulting reports was then made in order to gather information on the known natural heritage features within the project area. The following web sources were used during the background review: Natural Heritage Information Centre (NHIC) and the Schedules of the OP. Land Information Ontario (LIO) databases were accessed and an information request was sent directly to the Ministry of Natural Resources and Forestry (MNRF) Kemptville for any additional information not available on the websites. The background review included the identification of natural features in and within the adjacent lands.

2.2 Field Studies

The field visits looked at both the terrestrial and aquatic habitats. Inventories completed included the collection of data on the flora, and birds. Incidental observations of other wildlife species were also noted. A list of dates and ambient conditions during each field visit is provided in Table 1.

Study Area

While the project includes more than just the road extension, the road extension is the only portion that occurs within natural area. The remainder of the lands in the study area (Figures 1 and 2) are developed or maintained as manicured lawns. As such, the focus was the natural habitat within the proposed road extension alignment (Study Area) and the surrounding 120 m (referred to as influence area in the OP).

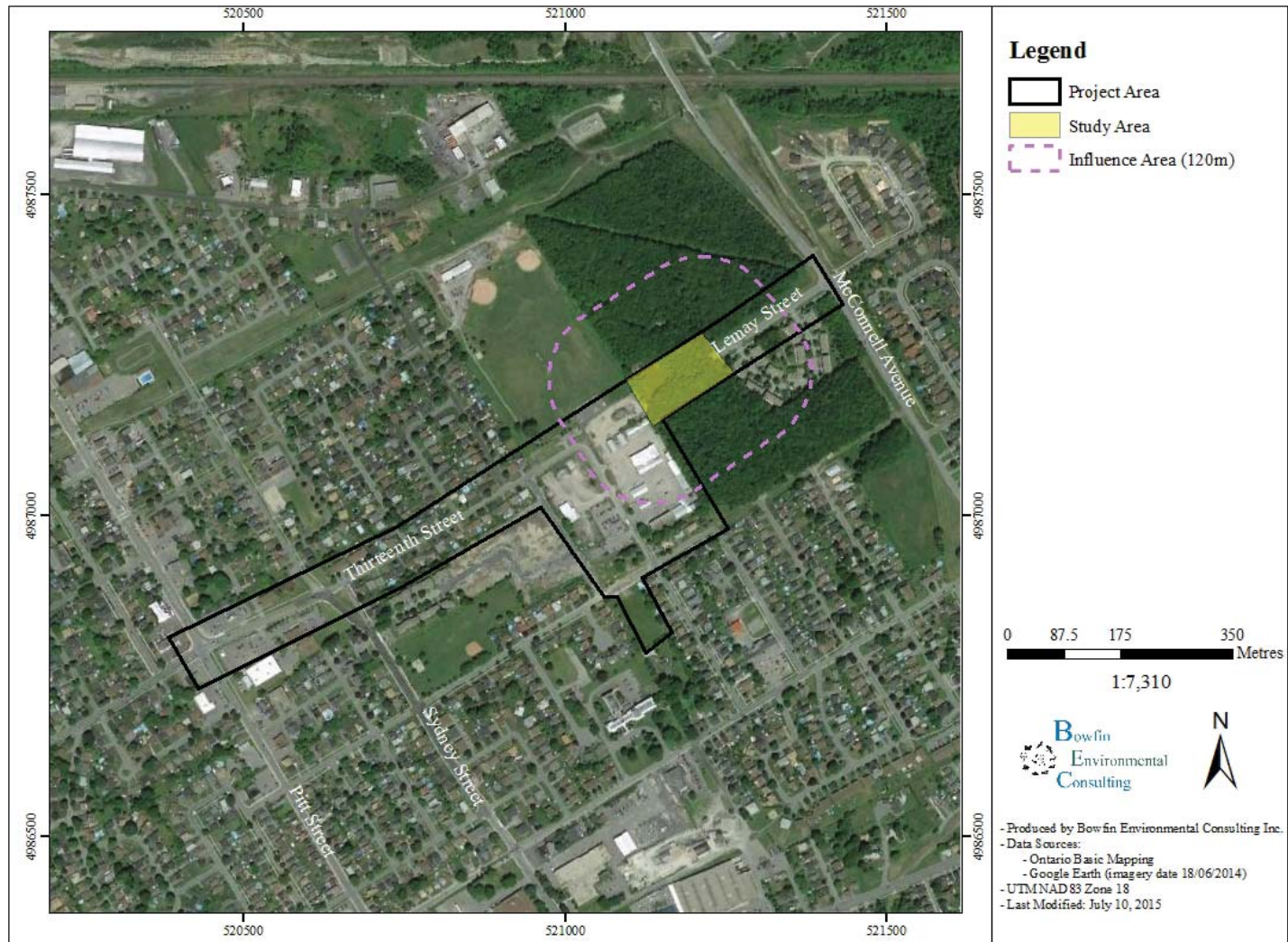
Table 1 **Summary of Dates, Times and Location of Site Investigations**

Date	Time (h)	Staff	Air Temperature (Min-Max) °C	Weather	Moon Visibility (%)	Purpose
May 15, 2015	0715- 0930	S. St. Pierre C. Fontaine	10.0-15.0 (4.8-20.8)	Overcast, light air	n/a	- Initial Visit - Bat Cavity Survey - Spring Plant Survey - Raptor Nest Survey
May 27, 2015	0900- 0930	B. Pierson	24.0 (18.1-28.1)	Clear skies, light to gentle	71.3	- Whip-poor-will Survey

Date	Time (h)	Staff	Air Temperature (Min-Max) °C	Weather	Moon Visibility (%)	Purpose
				breeze		
June 20, 2015	0945- 1045	M. Lavictoire	20.0 (7.3-25.4)	Clear skies, light air	n/a	- Breeding Bird Survey
June 29, 2015	0800- 1215	S. St.Pierre	15.0-20.0 (12.2-22.9)	Overcast, no wind changing to overcast, light air	n/a	- Ecological Land Classification - Butternut Survey
July 8, 2015	1230- 1300	S. St.Pierre	22.0 (12.6-24.8)	50% cloud cover, light breeze to gentle breeze	n/a	- Fish Habitat Assessment

M. Lavictoire – Michelle (Nunas) Lavictoire – M.Sc. Natural Resources
 S. St. Pierre – Shaun St. Pierre – B. Sc. Biology and Fisheries and Wildlife Technologist
 B. Pierson - Brittney Pierson—Honours B. Sc. Biology and Environmental Science
 C. Fontaine - Cody Fontaine - Fisheries and Wildlife Technologist

*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available <http://climate.weatheroffice.gc.ca/> [July 10, 2015]

Figure 2 Study Area

2.2.1 Habitat Descriptions and Flora Observations

The field studies were completed by systematically travelling through the study area. Specific habitat types identified during the preliminary mapping exercise were also targeted for community description. Habitat descriptions were based on the appropriate methodologies such as: *Ontario Wetland Evaluation System, Southern Manual* (OWES) for wetland habitats and the *Ecological Land Classification for Southern Ontario* (ELC) 2nd approximation, *Natural Heritage Reference Manual* (NHRM) and *Significant Wildlife Habitat Technical Guide* (SWHTG) for terrestrial habitats.

Note that OWES took precedent over the ELC where an OWES wetland community was present. The OWES definition of wetland habitat is:

“Lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to the surface; in either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water tolerant plants”.

OWES defines the wetland boundary as the location where over 50% of the plant community consists of upland species with the woody vegetation layer (trees and shrubs) taking precedence over the herbaceous layer (OMNR 2002). Furthermore, the presence of large numbers of obligate upland species requires an upland classification. Unless they contain a special feature or function wetlands smaller than 0.5 ha were not delineated.

Note that no delineation of the wetland boundary was completed as part of this exercise.

Sufficient level of detail was collected in order to provide a general habitat description and identify the presence/absence of any of the natural environmental features (terrestrial, wetland or aquatic). The description of the habitats together with the results from the background review was utilized to identify potential species at risk which may occur in the area as well as to identify if any additional field work may be required.

Plants that could not be identified in the field were collected for a more detailed examination in the laboratory. Nomenclature used in this report follows the Southern Ontario Plant List (Bradley, 2007) for both common and scientific names which are based on Newmaster *et al.* (1998). Authorities for scientific names are given in Newmaster *et al.* (1998). Specific attention was paid to locating SAR or species of conservation value (any S1-S3 species) listed as potentially occurring within the study area. Any specimen observed was photographed and its coordinates were recorded on a hand held GPS using NAD83.

2.2.2 Butternut Inventory

A Butternut inventory was completed by a qualified Butternut Health Assessor (#281). This inventory consisted of searching the study area in and within 25 m of the road extension. Any individuals noted would be marked with white spray paint and flagging tape and numbered sequentially. Their UTM's, using a handheld GPS unit set at NAD83, would be recorded and the individual would be assessed according to the BHA protocol. Note that as documented below, no butternuts were found. A letter documenting this has been appended (Appendix C).

2.2.3 Breeding Bird Surveys

A search for raptor nests was completed by looking for evidence of nesting (such as stick nests, food caches, whitewashing of branches and foliage, accumulation of feathers/fur or prey remains on the ground or in shrubs as per the *Significant Wildlife Habitat Technical Guide* (SWHTG) Appendix O) as well as the raptors themselves. This search was completed prior to leaf-out on May 15, 2015.

Two types of breeding bird surveys were conducted: daytime breeding bird and night time SAR (whip-poor-will) visits. Note there was no grassland breeding bird habitat present (open areas are all manicured grass). While both surveys usually call for multiple visits only one of each was authorized by the client. The methods were as follows:

Daytime Survey

- To be completed between first week of June and first week in July;
- To begin no earlier than 30 minutes after dawn and completed by midday (for other habitats);
- Conducted on days with no rain, little to no wind and good visibility;
- Survey to include 5-min point counts spaced 300 m apart (or as near as 100 m if needed to obtain information from all habitat types)

Birds were identified by sound and/or sight. The visit was completed on June 20th, 2015.

Nighttime (Whip-poor-will) Survey

Ministry of Natural Resources and Forestry (MNRF) night-time whip-poor-will surveys protocol consists of:

- Three surveys to be completed a minimum of 1 week apart between late May and early July and during appropriate conditions [over 10°C, calm winds (less than 3 on the Beaufort Scale), 50% or more visible moon face illuminated & moon over the horizon]. If possible the three visits should take place during different lunar cycle windows.

- Survey points are typically established no further than 500 m apart within appropriate habitats.
- The survey consists of a 6-min listening period at each point. The surveyor will record the: number of whip-poor-wills, their behaviour (i.e. calling, perched, flushed), and approximate direction and distance.
- If a whip-poor-will is heard calling, then the surveyors will walk apart until a distance of 50-60 m is established between the two surveyors and the 6-min listening period will be repeated and the data recorded. This will help triangulate nests and/or defended area.
- Additional notes on any whip-poor-wills are also recorded in between points.

Note that for this project, the client only approved one of the three visits and as such one visit was completed during late May (May 27th, 2015). Due to the size of the woodland and land access only one survey point was established. This point was situated less than 500 m from the edge of the forest (Figure 3).

2.2.4 Bat Maternity Sites

There is the potential for bat species at risk to occur within the general area. During the habitat descriptions it was determined that there were no hibernacula sites were present. The potential for suitable bat maternity sites was evaluated during the leaf-off period by completing a cavity survey. Plots were established within which the number of cavity trees were recorded and described as per *MNR Candidate Bat Maternity Roost Data Forms*.

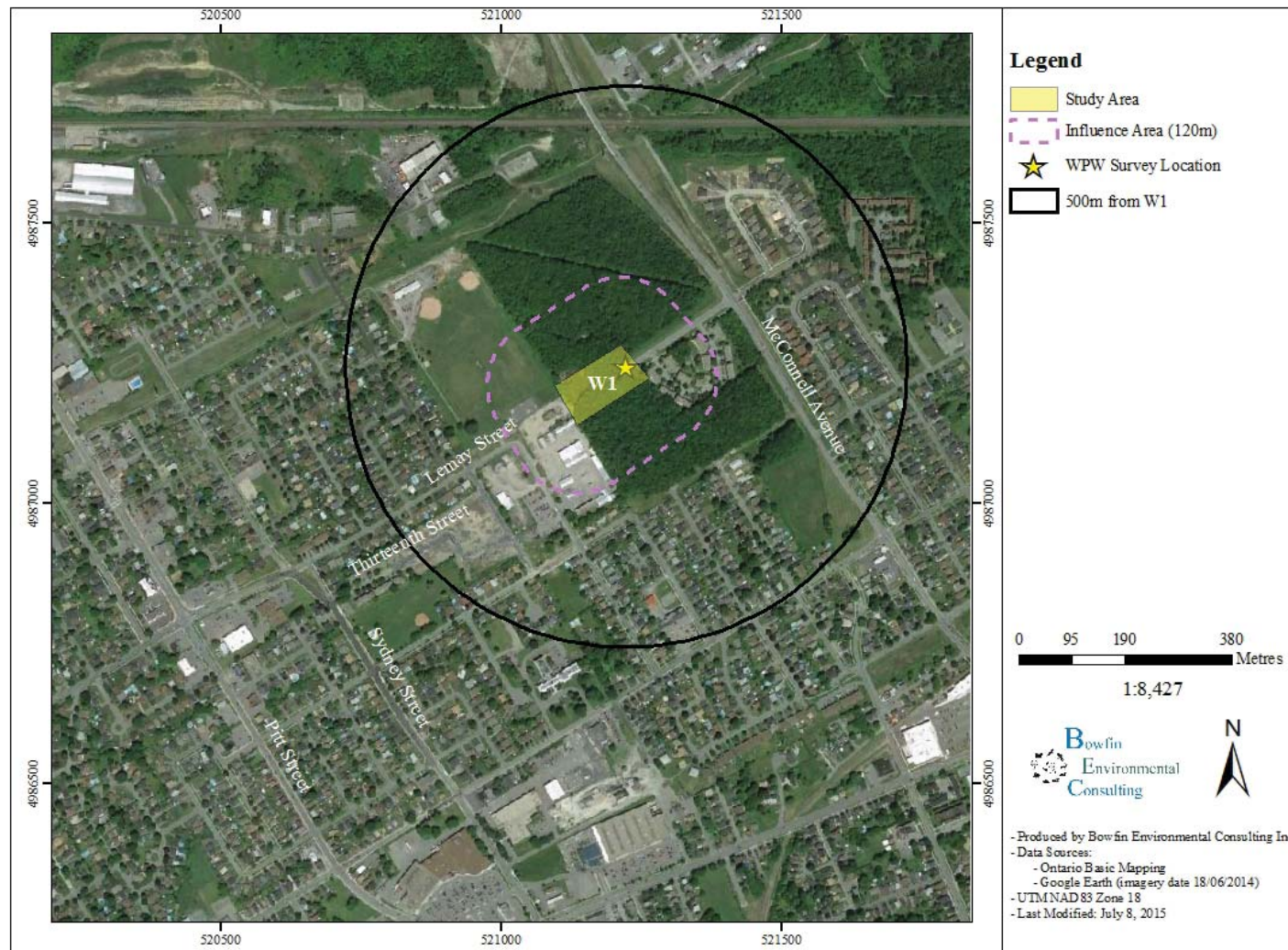
2.2.5 Incidental Fauna Observations

During all visits any wildlife observations were recorded. Incidental observations included observations of an individual, its tracks, burrows, feces and/or kill sights.

2.2.6 Aquatic Habitat Description

Notes on the locations of potential fish habitat were gathered during the initial visit on May 15th, 2015. The actual aquatic habitat investigations (aquatic habitat description) were undertaken on July 8th, 2015. No sampling was completed as the feature was dry during the visits.

Information on the channel morphology for the feature was collected based on the *Ontario Stream Assessment Protocol*, using evenly spaced transects upon which data was recorded from evenly spaced observation points. The data gathered included: channel width, wetted width, bankfull depth, water depth, substrate size, morphological units and in-stream cover.

Figure 3 Location of Whip-poor-Will Survey Point

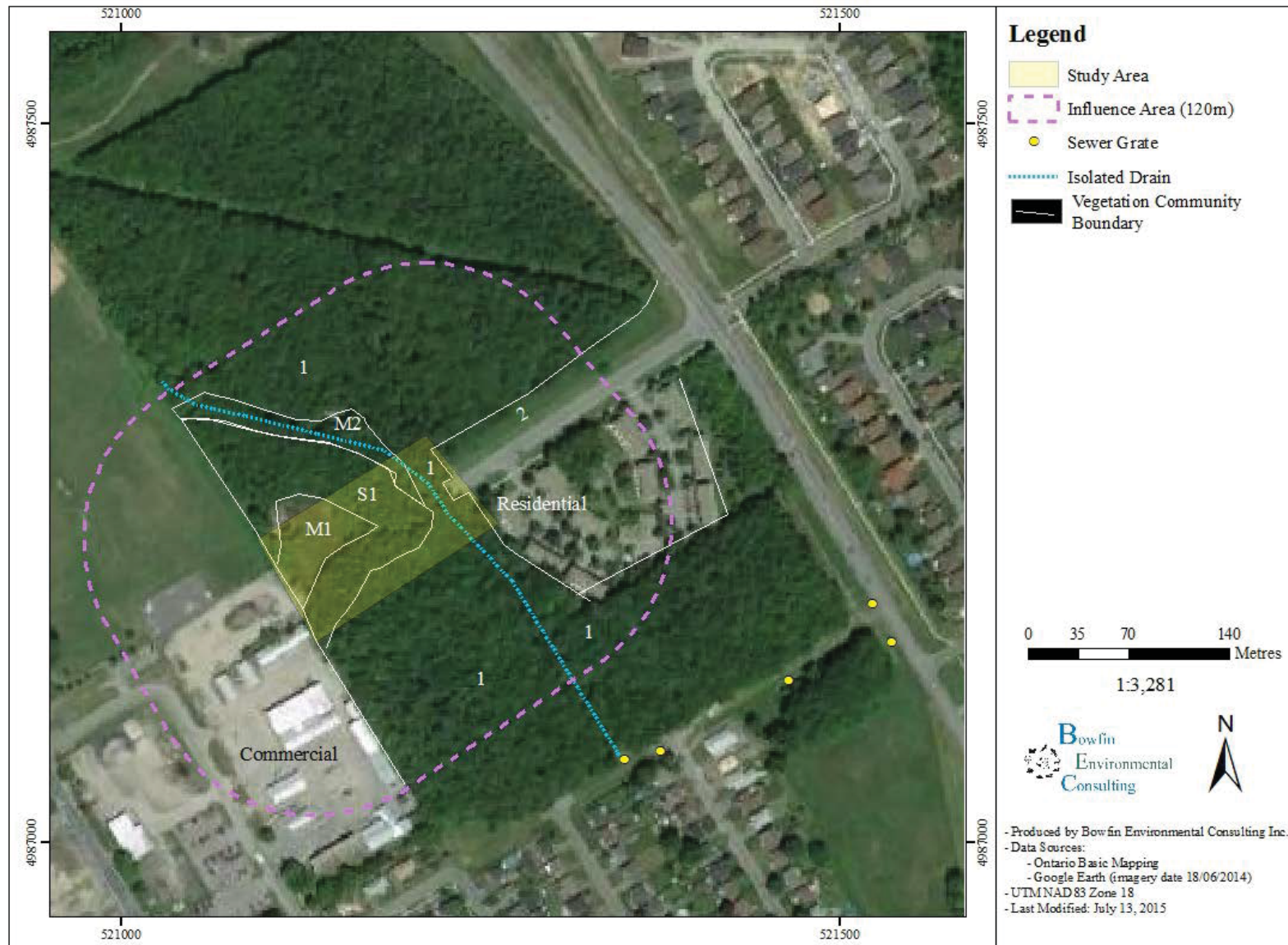
3.0 RESULTS

3.1 Terrestrial Setting

The road extension is situated between the Ontario Street Municipal Yard and 200 m west of McConnell Street in part of Lots 7-8, Concession 2 in the City of Cornwall. The proposed extension may result in direct impacts to the habitats along a length of 125 m and width of 20 m. These lands were primarily forested with some small wetland features.

Information provided directly from MNRF indicated that there were no known natural heritage features in or near the study area. The LIO database maps identified Lake View Marsh (a non-evaluated wetland) as being outside of the study area but within the influence area and significant woodlands as being both in and adjacent to the study area (Appendix A). That said the OP schedules do not identify these areas as being significant (Appendix A).

MNRF Kemptville also indicated the potential for three SAR (butternut, chimney swift and little brown bat) along with potential for one special concern species (snapping turtle) (Appendix B) to occur in the general area.

Figure 4 Classification of Vegetation Communities and Location of Natural Features within the Natural Heritage Study Area

3.1.1 Terrestrial and Wetland Habitats Summary

The following section provides a summary of the terrestrial and wetland habitats encountered in or within 120 m of the Lemay Street extension. The community boundaries are based on satellite image interpretation.

Upland Communities

Community 1 – This was the only upland forested habitat in and within 120 m of the study area. It was a Deciduous Forest with 100% tree cover consisting of deciduous trees with a few scattered white pines. The overall DBH was 20-25 cm. The canopy was 12-15 m tall and provided 50-90% canopy cover. The dominant species throughout was red maple (average diameter at breast height (DBH) 20-25 cm). Associates in this layer included: trembling aspen (average DBH 25 cm), American basswood (average DBH 20 cm), white ash (average DBH 25 cm), black cherry (average DBH 20 cm), shagbark hickory (average DBH 23 cm), and white pine (average DBH 62 cm). The sub-canopy was 8-10 m tall and provided 20-60% cover. Again the dominant species was red maple. Associates included: yellow birch, American beech, white ash, and shagbark hickory.

The understory varied from 0.25 m to 4 m tall and provided 5-30% cover. The dominant species were: sugar maple, alternate-leaved dogwood, American beech with some red maple. The ground layer was dense (60-70% cover) and mostly composed of false Solomon's seal along with poison-ivy, and round-leaved pyrola with northern lady fern and red trilliums in some parts.

The community was disturbed by access roads and small drainage feature.



Photo 1 Community 1 (June 29, 2015)



Photo 2 Right of Way Running through Community 1 (June 29, 2015)



Photo 3 Community 1 (June 29, 2015)



Photo 4 Right of Way Running through Community 1 (June 29, 2015)



Photo 5 Drainage feature in Community 1 (June 29, 2015)



Photo 6 Community 1 (June 29, 2015)

Community 2 - This community was found to the north of the east section of Lemay Street (Figure 4). This was an upland meadow with no canopy, sub-canopy, or understory. The ground layer provided 100% cover and was dominated by reed canary grass which was more common than wild parsnip and common sow-thistle. Portions of this community which were closer to Lemay Street were mowed.



Photo 7 Community 2 (June 29, 2015)

Wetland Communities

A portion of the proposed alignment and influence area consisted of a wetland (1.6 ha). The wetland included three vegetation communities: two marshes and one swamp.

Marsh 1 (M1) consisted of a marsh with a single vegetation form – robust-emergent. It was strongly dominated by common reed. This community was situated within the alignment.

Marsh 2 (M2) - The second marsh was to the northeast, outside of the alignment (Figure 4). There were two vegetation forms here: robust emergent and herbaceous plants. The dominant species were: common reed, spotted jewel-weed, false wood nettle and bittersweet nightshade. A small drain, with some standing water, ran through this community. The drain is discussed in Section 3.2.



Photo 8 Marsh 1 (Robust Emergent) (June 29, 2015)



Photo 9 Marsh 2 (June 29, 2015)

Swamp 1 (S1) - The deciduous swamp includes lands both along the alignment and in the influence area. The swamp was a two form community with deciduous trees and a herbaceous layer. The dominant species were: green ash, black ash, red maple, American elm, American basswood, sensitive fern, poison-ivy, northern lady fern and spotted jewel-weed. The species present varied.



Photo 10 Deciduous Swamp (June 29, 2015)

3.2 Aquatic Setting

A small drainage feature flowed from north to south near the east edge of the proposed alignment and enters the sewer system approximately 430 m downstream (Figure 4). The feature consisted of an entrenched, straightened and isolated drain.

The drainage feature had an average channel width of 3.2 m and bankfull depth of 28 cm. The substrate consisted of fines. There was occasional aquatic plant (common reed), and small woody debris in the channel. No signs of erosion were noted. The entire drain was dry or nearly so during all of the site visits.

The banks were completely vegetated with herbaceous species and moderately with woody vegetation. The dominant species were: spotted jewel-weed, common reed, poison-ivy, red maple, white ash, American basswood, wild red raspberry, Manitoba maple, and Alternate-leaved dogwood.



Photo 11 Looking upstream from the middle of the isolated drain (July 8, 2015)



Photo 12 Looking downstream from the upstream end of the isolated drain (July 8, 2015)

3.3 Wildlife Observations

A list of wildlife observations for the project area is located in Appendix B. The list includes 14 common bird species. All species that were observed are considered to be common species (S4 to S5 ranking signifying that they are apparently secure to secure in Ontario).

The night time breeding bird surveys did not find any evidence of whip-poor-will in or within hearing distance of the subject lands.

During the breeding bird survey the following individuals were heard calling or observed within the study area: red-eyed vireo, American crow, American robin, gray catbird (probable nest), cedar waxwing, yellow warbler, chestnut-sided warbler, American redstart (possible nest), common yellowthroat, chipping sparrow, song sparrow (possible nest), northern cardinal and American goldfinch.

The breeding bird survey results included all common species. No species at risk or special concern species were found.

No raptor or their nests were observed during the initial site visit.

Only one area-sensitive birds (>10ha) was found during the breeding bird survey: American redstart. This species is listed as area-sensitive in the SWHTG but it is a generalist able to utilize various types of habitats including edge habitats [deciduous or mixed woods with closed canopies of either tall shrubs or dense young trees or mature trees; woodland edges; upland or lowland; requires > 100ha of forest habitat (SWHTC)].

3.4. Plant Observations

A list of plant species that were recorded within the study area is provided in Appendix B. A total of 100 species were identified of which 69% were native and all were ranked at a value higher than S4¹. The number of native species can be considered indicative of average in terms of disturbances (sites with more than 70% native species are generally considered to be less disturbed). The Co-efficient of Conservatism (CC) of the species recorded provides information on the species' tolerance to disturbance; those species with a high CC (maximum of 10) are highly sensitive. The average CC for this site was 4.04 which would place it in the low side of the sensitivity. The majority of the species had a CC value of 6 or lower (90%). There were no species with a CC value of 8 or higher. All of the species found are common. No remnants of rare vegetation communities were encountered.

¹ SRanks is a method of classifying a species rarity within a jurisdiction. In Ontario those with a SRank of S1-S3 are considered extremely rare to uncommon and S4 – S5 are common to widespread.

4.0 DISCUSSION

4.1 Unevaluated Wetlands

There are no provincially or locally significant wetlands situated in or within 120 m of the subject lands. There were unevaluated wetland communities consisting of two marsh communities and one swamp. All were on the west side of the study area. The *Ontario Wetland Evaluation System* (OWES) states that unless a feature has unique form or function (i.e. rare vegetation community, provides habitat for a SAR etc) then wetlands that are less than 2.0 ha are not evaluated. As the wetlands on-site are less than 2.0 ha and do not contain any unique forms or functions they are considered insignificant. Furthermore, they did not provide fish habitat and were all impacted by existing trails. They also did not contain any open water (no overwintering habitat for turtles).

4.2 Fish and Fish Habitat Summary

The ditch located within the study area ran from north to south and flowed into a sewer grate and into the piped portion of Fly Creek. The ditch was ephemeral, isolated and did not provide any fish or turtle habitat.

4.3 Woodlands

The swamp and deciduous tree community form part of a woodland stand that is 14.6 ha in size (Figure 4). The PPS defines woodlands as:

“treed areas that provide environmental and economic benefits to both the private landowner and the general public such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels”

Woodlands are evaluated based on the NHRM (2010) created by MNRF. A desktop exercise was used in which MNRF mapping; satellite imaging and the Ontario Base Mapping (OBM) data were combined to locate the extent of the forest patch. The delineation of the woodland patches was based on the NHRM. The woodlands are evaluated in context of their size, ecological functions, uncommon characteristics and economic and social functional values. A woodland that meets the minimum standards for one or more criteria is considered significant in the PPS. Each of the criteria and how they relate to the forest stand located within the study area discussed below. Note that the amount of woodland coverage for the RRCA watershed is 36% (as reported in the *Natural Heritage Strategy for the Raisin Region Conservation Authority* August 2005).

Woodland Size

The forest patches is approximately 14.8 ha (Figure 4). The RRCA has a forest cover of approximately 36% and as such any forest stand that is ≥ 20 ha should be considered significant. This woodland is not significant in terms of size.

Ecological Functions Criteria

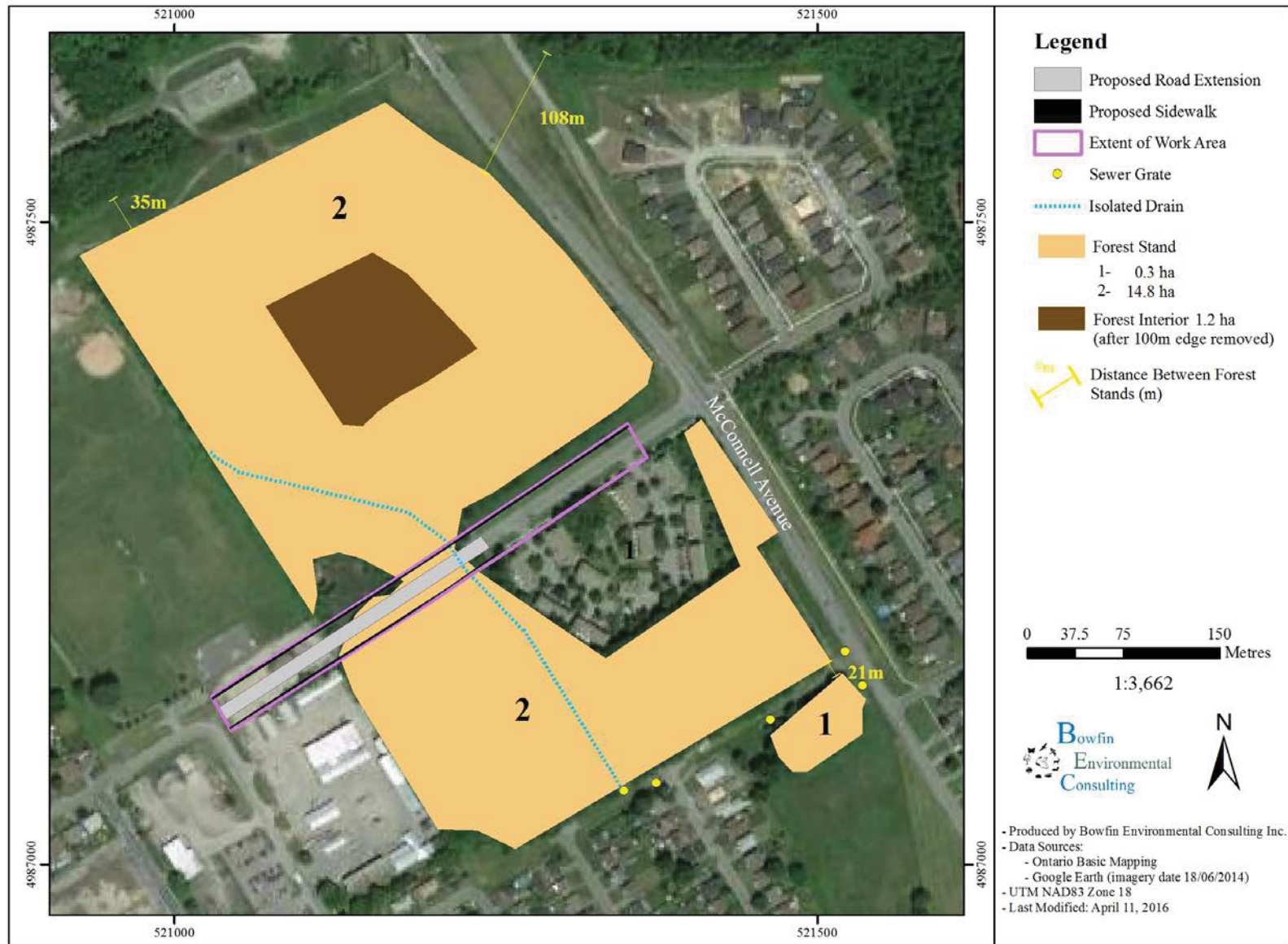
This criterion is based on five factors. The stand does not meet any of the criteria (Table 2).

Economic and Social Functions

The site is not known to have any economical or social value.

Table 2 Presence/Absence of Woodland Ecological Functions

Factor	Comments	Meets Minimum Requirements
Woodland interior (includes all forest located at least 100 m from the woodland's perimeter) Minimum size – 8 ha	The interior habitats within the forest stand would be 1.2 ha which does not meet the size requirement for interior forests (Figure 4).	No
Proximity to other woodlands or other significant natural heritage features	The forest stand is not located near (30m or less) from any other significant woodland stand (the nearest stand is on the other side of McConnell Avenue and is <9 ha in size).	No
Linkages	The forest stand is separated by more than 120m from any two significant habitats	No
Water protection	Forest stand is not located within a sensitive or threatened watershed or aquatic habitat.	No
Woodland diversity Minimum size – 20 ha	Contains naturally occurring sugar maple, but is less than 20 ha in size.	No

Figure 5 Woodland Stand Assessment

4.4 Endangered or Threatened Species and/or their Protected Habitats

Endangered and Threatened Species at Risk (SAR) are protected under provincial *Endangered Species Act*. On non-federal land, federal *Species at Risk Act* (SARA) applies to only fish species. Within this report the term SAR is used to refer to both provincially (all species) and federally (fish) protected species. The NHIC database provides information available to the public on those SAR documented as occurring within the general area. It should be noted that not all information for all species is available to the public. Furthermore, the absence of a recording does not necessarily indicate that the species is absent from the area. The purpose of the NHIC database is to serve as a guide to help determine the potential species which may occur within the project area. The potential SAR list used for this project included information from the NHIC database, data obtained directly from MNRF Kemptville and species added based on our experience. The resulting list was comprised of eleven species; 1 fish (cutlip minnow), 6 birds (eastern whip-poor-will, chimney swift, barn swallow, loggerhead shrike, bobolink and eastern meadowlark), 3 mammals (all bats) (little brown myotis, northern myotis, and eastern small-footed bat), and 1 plant (butternut) (Table 3). There was no fish habitat within or adjacent to the study area as such the one fish species, cutlip minnow, is not discussed.

Birds

The six birds species listed as potentially occurring are: eastern whip-poor-will, chimney swift, barn swallow, loggerhead shrike, bobolink and eastern meadowlark. One daytime and one nighttime visit was completed. While this is insufficient to meet MNRF protocols for SAR surveys they do provide an indication of which species are present. No SAR were identified

The whip-poor-will is a well camouflaged species can be found in a multitude of forest types. Its requirements consist of areas that are semi-open forests or sites with a closed forest intermixed with other open habitats. It also needs some areas with little ground cover. Its minimum habitat size requirement is 10 ha (COSEWIC 2009b). There is sufficient woodland within the subject lands and as such this species could occur.

The *General Habitat Description for Eastern Whip-poor-will* (MNRF on-line document) indicates that the protected habitat for this species includes three categories:

- | | |
|------------|--|
| Category 1 | known nests and 20 m of the nest |
| Category 2 | the area between 20 m and 170m from the nest or the approximate centre of the defended territory |
| Category 3 | the area of suitable habitat between 170 m and 500 m of the nest or approximate centre of the defended territory |

The forest stand meets the minimum requirements for this species. No whip-poor-wills were heard calling during the nighttime visit. Without additional surveys the presence/absence of this species or its general habitat cannot be confirmed.

Both chimney swifts and barn swallows require structures for nesting. No structures were present within the subject lands and none were observed during the field visits.

Loggerhead shrike is a small songbird who prefers pasturelands and shrubland and typically requires areas that are approximately 50 ha in size (Chabot 2007). The study area and surrounding landscape does not provide the appropriate habitat for this species. No loggerhead shrikes were observed within the project area. This species and its preferred habitat is considered absent.

The remaining two species are grassland breeding birds requiring areas of grassland with a minimum of 4.0 ha. The meadow habitat with the study area was too small and inappropriate (mowed) for these species. These species are considered absent from the study area.

Mammals

The potential mammals SAR within the general area were three bats: eastern small-footed myotis, little brown myotis and northern long-eared myotis. These species prefer to hibernate in caves or mines or buildings. No potential bat hibernacula were found within the study area.

The northern long-eared myotis prefers large portions of older forests. The maternity sites tend to be in snags in the mid stage of decay. This species tends to prefer larger expanses of older forests (late successional or primary forests) with intact interior habitat and is shown to be negatively correlated with edge habitat (Menzel et al 2002, Broders et al. 2006, Yates et al. 2006, *SWH Ecoregion 6E Criterion Schedule*).

The *Significant Wildlife Habitat Criteria Schedules Draft 6E* indicated that consideration for maternity sites should be made when the vegetation community consists of a mature deciduous or mixed forest with >10 large trees/ha (>25 cm DBH). MRNF guidelines for bat maternity sites require a minimum of >10 snags (with a minimum DBH of 25 cm) / ha. A cavity search was completed during the early spring of 2015 using the MNRF plot technique. During this visit only one tree with a DBH of 25 cm or larger with cavities was found. As such, the stand (within the study area) did not meet the minimum of >10 trees/ ha. It is further noted that this site has little interior forest habitat (± 1 ha after the 100 m edge is removed) and would not be likely to provide maternity habitat for the northern long-eared myotis. For these reasons, the site does not meet the minimum requirements for bats.

Plants

A survey for Butternuts was completed by BHA 281 and none were found. This species is absent from the study area.

SAR Conclusion:

Of the potential SAR only one species was considered as potentially occurring; eastern whip-poor-will. In order to confirm its absence, three nighttime surveys during the appropriate time of year as per MNRF protocols would be required. These will be further discussed in Section 5.0.

Table 3 Summary of the Potential SAR and their Habitat Requirements

Common Name	Scientific Name	Preferred Habitat	SRank	Provincial Status	Federal Status	Reference	Last Observed
FISH							
Cutlip Minnow	<i>Exoglossum maxillingua</i>	Requires areas with rocky substrate, free of silt and with clear water.	S1S2	THR		Scott & Crossman 1998	19/07/1989
BIRDS							
Whip-poor-will	<i>Caprimulgus vociferus</i>	Rock or sand barrens with scattered trees, savannahs, old burns or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations	S4B	THR	THR	COSEWIC 2009a	
Chimney Swift	<i>Chaetura pelagica</i>	Cities, towns, villages, rural, and wooded areas.	S4B, S4N	THR	THR	COSEWIC 2007b	
Barn Swallow	<i>Hirundo rustica</i>	Open or semi-open lands: farms, field, marshes.	S4B	THR	No Status	Peterson 1980	
Loggerhead Shrike migrans subspecies	<i>Lanius ludovicianus migrans</i>	Pastures, marginal farmland and wetlands.	S2B	END	END	Environment Canada 2010	
Bobolink	<i>Dolichonyx oryzivorus</i>	Primarily in forage crops, and grassland habitat.	S4B	THR	No Status	COSEWIC 2010	
Eastern Meadowlark	<i>Sturnella magna</i>	Fields, meadows and prairies.	S4B	THR	No Status	Peterson 1980	

Common Name	Scientific Name	Preferred Habitat	SRank	Provincial Status	Federal Status	Reference	Last Observed
Mammals							
Little Brown Myotis (bat)	<i>Myotis lucifugus</i>	buildings, attics, roof crevices and loose bark on trees or under bridges. Always roosts near waterbodies.	S4	END	END	Eder 2002	
Northern myotis (bat)	<i>Myotis septentrionalis</i>	Older (late successional or primary forests) with large interior habitat.	S3	END	END	Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule	
Eastern Small-footed Bat	<i>Myotis leibii</i>	Found within deciduous or coniferous forests in hilly areas.	S2S3	END		Eder 2002	
PLANTS							
Butternut	<i>Juglans cinerea</i>	Variety of sites, grows best on well-drained fertile soils in shallow valleys and on gradual slopes	S3?	END	END	COSEWIC 2003	

Status Updated: April 2016

SRANK DEFINITIONS

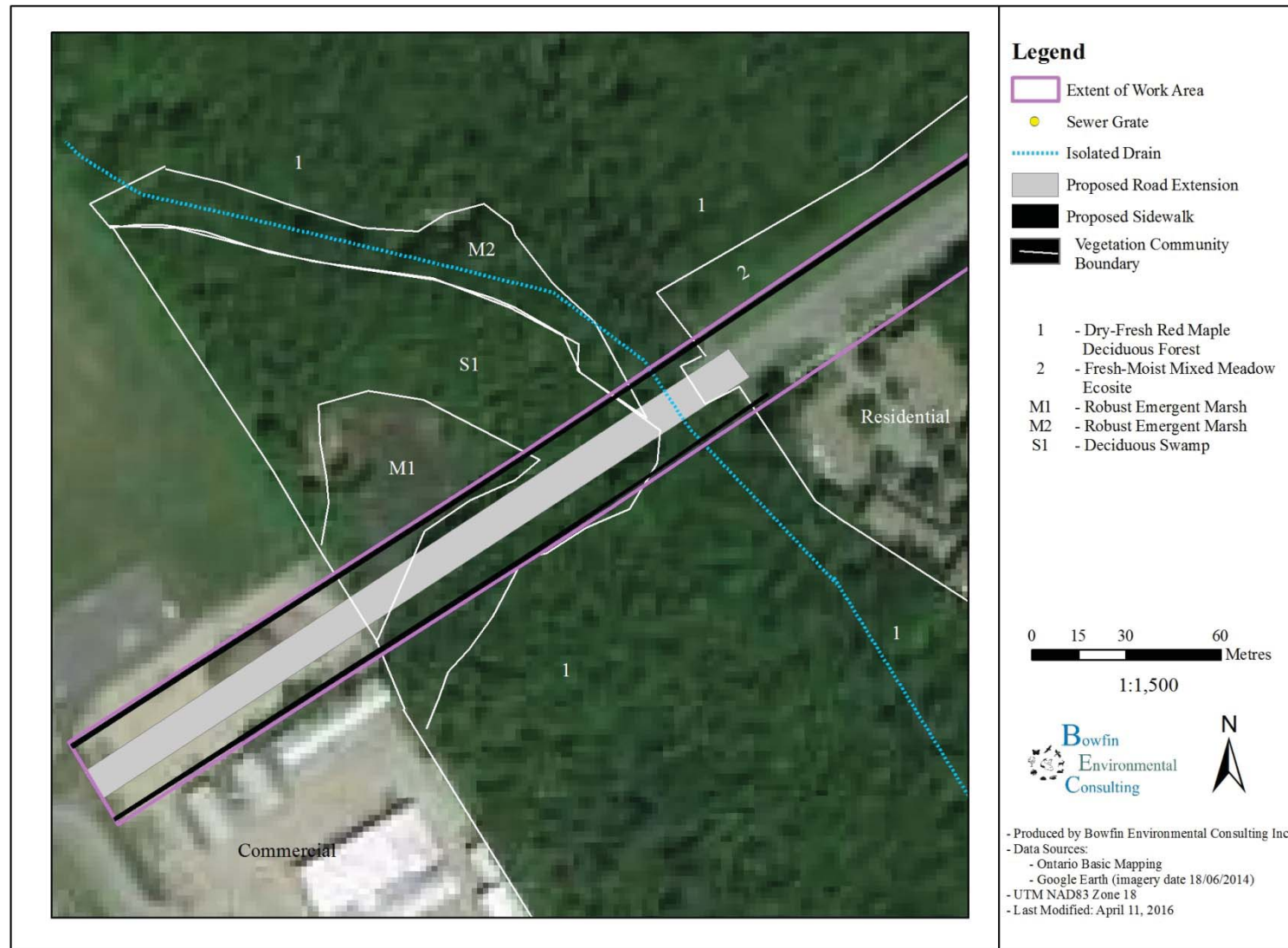
- S1** Critically Imperiled, Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
- S2** Imperiled, Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
- S3** Vulnerable, Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4** Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- ?** Inexact Numeric Rank—Denotes inexact numeric rank
- S#B** Breeding
- S#N** Non-Breeding

SARO STATUS DEFINITIONS

- THR** Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SARA STATUS DEFINITIONS

- END** Endangered, a wildlife species facing imminent extirpation or extinction.
- THR** Threatened, a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

Figure 6 Footprint of Road Extension in Relation to Vegetation Communities

5.0 Impact Analysis

5.1 Project Description

The City of Cornwall is proposing to extend Lemay Street from Ontario Street to 200 m west of McConnell Avenue. The total length of the extension would be 240 m of which approximately 125 m would travel through a natural environment. The remainder would run through developed lands (Optimist Park and Ontario Street Municipal Works Yard). This Environmental Impact Statement (EIS) reviewed the potential to impact the natural habitats.

The extension would require the removal of the vegetation within an already disturbed area. Associated work activities include:

1. Clearing of vegetation (meadow habitat);
2. Excavation and grading;
3. Installation of culverts, as needed;
4. Backfilling; and
5. Paving of new surface.

The period of construction is estimated to be 22 weeks and is anticipated to occur during the 2017 construction season at the earliest, although construction is dependent on the availability of financial resources.

The significance of the potential impacts stemming from this project can be measured using four different criteria:

1. Area affected may be:
 - a. local in extent signifying that the impacts will be localized within the project area
 - b. regional, signifying that the impacts may extend beyond the immediate project area.
2. Nature of Impact:
 - a. negative or positive
 - b. direct or indirect
3. Duration of the impact may be rated as:
 - a. short term (construction period, 1 years)
 - b. medium term (3-4 years)
 - c. long term (>4 years).

- d. permanent
- 4. Magnitude of the impact may be:
 - a. negligible signifying that the impact is not noticeable
 - b. minor signifying that the project's impacts are perceivable and require mitigation
 - c. moderate signifying that the project's impacts are perceivable and require mitigation as well as monitoring and/or compensation
 - d. major signifying that the project's impacts would destroy the environmental component within the project area.

5.2 Potential Impacts during Construction Phase

Construction related impacts to the natural environment may occur as a result of various activities including: clearing of vegetation, de-watering, excavation, contouring and backfilling. The potential impacts associated with these activities are:

- 1. Decrease in surface water quality
 - a. Introduction of suspended sediments as a result of construction activities (i.e. removal of vegetation, clearing, grading, backfilled) along the ditches.
- 2. Terrestrial Habitat and Species
 - a. Disruption to wildlife and bird populations as a result of the increase in noise and light pollution during construction;
 - b. Disruption and loss of vegetation communities;
 - c. Potential impacts to whip-poor-will habitat, a SAR (presence/absence of habitat has not been confirmed);
- 3. Accidents or malfunctions
 - a. Spills from project machines during construction activities; and
 - b. Spread of invasive species.

Several of these potential impacts may be reduced or eliminated through the use of mitigation measures. These mitigation measures are described below.

Surface Water Quality

Summary and Potential Impact Analysis

Water quality may be impacted during the clearing of vegetation, excavation of new road side ditches and roadway, backfilling and contouring. Prior to mitigation, the impacts associated with

a potential decrease in surface water quality would be local, short term in duration and negligible in magnitude.

Note: the only surface water features present within the study area were the ditch and the roadside ditches. All flow into the piped section of Fly Creek and do not provide any direct habitat for fish.

Note that potential impacts as a result of accidental release of sediments are dealt with under the accident/malfunction section.

Mitigation Measures

General

- The following plans will be developed prior to any construction activities:
 - Revegetation/Landscaping plan
 - Sediment and erosion control plan
- There will be no use of herbicides in clearing of vegetation.
- Any laydown yards will be confined to already disturbed areas (in the urban area, outside of the study area of this EIS).
- Any stock piles of soil or fill material will be stored as far from any ditches or drains as possible and protected by silt fencing.
- **No** work will occur until the appropriate sediment and erosion control measures have been properly implemented. These will be designed to prevent the movement of suspended sediments outside of the work area. They could include the following items and steps:
 - Properly installed sediment fencing along the edge of the work area to contain any particles which may enter the ditches.
 - Monitoring of sedimentation outside of the sediment fencing will occur throughout the day. The contractor will be responsible to ensure that the measures chosen are appropriate for the site and are functioning as intended.
 - Should dust particles be created during construction they will be suppressed using the appropriate method (i.e. water spraying).
- Removal of vegetation will be minimized and will be completed using small machinery.
- Machinery working in the temporary work area will be clean of mud and free of leaks.
- Additional materials (*i.e.* rip-rap, filter cloth and silt fencing) should be readily available in case they are needed promptly for erosion and/or sediment control.
- The sediment fencing will not be removed until the terrestrial vegetation has become re-established.

Net Impact Analysis

Following the proper implementation of the mitigation measures, including monitoring, it is anticipated that the potential impacts to the surface water quality would be local, negative, short term in duration and negligible in magnitude.

Terrestrial Habitat and Species (including SAR and Species of Conservation Concern)

Summary and Potential Impact Analysis

For the purposes of this assessment, the loss of vegetation considers the loss of any woody or wetland habitats. The loss of manicured grass is not considered significant ecologically other than the potential to cause erosion concerns and these are dealt with in the section above.

The habitat that will be impacted consisted of wetland and forest communities. The assessment of these found that they did not provide any significant form or function. A review of the potential SAR and their habitat found that eleven species could occur. Of these, a full survey was conducted for butternuts (a tree) and none were found. The potential for all but one of the wildlife species was eliminated based on a lack of suitable habitat. The one remaining species is the whip-poor-will. There is sufficient habitat for this species. There are no records of its presence at this location (and it is a vocal species) however as the MNRF protocol for documenting the absence / presence was not followed it cannot be ruled out. Since woody vegetation will be removed there is a potential to directly impact this species' habitat, if it is present.

Indirectly, the woody vegetation not intended to be removed could be harmed by construction equipment. The soil around the base of the trees could become compacted (affecting the roots) or branches could be harmed.

Prior to mitigation, the impacts associated with the terrestrial vegetation would be local, direct and indirect, negative, long-term to permanent and minor unless whip-poor-will is present in which case the magnitude would be moderate.

Mitigation Measures

The following mitigation measures as well as those listed for surface water quality, should be adhered to in order to minimize impacts to terrestrial habitat, flora and wildlife:

- **No trees will be removed until whip-poor-will surveys are completed.** If whip-poor-wills are confirmed to be on-site or within 500 m of the area of impact (temporary or permanent impact) then MNRF will be contacted and the appropriate permitting will be obtained.
- Minimize the removal of natural vegetation and clearly delineated areas to be removed on the construction drawings.
- Snow fencing will be installed outside of the drip line of any trees not intended for removal to prevent soil compression, root damage and to minimize damages to branches.
 - No grading or activities that may cause soil compaction (such as heavy machinery and stockpiling of materials) will be allowed within the fenced area.
 - Furthermore, no machinery maintenance or refueling or stockpiling is permitted within 5 m of the outer edge of this fencing.
 - Clearing of vegetation within the drip line of trees will be completed by hand.
 - Exhaust fumes from all equipment will be directed away from the canopy of the trees to be retained.
 - If roots of trees to be retained become exposed during site alterations, they will be buried immediately with soil or covered with filter cloth or woodchips and kept moist until the roots can be buried permanently.
 - Any roots that must be cut will be cut cleanly to allow for healing.
- Branches of trees that overhang the work area will be pruned back to prevent unintentional harm.
- No grubbing of stumps will occur within the drip line of trees not intended for removal.
- Small equipment will be utilized in order to prevent harming woody vegetation not intended for removal.
- If possible, remove vegetation during the winter months to avoid impact to soil.
- Cleared vegetation or chips will be removed and not stored on-site.
- Herbicides and fertilizers will not be applied.
- In order to ensure that no impacts to SAR birds or any other bird (as birds are also protected by the *Migratory Bird Convention Act*) - no clearing of vegetation will occur during the breeding bird season from April 15th to August 15th inclusive.
- When possible work should be completed during daylight. If nighttime lights are used they will be installed so as to illuminate the work area only to minimize impacts to nighttime activities of wildlife.
- Vehicles and equipment should have the appropriate mufflers installed.

Net Impact

Being situated in an urban area, the impacted area is not considered to be highly sensitive. Following the completion of whip-poor-will surveys and provided that these confirm the absence of this species and with the proper implementation of the mitigation measures and the application

best practises during construction, the impacts to terrestrial habitat and species are considered to be local, short term to permanent and negligible.

Should whip-poor-wills or their generalized habitat be documented in the area, then permitting will be required from MNRF prior to any work. Note that permitting typically requires a minimum of 6 months to obtain.

Accidents and malfunctions

Although the likelihood of accidents and malfunctions occurring would be minimized by following the mitigation measures outlined below, should accidents and/or malfunctions occur they have the possibility of presenting serious impacts and require consideration.

Mitigation Measures

- All equipment working in or near the water will be well maintained, clean and free of leaks.
- Maintenance on construction equipment such as refueling, oil changes or lubrication will only be permitted in designated area located at a minimum of 30 m from the ditches and outside of the drip line of trees to be retained and in an area where sediment erosion control measures and all precautions have been made to prevent oil, grease, antifreeze or other materials from inadvertently entering the ground or the surface water flow.
- If machinery was recently used in another waterbody, then the equipment will be thoroughly cleaned to prevent the potential spread of invasive species.
- Emergency spill kits will be located on site.
- The contractor crew will be fully trained on the use of clean-up materials in order to minimize impacts of any accidental spills.
- The area will be monitored for leakage and in the unlikely event of a minor spillage the contractor would halt the activity and corrective measures would be implemented. Any spills will be immediately reported to the MOECC Spills Action Centre (1800 268-6060).

6.0 CONCLUSION

The City of Cornwall is proposing to extend Lemay Street from Ontario Street to 200 m west of McConnell Avenue. The total length of the extension would be 240 m of which approximately 125 m would travel through a natural environment. The remainder would run through developed lands (Optimist Park and Ontario Street Municipal Works Yard). This Environmental Impact Statement (EIS) reviewed the potential to impact the natural habitats.

Based on the background review the known potential constraints identified were:

- Unevaluated wetland
- Significant woodland.
- Endangered or Threatened Species Habitat
- Fish habitat of the unnamed ditch

Of these the field investigations concluded that the wetland and woodland communities did not provide significant functions. The unnamed drain flowed into a piped portion of the Fly Creek system and did not provide fish habitat. The *Fisheries Act* would not be triggered by this project.

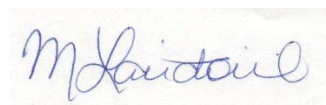
The evaluation of potential SAR or their habitat identified potential whip-poor-will habitat. The potential for this species to occur is considered low as this is a vocal species and there are no occurrences documented. However given that only one survey was completed their absence cannot be confirmed.

Should surveys be completed as per the MNRF protocol and confirm their absence, then the potential impacts are low and can be mitigated through the use of typical best management practices identified herein.

I trust that this report will meet your requirements. Should you have any questions or comments, please contact the undersigned.

Sincerely,

Bowfin Environmental Consulting Inc.



Michelle Lavictoire,
Biologist / Principal

7.0 References

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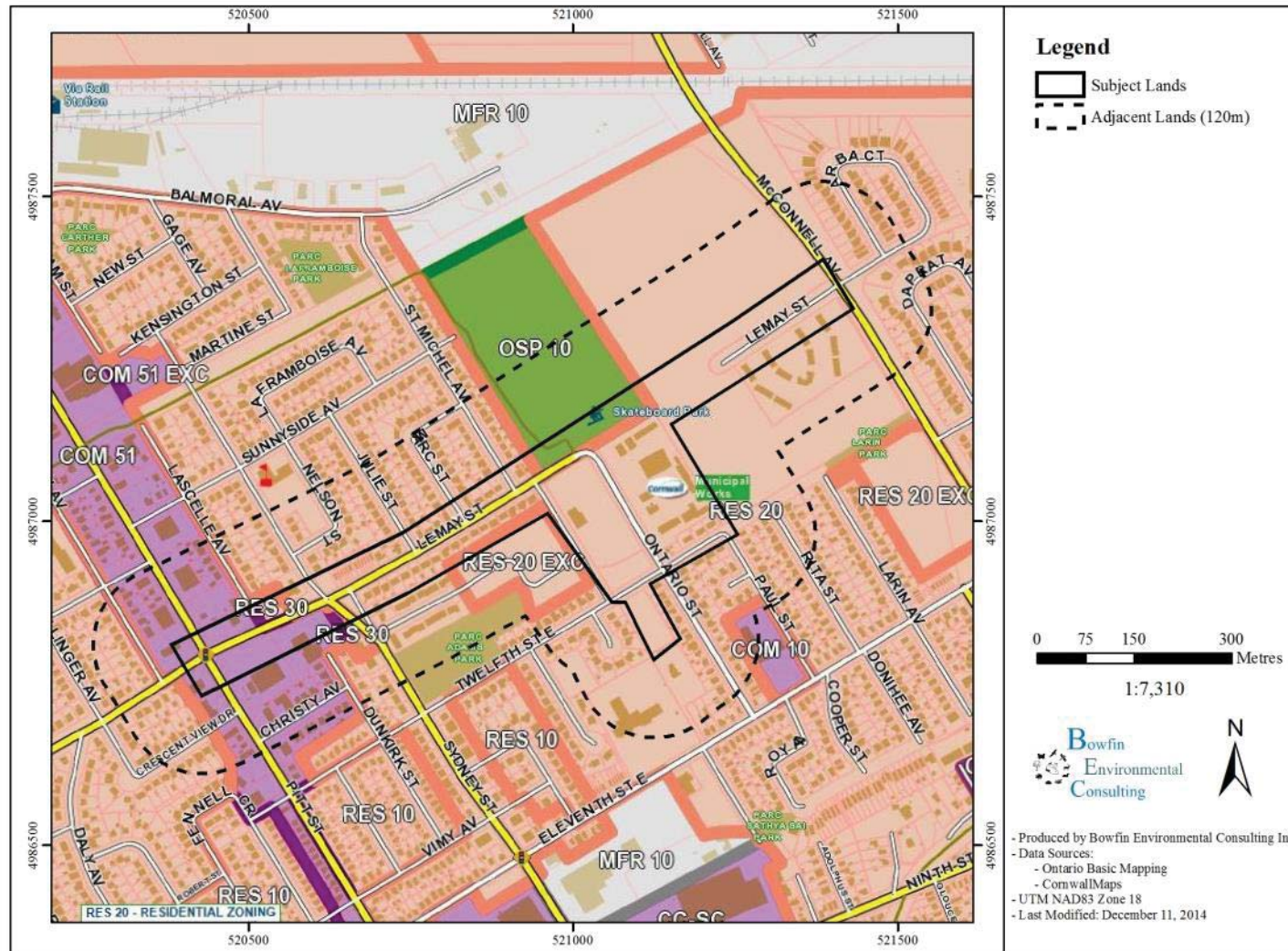
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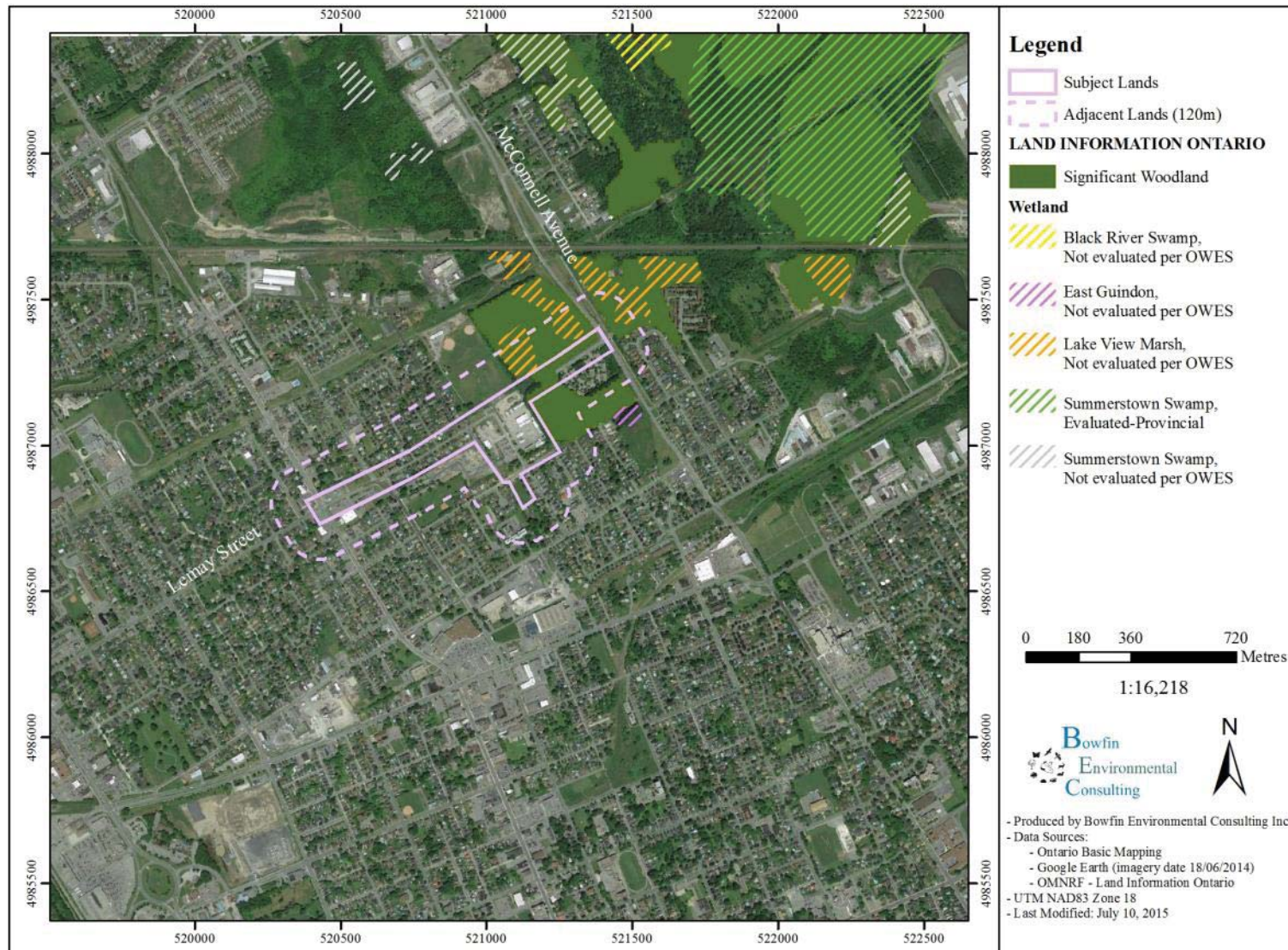
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Appendix A – Background Mapping and Communications









Appendix B – List of All Observed Species

Common Name	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)
BIRDS				
Ring-billed Gull	<i>Larus delawarensis</i>	S5B, S4N		
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B		
American Crow	<i>Corvus brachyrhynchos</i>	S5B		
American Robin	<i>Turdus migratorius</i>	S5B		
Gray Catbird	<i>Dumetella carolinensis</i>	S4B		
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B		
Yellow Warbler	<i>Dendroica petechia</i>	S5B		
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	S5B		
American Redstart	<i>Setophaga ruticilla</i>	S5B		
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B		
Chipping Sparrow	<i>Spizella passerina</i>	S5B		
Song Sparrow	<i>Melospiza melodia</i>	S5B		
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5		
American Goldfinch	<i>Carduelis tristis</i>	S5B		

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Northern Lady Fern	<i>Athyrium filix-femina</i> <i>var. angustum</i>	S5			4	- FODM6-5 - Deciduous Swamp
Sensitive Fern	<i>Onoclea sensibilis</i>	S5			4	- FODM6-5 - Deciduous Swamp
Christmas Fern	<i>Polystichum</i> <i>acrostichoides</i>	S5			5	- FODM6-5
Cinnamon Fern	<i>Osmunda cinnamomea</i>	S5			7	- FODM6-5 - Deciduous Swamp
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S5			7	- FODM6-5 - Deciduous Swamp
White Pine	<i>Pinus strobus</i>	S5			4	- FODM6-5 - Deciduous Swamp
Manitoba Maple	<i>Acer negundo</i>	S5			0	- Deciduous Swamp
Red Maple	<i>Acer rubrum</i>	S5			4	- FODM6-5 - Deciduous Swamp
Sugar Maple	<i>Acer saccharum</i>	S5			4	- FODM6-5
Freeman's Maple	<i>Acer X freemanii</i>	SNR				- FODM6-5
Western Poison-ivy	<i>Rhus radicans</i> ssp. <i>rydbergii</i>	S5			0	- FODM6-5 - Deciduous Swamp
Staghorn Sumac	<i>Rhus typhina</i>	S5			1	- FODM6-5
Wild Carrot	<i>Daucus carota</i>	SNA				- MEMM4
Wild Parsnip	<i>Pastinaca sativa</i>	SNA				- MEMM4
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	S5			4	- FODM6-5 - Deciduous Swamp
Burdock sp.	<i>Arctium</i> sp.					- MEMM4
New England Aster	<i>Aster novae-angliae</i>	S5			2	- MEMM4

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Bidens sp.	<i>Bidens sp.</i>					- Deciduous Swamp
Chicory	<i>Cichorium intybus</i>	SNA				- MEMM4
Canada Thistle	<i>Cirsium arvense</i>	SNA				- MEMM4
Daisy Fleabane	<i>Erigeron annuus</i>	S5			0	- MEMM4
Philadelphia Fleabane	<i>Erigeron philadelphicus ssp. philadelphicus</i>	S5			1	- MEMM4
Common Boneset	<i>Eupatorium perfoliatum</i>	S5			2	- Robust Emergent Marsh
White Snakeroot	<i>Eupatorium rugosum</i>	S5			5	- FODM6-5
Spotted Joe-pye-weed	<i>Eupatorium maculatum ssp. maculatum</i>	S5			3	- Robust Emergent Marsh
White Lettuce	<i>Prenanthes alba</i>	S5			6	- FODM6-5
Canada Goldenrod	<i>Solidago canadensis</i>	S5			1	- MEMM4
Common Sow-thistle	<i>Sonchus oleraceus</i>	SNA				- MEMM4
Common Dandelion	<i>Taraxacum officinale</i>	SNA				- MEMM4
Meadow Goat's-beard	<i>Tragopogon pratensis ssp. pratensis</i>	SNA				- MEMM4
Spotted Jewel-weed	<i>Impatiens capensis</i>	S5			4	- FODM6-5 - Deciduous Swamp - Robust Emergent Marsh
Blue Cohosh	<i>Caulophyllum thalictroides</i>	S5			6	- FODM6-5
May-apple	<i>Podophyllum peltatum</i>	S5			5	- FODM6-5

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Yellow Birch	<i>Betula alleghaniensis</i>	S5			6	- FODM6-5
Gray Birch	<i>Betula populifolia</i>	S5			5	- FODM6-5
Ironwood	<i>Ostrya virginiana</i>	S5			4	- FODM6-5
Viper's Bugloss	<i>Echium vulgare</i>	SNA				- MEMM4
Tartarian Honeysuckle	<i>Lonicera tatarica</i>	SNA				- FODM6-5
Common Elderberry	<i>Sambucus canadensis</i>	S5			5	- FODM6-5
Northern Wild Raisin	<i>Viburnum cassinoides</i>	S5			7	- FODM6-5
Nannyberry	<i>Viburnum lentago</i>	S5			4	- FODM6-5
Field Bindweed	<i>Convolvulus arvensis</i>	SNA				- Robust Emergent Marsh
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	S5			6	- FODM6-5
Hog Peanut	<i>Amphicarpaea bracteata</i>	S5			4	- FODM6-5
Bird's-foot Trefoil	<i>Lotus corniculatus</i>	SNA				- MEMM4
Black Medick	<i>Medicago lupulina</i>	SNA				- MEMM4
Red Clover	<i>Trifolium pratense</i>	SNA				- MEMM4
White Clover	<i>Trifolium repens</i>	SNA				- MEMM4
Cow Vetch	<i>Vicia cracca</i>	SNA				- MEMM4
American Beech	<i>Fagus grandifolia</i>	S4			6	- FODM6-5
Bur Oak	<i>Quercus macrocarpa</i>	S5			5	- FODM6-5 - Deciduous Swamp
Red Oak	<i>Quercus rubra</i>	S5			6	- FODM6-5
Wild Black Currant	<i>Ribes americanum</i>	S5			4	- FODM6-5
Common St. John's-wort	<i>Hypericum perforatum</i>	SNA				- MEMM4
Shagbark Hickory	<i>Carya ovata</i>	S5			6	- FODM6-5

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Purple Loosestrife	<i>Lythrum salicaria</i>	SNA				- Robust Emergent Marsh - Deciduous Swamp
White Ash	<i>Fraxinus americana</i>	S5			4	- FODM6-5
Black Ash	<i>Fraxinus nigra</i>	S5			7	- Deciduous Swamp
Green Ash	<i>Fraxinus pennsylvanica</i>	S5			3	- Deciduous Swamp
Canada Enchanter's Nightshade	<i>Circaea lutetiana ssp. canadensis</i>	S5			3	- FODM6-5 - Deciduous Swamp
Upright Yellow Wood-sorrel	<i>Oxalis stricta</i>	S5			0	- MEMM4
Common Plantain	<i>Plantago major</i>	SNA				- MEMM4
Curly Dock	<i>Rumex crispus</i>	SNA				- MEMM4
Round-leaved Pyrola	<i>Pyrola americana</i>	S4?			7	- FODM6-5
Shinleaf	<i>Pyrola elliptica</i>	S5			5	- FODM6-5
White Baneberry	<i>Actaea pachypoda</i>	S5			6	- FODM6-5
Red Baneberry	<i>Actaea rubra</i>	S5			5	- FODM6-5 - Deciduous Swamp
Marsh Marigold	<i>Caltha palustris</i>	S5			5	- Robust Emergent Marsh
Common Buckthorn	<i>Rhamnus cathartica</i>	SNA				- Deciduous Swamp
Serviceberry sp.	<i>Amelanchier sp.</i>					- FODM6-5
Black Cherry	<i>Prunus serotina</i>	S5			3	- FODM6-5
Common Blackberry	<i>Rubus allegheniensis</i>	S5			2	- FODM6-5
Dwarf Raspberry	<i>Rubus pubescens</i>	S5			4	- FODM6-5 - Deciduous Swamp

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Trembling Aspen	<i>Populus tremuloides</i>	S5				- FODM6-5
Bittersweet Nightshade	<i>Solanum dulcamara</i>	SNA				- Robust Emergent Marsh
American Basswood	<i>Tilia americana</i>	S5			4	- FODM6-5 - Deciduous Swamp
American Elm	<i>Ulmus americana</i>	S5			3	- Deciduous Swamp
False Nettle	<i>Boehmeria cylindrica</i>	S5			4	- FODM6-5 - Robust Emergent Marsh
Wood Nettle	<i>Laportea canadensis</i>	S5			6	- FODM6-5
European Stinging Nettle	<i>Urtica dioica ssp. dioica</i>	SNA				- MEMM4
Violet sp.	<i>Viola sp.</i>					- MEMM4
Virginia Creeper	<i>Parthenocissus inserta</i>	S5			3	- Robust Emergent Marsh - Deciduous Swamp
Riverbank Grape	<i>Vitis riparia</i>	S5			0	- MEMM4
Common Water-plantain	<i>Alisma trivale</i>	S5			3	- Robust Emergent Marsh
Jack-in-the-pulpit	<i>Arisaema triphyllum ssp. triphyllum</i>	S5			5	- FODM6-5
Lakebank Sedge	<i>Carex lacustris</i>	S5			5	- Robust Emergent Marsh
Awl-fruited Sedge	<i>Carex stipata</i>	S5			3	- Robust Emergent Marsh
Greenish Sedge	<i>Carex viridula</i>	S5			5	- FODM6-5
Bluebead Lily	<i>Clintonia borealis</i>	S5			7	- FODM6-5

	Scientific Name	SRank	Provincial Status (SARO)	Federal Status (SARA)	Coefficient of Conservatism	ELC Community
PLANTS						
Wild Lily-of-the-valley	<i>Maianthemum canadense</i>	S5			5	- FODM6-5
False Solomon's Seal	<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>	S5			4	- FODM6-5
Red Trillium	<i>Trillium erectum</i>	S5			6	- FODM6-5
White Trillium	<i>Trillium grandiflorum</i>	S5			5	- FODM6-5
Grass Family	<i>Poaceae</i>					- MEMM4
Oats sp.	<i>Avena</i> sp.					- MEMM4
Reed Canary Grass	<i>Phalaris arundinacea</i>	S5			0	- MEMM4
Timothy	<i>Phleum pratense</i>	SNA				- MEMM4
Common Reed	<i>Phragmites australis</i>	S5			0	- MEMM4 - Robust Emergent Marsh - Deciduous Swamp
Narrow-leaved Cattail	<i>Typha angustifolia</i>	SNA			3	- Robust Emergent Marsh

Status Updated: July 7, 2015

SRANK DEFINITIONS

- S4** Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure, Common, widespread, and abundant in the nation or state/province.
SNR Unranked, Nation or state/province conservation status not yet assessed.
SNA Not Applicable, A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
? Inexact Numeric Rank—Denotes inexact numeric rank
S#B Breeding
S#N Non-Breeding

Coefficient of conservatism ranking criteria

- 0 Obligate to ruderal areas.
 1 Occurs more frequently in ruderal areas than natural areas.

- 2 Facultative to ruderal and natural areas.
- 3 Occurs less frequent in ruderal areas than natural areas.
- 4 Occurs much more frequently in natural areas than ruderal areas.
- 5 Obligate to natural areas (quality of area is low).
- 6 Weak affinity to high-quality natural areas.
- 7 Moderate affinity to high-quality natural areas.
- 8 High affinity to high-quality natural areas.
- 9 Very high affinity to high-quality natural areas.
- 10 Obligate to high-quality natural areas.

Appendix C Communications from MNRF



Ministry of Natural Resources

Kemptville District
P.O. Box 2002
10 Campus Drive
Kemptville, ONK0G 1J0

Tel.: (613) 258-8204
Fax.: (613) 258-3920

Ministère des Richesses naturelles

District de Kemptville
CP 2002
10 Campus Drive
Kemptville, ONK0G 1J0

Tél.: (613) 258-8204
Télec.: (613) 258-3920

Thu. Mar 12, 2015

Michelle Lavictoire
Bowfin Environmental Consulting
168 Montreal Rd.
Cornwall, Ontario
K6H 1B3
(613) 935-6139
m.lavictoire@bowfinenvironmental.ca

Attention: Michelle Lavictoire

Subject: Information Request - Developments
Project Name: Lemay Road Expansion
Site Address: Lemay St. from Pitt to McConnell
Our File No. 2015_COR-2989

Natural Heritage Values

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

The MNR works closely with partner agencies and local municipalities in order to establish concurrent approval process and to achieve streamlined and efficient service delivery. The MNR strongly encourages all proponents to contact partner agencies (e.g. MOE, Conservation Authority, etc.) and appropriate municipalities early on in the planning process. This provides the proponent with early knowledge regarding agency requirements and approval timelines.

There are no known Natural Heritage Features (e.g. Provincially Significant Wetlands, Areas of Natural and Scientific Interest, etc.) identified on or in close proximity to the site.

Municipal Official Plans contain additional information related to natural heritage features. Please see the local municipal Official Plan for more information such as specific policies and direction pertaining to activities which may impact natural heritage features. For planning advice or Official Plan interpretation, please contact the local municipality.

Where natural values and natural hazards exist (e.g., floodplains), there may be additional approvals and permitting required from the local Conservation Authority. The MNR strongly recommends contacting the local Conservation Authority for further information and approvals. Please see the MNR Kemptville Information Guide (2012) for contact information pertaining to Conservation Authorities located within the Kemptville District area.

For additional information and online mapping tools, please see the Natural Heritage Information Centre (NHIC), where additional data and files can be downloaded in both list and digital format. In addition sensitive species information can be requested and accessed through the NHIC at NHICrequests@ontario.ca.

In Addition, the following Fish species were identified: bluntnose minnow, brook stickleback, brown bullhead, Iowa darter, *Notropis* sp., white sucker.

As per the Natural Heritage Reference Manual (Section 13; OMNR 2010) the MNR strongly recommends that an Ecological Site Assessment be carried out to more thoroughly determine the presence of natural heritage features, and Species at Risk and their habitat located on site. The MNR can provide survey methodology for particular species at risk and their habitats. In addition, the local planning authority may have more details pertaining to the requirements of the assessment process, which will allow for the municipality to make planning decisions which are consistent with the Provincial Policy Statement (2005).

Species at Risk

With the new Endangered Species Act (ESA, 2007) in effect, it is important to understand which species and habitats exist in the area and the implications of the legislation. A review of the Natural Heritage Information Centre (NHIC) and internal records and aerial photograph interpretation indicate that there is a potential for the following Threatened (THR) and/or Endangered (END) species on the site or in proximity to it:

- Butternut (END)
- Chimney Swift (THR)
- Little Brown Bat (END)

All Endangered and Threatened species receive individual protection under section 9 of the ESA and receive general habitat protection under Section 10 of the ESA, 2007. Thus any potential works should consider disturbance of possible important habitat (e.g. nesting sites). Please note that as of June 30, 2013 general habitat protection applies to all Threatened and Endangered species. The habitat of these listed species is protected from damage and destruction and certain activities may require authorization(s) under the ESA. Please keep this date in mind when planning any species and habitat surveys

Species receiving General Habitat protection:

- Butternut (END)
- Chimney Swift (THR)
- Little Brown Bat (END)

If the proposed activity is known to have an impact on the species mentioned above or any other SAR, an authorization under the Endangered Species Act, 2007 (ESA) may be required. It is recommended that MNR Kemptville be contacted prior to any activities being carried out to discuss potential survey and mitigation measures to avoid contravention of the ESA.

Habitat has been identified within the project area that appears suitable for one or more species listed by SARO as Special Concern (SC). In Addition, one or more Special Concern species has been documented to occur either on the site or nearby. Species listed as Special Concern are not protected under the ESA, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act. Species of Special Concern for consideration:

- Snapping Turtle (SC)

If any of these or any other species at risk are discovered throughout the course of the work, and/or should any species at risk or their habitat be potentially impacted by on site activities, MNR should be contacted immediately and operations be modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by MNR.

Please note that information regarding species at risk is based on documented occurrences only and does not include an interpretation of potential habitat within or in proximity to the site in question. Although this data represents the MNR's best current available information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. i.e.: Species at Risk (SAR) or their habitat could still be present at the location or in the immediate area. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed; or their habitat is not damaged or destroyed through the activities carried out on the site. The MNR continues to strongly encourage ecological site assessments to determine the potential for SAR habitat and occurrences. When a SAR or potential habitat for a SAR does occur on a site, it is recommended that the proponent contact the MNR for technical advice and to discuss what activities can occur without contravention of the Act. If an activity is

proposed that will contravene the ESA (such as Section 9 or 10), the proponent must contact the MNR to discuss the potential for a permit (Section 17). For specific questions regarding the Endangered Species Act (2007) or SAR, please contact a district Species at Risk Biologist at sar.kemptville@ontario.ca. For more information regarding the ESA (2007), please see attached ESA Information Sheet.

As of July 1, 2013, the approvals processes for a number of activities that have the potential to impact SAR or their habitat were changed in an effort to streamline approvals processes while continuing to protect and sustainably manage Ontario's natural resources. For those activities that require registration with the Ministry, businesses and individuals will be able to do so through a new online system. The online system will also include information to help guide individuals and businesses through the new processes. For further information on which activities are authorized through this new online registration process and how to apply, please refer to the following website: http://www.mnr.gov.on.ca/en/About/2ColumnSubPage/STDPROD_104342.html. General inquiries may be directed towards Kemptville District MNR, while questions and comments involving the new online forms can be directed to the Registry Approvals Service Centre (RASC) at 1-855-613-4256 or mnr.rasc@ontario.ca.

Please note: The advice in this letter may become invalid if:

- The Committee on the Status of Species at Risk in Ontario (COSSARO) re-assesses the status of the above-named species OR adds a species to the SARO List such that the section 9 and/or 10 protection provisions apply to those species.
- Additional occurrences of species are discovered.
- Habitat protection comes into force for one of the above-mentioned species through the creation of a habitat regulation (see general habitat protection above).

This letter is valid until: Fri. Mar 11, 2016

MNR is streamlining and automating its approvals processes for natural resource-related activities. Some activities that may otherwise contravene the ESA may be eligible to proceed without a permit from MNR provided that regulatory conditions are met for the ongoing protection of species at risk and their habitats. There are regulatory provisions for projects that have attained a specified level of approval prior to, or shortly after, the specified species or its habitat became protected under the ESA. Their requirements include registering the activity with the Ministry of Natural Resources, taking steps to immediately minimize adverse effects on species and habitat, and developing a mitigation plan. Anyone intending to use this regulatory provision is strongly advised to review Ontario Regulation 242/08 under the Endangered Species Act, 2007 for the full legal requirements.

For more information please check out the following link <http://www.ontario.ca/environment-and-energy/development-and-infrastructure-projects-and-endangered-or-threatened-species>

The MNR would like to advise, by way of this letter, that we continue to be circulated on information with regards to this project. If you have any questions or require clarification please do not hesitate to contact me.

Sincerely, Erin

Seabert

Resource Management Tech erin.seabert@ontario.ca

Encl.\

-ESA Infosheet

-NHIC/LIO Infosheet

Shaun St.Pierre (BHA# 0281)
Bowfin Environmental Consulting
168 Montreal Road
Cornwall, ON
K6H 1B3

July 7, 2015

RE: Part of Lot 7-9, Concession 2, City of Cornwall

Date of Butternut Survey: June 29, 2015

Butternut is listed as an endangered species on the Species at Risk in Ontario List, and as such, it is protected under the *Endangered Species Act* (ESA) from being killed, harmed, or removed. As a designated Butternut Health Assessor (BHA), I completed a search of the above property for Butternuts. The area searched is shown on Figure 1. As none were found, there is no further action required with respect to the butternuts under the ESA. That said please note the following:

- It is possible that a butternut was missed, especially in densely forested areas. If this is so then the tree(s) is still protected under ESA and it will need to be assessed prior to conducting any activities which may harm or kill the individual. Please contact a BHA prior to working within 25 m of any butternut.
- This inventory is only valid for the next 2-3 years after which time a new inventory would need to be completed to ensure that no new individuals have grown and to assess the current health of the butternuts.
- The purpose of this survey was to satisfy ESA requirements with respect to butternuts, it does not satisfy requirements of any other legislation or municipal by-laws that may be in place with respect to the removal or harming of trees.

Please retain this letter for your records. If you have any questions, please do not hesitate to contact me via email at s.stpierre@bowfinenvironmental.ca.

Sincerely,

Shaun St.Pierre (BHA # 281)



Appendix D

Municipal Class Environmental Assessment Improvement and Extension of Lemay Street – Corporation of the City of Cornwall

- Phase 1 Environmental Site Assessment

Phase 1 Environmental Site Assessment



**Phase I
Environmental Site Assessment
Proposed Lemay Street Extension and
Municipal Work Yard Reconfiguration
Cornwall, Ontario**

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EXECUTIVE SUMMARY

AECOM Canada Ltd. has retained LRL Associates Ltd. (LRL) to complete a Phase I Environmental Site Assessment (ESA) on the property located at 1225 and 1246 Ontario Street in Cornwall, Ontario as well as the adjacent vacant parcel of land south of 1246 Ontario Street following Twelfth Street East, the parcel of land north of 1225 Ontario Street and the parks building and associated property located at the north-central portion of 301 Sunnyside Avenue (herein referred to as the Site). The majority of the Site (1225 and 1246 Ontario Street) is developed with a municipal yard, storage and office space while the remainder of the Site is vacant or treed. 301 Sunnyside Avenue is developed with a storage building and office space. This assessment was conducted in the context of a proposed land development and site alteration.

The Site is set within a residential and recreational area. The St-Lawrence River is located approximately 2.6 km southeast of the Site. The topography of the Site and surrounding area is sloping gently towards the south with elevations between 58 and 62 m above mean sea level (amsl). The majority of the Site is generally flat with the exception to a notable slope from the northern portion of the Municipal yard extending west along Lemay Street and Ontario Street. The slope declines to the south at the municipal yard and along Ontario Street. Lemay Street slopes west near the west extent of the Site. It is suspected that the raised portion of the Site may be an extension of the waste mound to the north at Optimist Park, the former landfill site.

The Site (all parcels combined) is irregular with an approximate 58,560 m² (14.4 Acres) currently developed with a total of twelve (12) buildings ranging between 15 and 1220 m² in surface area. The southwestern and the northeastern portions of the Site are vacant and treed, respectively. A former mobile home was located at the southern portion of 1246 Ontario Street until approximately 10 years ago when the City of Cornwall took ownership of this Parcel of land and the structure was removed. The northern portion of the municipal yard is used to temporarily store snow and soil from snow removal and road work activities. City owned Hydro-vac vehicles deposit their contents in a pit located at the eastern portion of the area.

The currently 4.5 acre parcel of land immediately north of 1225 Ontario Street is currently used as a recreational field. According to the Anderson Waste Disposal Site Inventory, a landfill was active at this location since at least 1960. Several groundwater quality investigation reports prepared by TRG were provided to LRL for review by Aecom Canada as part of this Phase I ESA as well as part of other subsequent investigations. It was decided that the most recent groundwater quality report provided be reviewed as part of this assessment (2008). Optimist Park, immediately north public works municipal yard, was developed over a former landfill site in the mid 1980 s. The former landfill site that occupied this parcel of land was operated by the City of Cornwall from the 1940 s to the late 1950 s. TRG concludes that the groundwater quality of the Site does have exceedances to the Table 3 provincial guidelines, however the exceedances are described as minor . The leachate plume from the former landfill is found to impact the silty sand aquifer and appears to migrate south, southwesterly and southeast at a rate of approximately 1.4 m/yr. The former landfill site presents a high environmental risk for potential environmental concern.

Asbestos (Re-) Assessment reports for various City of Cornwall Public Works buildings were provided by the City of Cornwall for review. The buildings assessed included the Administration Building, Barricade Shed, Carpenter Shop, City Stores, Equipment Storage Shed, Garage, Roads Shop, Salt/Sand Shed #1, Salt/Sand Shed #2, Tire Shed, Traffic Shop and

Waterworks/Sewer Shed. Asbestos containing materials were identified at select locations on the Site.

Correspondence with the TSSA revealed that on January 4, 1990, three (3) active 25,000 L single walled steel underground petroleum storage tank were inspected on the Site. The tanks were installed in 1987 and diesel (one) and gasoline (two). The risks for environmental concerns associated with these installations are high. Three (3) records of TSSA Historic Incidents were retrieved within 300 m of the Site. The risk for environmental concerns associated with these incidents is low due to its location down and trans-gradient of the Site or due to their compositional attributes.

Between 1988 and 1990, 1992 and 2004 the Site was registered as a generator of Paint/Pigment/Coating Residues, Inorganic Laboratory Chemicals, Petroleum Distillates, Light Fuels, Halogenated Pesticides, Waste Oils and Lubricants, Organic Laboratory Chemicals and Waste Compressed Gases. In 2009 through 2013, the Site was registered as a generator of Aliphatic Solvents and Waste Oils and Lubricants. Between 1998 and 2008 the Site was listed as a generator of Oil Skimming and Sludges, Aliphatic Solvents and Waste Oils and Lubricants. As of April 2014, the Site has been registered as a generator of Aliphatic Solvents and Residues and Waste Crankcase Oils and Lubricants. The wastes generated at the Site from between the late 1980s and April 2014, present a moderate to high environmental risk of potential environmental concern. It is assumed that these wastes, are associated with the repair garage activities.

A 900 L underground waste oil tank is located along the north face of the repair garage. Waste oil generated on Site is disposed of into the tank which is then removed by a licenced contractor for offsite disposal. A 15000 L capacity aboveground container is located at the northern portion of the Site between the two (2) salt/sand storage sheds. It is used to store de-icing brine (MgCl). Within the repair garage, along the north face of the building, four (4) plastic containers are present used to store automotive transmission fluid, *Preston*, Hydraulic oil and motor oil used during the associated activities. The waste oil UST and other storage container present a moderate to high environmental risk of potential environmental concern. Hydraulically operated devices that can contain hydraulic oils (i.e. piston type elevators, vehicle hoist and compactors) were observed. In-ground, stationary hoists are present in the repair garage which presents a moderate to high environmental risk of potential environmental concern.

Several other containers, pails and drums are present across the Site used to store various chemicals associated with the City's Public Works activities. They are all in generally good contention with no evidence of punctures or corrosion. Some evidence of spills of oils was observed in the repair garage in proximity to select storage containers.

Records of six (6) spills within 300 m of the Site were retrieved, one of which occurred on the Site, 1225 Ontario Street. The records retrieved present low environmental risk generally due to their distance from the Site. The spill that occurred at 1225 Ontario Street was found to present a low environmental risk as the spill was to a municipal service and is likely contained rather to the natural environment.

Maps were reviewed by LRL to obtain the regional geology and information on the surficial soil and bedrock. The surficial geology of the Site consists of Clay. Silty clay and silt. The bedrock geology is found to be the St Martin Formation which consists of Limestone, minor shale and dolomite. The presence of significant amounts of fill material (beyond that required for normal construction and/or grading) was generally not observed across the Site with the exception to the northern portion of the 1225 Ontario Street. The northern portion of the Municipal Yard is elevated in comparison to the remainder of the surround land which continues west along

Lemay Street. Similar topography is noted to the north at the former landfill site. It is suspected that this is a result of buried waste encompassing this area. The inferred groundwater flow direction of the Site is south following the general topography towards the St Lawrence River.

A potentially contaminating activity is a use or activity set out in Table 2 of Schedule D of the O. Reg. 153/04.

The activities on the site and lands within 250 m generally consist of vacant, residential and commercial (retail, fitness center and office space).

Based on the results of the Phase I Environmental Site Assessment the following areas of potential environmental concern were identified:

Potential Environmental Concern	Location	Comments	Contaminants of Potential Concern	Media Potentially Impacted
1225 Ontario Street				
Fuel dispensing equipment/ installations	Along the west perimeter of the property, approximately midway north-south	Consists of three (3) UST containing gasoline and diesel and an associated pump island. Installed in 1987.	VOC, PHC	Soil and groundwater
Waste Oil UST	Along north face of repair garage	900 L capacity.	VOC, PHC	Soil and groundwater
Stationary in-ground hoists	In repair garage	One (1) observed at the time of the Site visit	VOC, PHC	Soil and groundwater
General repair garage activities and waste generated	Approximately center of the property	Minor surface staining observed across the garage	VOC, PHC, Metals, SVOC	Soil and groundwater
MgCl storage	Northern portion of property, between salt storage sheds	15000 L capacity, used for road de-icing	Metals	Soil
Snow and Soil disposal	Northern portion of property	Temporary storage and disposal yard for snow, soil and hydro-Vac activities	Metals, PHC, VOC	Soil and groundwater
1246 Ontario Street				
Former Mobile Home	Southern portion of property	Potential for former oil heating tank and buried waste from removal	VOC, PHC, Metals	Soil and groundwater
Neighbouring Properties within 250 m of the Site				
Former Landfill Site	Immediately north of Lemay Street	Potentially encroached onto 1225 Ontario Street and across Lemay Street based on topographic observations and information provided by the client	Metals, VOC, General Inorganics	Soil and groundwater

Based on the findings of the Phase I ESA, it was recommended that a Phase II ESA be conducted on the site to confirm the impacts of the potential environmental concerns identified.

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FIGURES

(In order following text)

Figure 1 Site location.

Figure 2 Zoning within 250 m of the Site.

Figure 3.1 Site plan and potential environmental concerns on the site and within 250 m of the Site.

Figure 3.2 Site plan and potential environmental concerns on the site and within 250 m of the Site.

APPENDICES

(In order following Figures)

Appendix A	Chain of Title
Appendix B	Ecolog Eris Report
Appendix C	Aerial Photographs
Appendix D	Topographic Maps
Appendix E	Site Visit Photographs

1 INTRODUCTION

AECOM Canada Ltd. has retained LRL Associates Ltd. (LRL) to complete a Phase I Environmental Site Assessment (ESA) on the property located at 1225 and 1246 Ontario Street in Cornwall, Ontario as well as the adjacent vacant parcel of land south of 1246 Ontario Street following Twelfth Street East, the parcel of land north of 1225 Ontario Street and the parks building and associated property located at the north-central portion of 301 Sunnyside Avenue (herein referred to as the Site). The location of the Site is presented in **Figure 1**. The majority of the Site (1225 and 1246 Ontario Street) is developed with a municipal yard, storage and office space while the remainder of the site is vacant or treed. 301 Sunnyside Avenue is developed with a storage building and office space. This assessment was conducted in the context of a proposed land development and site alteration.

The Phase I ESA identifies the existing environmental conditions and potential environmental liabilities associated with the subject property, focusing on the possible presence of contamination on the property. It includes a review of available information (historical data and aerial photographs) and a visual site inspection to assess potential contamination of past or present activities conducted on the property itself and on adjacent properties.

Potential contamination represents the uncontrolled release of foreign substances within the natural environment. Such an event can result in air, soil and groundwater contamination that may represent environmental liabilities towards the site and perhaps towards adjacent properties. The ESA evaluates in a consistent manner, within the time constraints imposed for this report, whether such events have occurred at this site. This level of work is a method of risk reduction and does not eliminate risk for the client.

1.1 Property Information

Address:	1225 and 1246 Ontario Street; Concession 2 part lot 8 Reference Plan 52r6444; part 2, Part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8; and South Part of Concession 2 part lot 8d 1753.91, Cornwall, Ontario; and 301 Sunnyside Avenue.
Frontage:	<i>1225 and 1246 Ontario Street:</i> Ontario Street <i>Concession 2 part lot 8 Reference Plan 52r6444; part 2:</i> Twelfth Street East <i>South part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8, and South Part of Concession 2 part lot 8d 1753.91:</i> Not Applicable <i>301 Sunnyside Avenue:</i> Sunnyside Avenue

Zoning:	1225 and 1246 Ontario Street: Residential (RES 20) Concession 2 part lot 8 Reference Plan 52r6444; part 2: Residential (RES 20) South part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8: Residential (RES 20) Part of Concession 2 part lot 8d 1753.91: OSP 10 (Open Space Commercial) 301 Sunnyside Avenue: OSP 10 (Open Space Commercial) The various zoning of the properties within 250 m of the Site is shown in Figure 2.
Legal description:	Plan 113 lot 12 & Concession 2 Part east ½ lot 8, reference plan 52r6444, Concession 2 Part lot 8d 1753.91 and part, Concession 2 part lot 7 reference plan 52r4061 parts 1 to 6 and 8.
Dimensions:	Irregular: Between approximately 45 and 520 m wide (east-west) by between 30 and 320 m deep. The portion of 301 Sunnyside Avenue included in this assessment is approximately
Area:	58,560 m ² (14.4 Acres)

The Site's location is shown in **Figure 1** and the general site configuration is shown on the Site Plan in **Figure 3.1 and 3.2**. For the purposes of this report, Ontario Street will be inferred as running in a north-south direction.

1.2 Site Occupancy

Current owner:	The Municipal Corporation of the Town of Cornwall
Owner since:	1944
Current use:	The majority of the Site is used as The City of Cornwall municipal yard and office space. The parcel of land to the southwest is vacant and the area of the proposed Lemay Street Extension is generally treed.
Current use since:	At least the mid 1950 s

2 SCOPE OF INVESTIGATION

LRL conducted this work in accordance to the standard Phase I ESA procedures, which generally reflect the requirements of:

- Canadian Standards Association (CSA) Phase I Environmental Site Assessment, Z768-01 (2001); and
- O. Reg. 153/04 as amended.

The scope of work for the Phase I ESA consisted of the following:

- Reviewing reasonably ascertainable records regarding the occupancy of the site and surrounding properties (i.e. business directories, fire insurance plans and aerial photographs);
- Interviewing current and previous owners and/or tenants and local and provincial authorities;

- Conducting a site visit that consists of a walk-through visual assessment of the site and adjacent properties (from publicly accessible areas); and
- Evaluation of the information collected.

This report will present the results of the ESA carried out between April 13 and June 3, 2015.

3 RECORDS REVIEW

3.1 General

3.1.1 Phase I Study Area Determination

Study area:	250 m
Rational for extending study area beyond the minimum 250 m	
Select searches were carried out within a 300 m of the Site for a more detailed assessment of the area of concern.	

3.1.2 First Developed Use Determination

First developed use is defined by O. Reg. 153/04 section 22(1) as the first property use after 1875 that resulted in a building or structure or the first potentially contaminating activity, whichever is earlier.

First developed use:	Municipal yard, garages and office space
Year	Mid 1940 s.
Basis for determination of first developed use	
Interview and Aerial Photographs.	

3.1.3 Fire Insurance Plans

Fire Insurance Plans (FIP) mapped streets and buildings of urban Canada in great detail and illustrate building construction, occupancy and potential fire hazards. They also provide detailed information regarding storage tanks, transformers, boilers and electrical rooms. The original plans were produced between 1875 and 1923 and continued to be produced and updated until production ceased in 1974. No Fire Insurance Plans were found for the Site.

3.1.4 Property Underwriters Report

Property Underwriters Site Plans and Reports provide detailed information on a site-specific basis and include descriptions of building construction, heating sources, production processes, and the presence of chemicals or materials which may be stored on site. They also indicate the presence of environmental hazards such as electrical rooms, transformers, boilers, and storage tanks. No Property Underwriters Reports were found for the Site.

3.2 Chain of Title

Land Titles contain legal title information concerning property ownership, transfer details, and any encumbrances such as mortgages or easements. Each time a new transaction occurs, property records are updated as soon as the instrument is registered. A copy of the Chain of Title is included in **Appendix A**.

Records search provider:	Service Ontario Land Registry Office
Date of search:	April 2, 2014
Pertinent Information:	The search covered the parcel of land identified as 1225 Ontario Street. The searched covered the period from 1944 to present. The site was transferred to The Municipal Corporation of the Town of Cornwall in 1944. An easement was transferred to Trans-Northern Pipe Line Company in 1952.

3.3 Environmental Reports

Reports:	Optimist Park 2008 Groundwater Quality Investigation Report
Date:	April 2009
Author:	The Thompson Rosemount Group Inc.
Prepared for:	The City of Cornwall
Description of data, analysis and findings relevant to the Phase I ESA: Several groundwater quality investigation reports were provided to LRL for review by Aecom Canada as part of this Phase I ESA as well as part of other subsequent investigations. It was decided that the most recent groundwater quality report provided be reviewed as part of this assessment (2008). Optimist Park, immediately north public works municipal yard, was developed over a former landfill site in the mid 1980 s. The former landfill site that occupied this parcel of land was operated by the City of Cornwall from the 1940 s to the late 1950 s. As of 2002, The Thompson Rosemount Group Inc. (TRG) have actively evaluated the potential for environmental impacts of the former site activities to the groundwater, soil and surface water in association with the Ontario Ministry of the Environment regulations and recommendations/orders. The local geological conditions across the site were found to generally consist of a between 1 and 2 m thick silty sand stratum over clay. The thickness of the waste ranges between 3.1 and 3.8 m based on the advancement of two (2) boreholes within the waste mound. A sub drain was installed by the City of Cornwall along the west perimeter of the property to aid of controlling the excess groundwater as well as run-off. Sixteen groundwater monitoring wells have been constructed across the area, in and within proximity to the former landfill site. Surface water sample locations have also been established by TRG. These samples locations and monitoring wells are utilized to establish the environmental conditions and potential impacts as a result of the former landfill activities. Two (2) groundwater and surface water sampling events were carried out in 2008 (May and October) by TRG. The laboratory analysis results of the sampling events were compared to the <i>Table 3 Soil, Groundwater and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act, Non-Potable Groundwater Conditions, All Types of Property Use</i> . The surface water samples collected were also compared against the Provincial Water Quality Objectives (PWQO). Elevated levels, above the applicable provincial Table 3 criteria, were found for Zinc, Copper, Benzo(a)pyrene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, and Indeno(1,2,3-cd)pyrene parameters at select groundwater monitoring locations within the waste mound and slightly side gradient. Select surface water samples collected in 2008 were found to have values	

of Iron, Boron and Zinc above the PWQO. All parameters analyzed meet the Table 3 provincial standards.

TRG concludes that the groundwater quality of the Site does have exceedances to the Table 3 provincial guidelines, however the exceedances are described as minor. The leachate plume from the former landfill is found to impact the silty sand aquifer and appears to migrate south, southwesterly and southeast at a rate of approximately 1.4 m/yr.

Reports:	Asbestos Re-Assessment Survey Update Report; and Asbestos Assessment Survey Report
Date:	December 5, 2014 and January 30, 2015
Author:	Abacon Environmental Consultants Inc.
Prepared for:	The City of Cornwall
Description of data, analysis and findings relevant to the Phase I ESA:	
Asbestos (Re-) Assessment reports for various City of Cornwall Public Works buildings were provided by the City of Cornwall for review. The buildings assessed included the Administration Building, Barricade Shed, Carpenter Shop, City Stores, Equipment Storage Shed, Garage, Roads Shop, Salt/Sand Shed #1, Salt/Sand Shed #2, Tire Shed, Traffic Shop and Waterworks/Sewer Shed.	
Asbestos containing materials were identified at the following locations:	
- The administrative building was found to have what was identified as cheese cloth cement (parging) on small fittings and transite on the walls in the work area and offices that were found to be asbestos containing materials (ACM). The vinyl floor tiles encountered in the file storage and print room were ACM as well as the vermiculite found behind the exterior face and electrical room. The transite on the pipes in the electrical room were assumed ACM; - In the washrooms of the carpenter shop, the ceiling and wall joint compound was assumed ACM as it was not sampled to avoid damage; and - Firestop material was encountered on the walls of the garage and was considered ACM.	
The environmental concerns associated with ACM are low when the material is undisturbed. It is recommended that prior to any renovation, demolition or site alteration activities, these reports should be provided and reviewed to/by the parties involved so the proper procedures and precautions can be undertaken to minimize the impacts of ACM material to the environment and human health.	

Reports:	Proposed 150 mm Watermain Construction on Lemay Street From St. Michel to Ontario Street Site Plan
Date:	December 17, 2006
Author:	Cornwall Infrastructure and Municipal Works Department Engineering Division
Prepared for:	The City of Cornwall
Description of data, analysis and findings relevant to the Phase I ESA: AECOM Canada provided LRL with a site plan depicting the locations of the municipal underground utilities along Lemay Street between the intersections of St. Michel Street and Ontario Street. The site plan revealed that east of the Michel Street and Lemay Street intersection, buried waste was encountered along the south portion of Lemay Street. The waste is likely from the adjacent former landfill site immediately north. The buried waste was encountered between 1.0 to 3.0 m below grade for at least 6 metres from the west to east. The full depth of the waste is not known as well as the full extent of the buried waste to the south and east. It is possible that the waste continues on Lemay Street east towards 1225 Ontario Street and south onto 1246 and 1225 Ontario Street.	

3.4 Environmental Source Information

3.4.1 City of Cornwall Freedom of Information Request

The City of Cornwall was contacted to obtain available information for the Site.

Interview subject:	Karl Doyle, Zoning and Site Plan Control Coordinator
Date:	June 3, 2015
Pertinent information: A freedom of Information Request was made to the City of Cornwall. According to the City of Cornwall's Official Plan, Schedule 4, there is no indication that the Site is a Brownfield or that it was a former Waste Disposal Site, including bark disposal. The Site was found not to have been a coal tar site. According to the City of Cornwall's GIS mapping system, a former waste disposal site is present to the north of 1225 Ontario Street. Several environmental monitoring reports were available for review pertaining to the former waste disposal site. A second former waste disposal site was identified approximately 300 m southeast of the Site following McConnell Avenue. The former waste disposal site north of 1225 Ontario Street poses high potential for environmental concern to the Site.	

3.4.2 Ontario Ministry of Environment's Freedom of Information Act

The Ontario Ministry of the Environment (MOE) was contacted under the Freedom of Information Act (FOI) to obtain available information for the Site regarding:

- Certificates of Approvals or any permits relating to air emissions (including noise), water taking and discharging, waste disposal sites, septic systems, pesticides storage or other similar instruments;
- Incidents, orders, offences, spills, discharges of contaminants or inspections;
- Waste management records, including current and historical waste storage locations and waste generator and waste receiver information; and
- Reports submitted to the MOE related to the environmental conditions of the property.

Interview subject:	Heidi Ritscher, FOI Manager
Date:	May 5, 2015
Pertinent information:	Under the Freedom of Information Act, a freedom of Information Request was made to the MOE. A search of the Ministry's Cornwall District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were retrieved pertaining to the Site. The records retrieved are summarised as follows: • June 24, 1986, The Corporation of the City of Cornwall was issued a Generator Registry Number for the property located at 1225 Ontario Street in Cornwall. The registry number was for the generation of oil waste (252 L); • December 13, 1990, the MOE was notified of an oil sheen in Fly Creek (approximately 300 m east to southeast of the Site) from a drain at the City's municipal yard. The impacts were identified by the MOE as not significant and a recommendation to install an oil water separator was made to the City; • April 15, 1996, The Corporation of The City of Cornwall was issued a Generator Registry Number for the property located at 1225 Ontario Street, Cornwall for the following waste material: Paint/Pigment/Coating Wastes, Miscellaneous Inorganic Chemicals, Petroleum Distillates, Light Fuels, Halogenated Pesticides, Waste Oils and Lubricants, Miscellaneous Organic Chemicals and Waste Compressed Gases; • An inspection of the Site was carried out by the MOE on January 23, 2004 to confirm that the Site is in compliance with Ontario Regulation 347, Waste management pertaining to Waste Hazardous and Liquid Industrial generator facility at 1225 Ontario Street. According to the inspection reports, the Site was registered as a waste generator, however select wastes generated at the Site are not part of the registry. The oil water separator is registered however the glycol waste generated in the repair garage is not registered. It was stated that the City must register the glycol waste; • On February 5, 2004 a spill was reported to the MOE by the City of Cornwall. Approximately 20 litres of hydraulic oil was uncovered by a City worker in a manhole at 1225 Ontario Street. It is likely the result of a City vehicle or equipment leaking hydraulic oil which ended up in the service. A contractor was obtained to clean up the spill. The file was closed in April 2004; • On January 15, 2010, A Certificate of Approval (Environmental Compliance Approval) for Air was issued to The Corporation of the City of Cornwall located at 1225 Ontario Street, Cornwall. The Certificate of Approval is in support of a backup diesel generator that would be used to provide power to the Site in the case of a power outage; and • October 28, 2010, the City of Cornwall contacted the MOE to requesting aid in registering as a Hazardous Waste Information Network as a Waste Hazardous and Liquid Industrial generator. No further information was provided pertaining to the type of waste, quantity and source.

3.4.3 Inventory of Coal Tar Industrial Sites in Ontario

The MOE has created an inventory of all known and historical coal gasification plants. It identifies industrial sites that produced and continue to produce or use coal tar or other related tars. The program was discontinued in 1988.

Database:	Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario
Years covered:	Up to 1988
Search radius:	250 m
Description of data, analysis and findings relevant to the Phase I ESA: No records were found within a 250 m radius from the Site.	

3.4.4 Technical Standards and Safety Authority

Fuel storage at commercial and industrial facilities is regulated by the Technical Standards and Safety Authority (TSSA). Records of aboveground storage tanks are maintained for bulk storage facilities only. Underground storage tanks are required to be registered with the TSSA. There are no requirements to register private underground and aboveground fuel oil storage tanks for heating or waste oil. Records of registered and licensed tanks have been maintained since 1990.

Interview subject:	Sarah Quibell, Public Information Agent
Date:	April 13, 2015
Pertinent information: TSSA was contacted regarding available information concerning the presence of petroleum storage tanks, fuel spill records, accidents or fuel-related incidents which may be registered on the site or surrounding properties. The following records were retrieved for 1225 Ontario Street, Cornwall: - On January 4, 1990, three (3) 25,000 L single walled steel underground petroleum storage tank were inspected. The tanks were installed in 1987 and diesel (one) and gasoline (two). These tanks are found to be active to date; - An inspection by the TSSA on October 27, 1995 stated that the Site conforms with the applicable regulations pertaining to fuel dispensing facilities; - Recommendations pertaining to signage at the fuel dispensing facility were made by the TSSA following an inspection on July 23, 2002; and - July 23, 2005, the TSSA performed a site visit to inspect the petroleum installations. Deficiencies were found including the lack of corrosion protection and the records of the corrosion test were not available on Site. It was recommended by the TSSA that the steel piping and vents from the tanks be provided with corrosion protection. The underground storage tank system should be tested for corrosion protection by a qualified person.	

3.5 Ecolog Eris Databases

Databases accessed through Ecolog Eris, a database service provider from Toronto, Ontario are detailed below. Their report is included in **Appendix B**.

3.5.1 Anderson Waste Disposal Sites

This database is a collection of information from historical documents pertaining to the location of former waste disposal sites dating back to 1860 through present. This database was compiled to include those waste disposal sites that may be missing from the Ontario MOE Waste Disposal Site Inventory as well as correct the approximate locations and descriptions of facilities previously listed. Select auto wrecking facilities and scrap yards are included in the database.

Database:	Anderson s Waste Disposal Sites
Years covered:	1860 s to Present
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Two (2) records were retrieved within 300 m of the Site. Both records are for the Ontario and Lemay Dump OP located immediately north of the Site at Cornwall Concession 2, Lots 7 and 8 parts. The former dump site was active in 1960 and encompasses an area of approximately 4.5 hectare. They present a high environmental risk for potential environmental concern to the Site.	

3.5.2 Certificates of Approvals

Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval (C of A) before it can operate lawfully.

Database:	MOE Certificates of Approval
Years covered:	1985 to October 2011
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
The Corporation of the City of Cornwall, 1225 Ontario Street, was issued a Certificate of Approval (CofA) for air in January 2010. No further details were provided. Two (2) CofA were issued to the City of Cornwall for municipal water and municipal sewage at the McConnell Avenue and Lemay Avenue in 1991. They present a low environmental risk for potential environmental concern due to their compositional attributes.	

3.5.3 Environmental Registry

In October 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities (heating systems, standby power system and automotive refinishing) with the ministry rather than apply for an approval.

Database:	Environmental Activity and Sector Registry
Years covered:	October 2011 to February 2014
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
1675755 Ontario Inc. at 125 Eleventh Street West, approximately 240 m south of the Site, has an approval to discharge into the natural environment, other than water (likely air). No further details are provided other than it is related to an instrument proposal. It presents a low environmental risk for potential environmental concern due to its distances and likely compositional attributes.	

3.5.4 ERIS Historical Searches

EcoLog Eris has compiled a database of all environmental reports completed since March 1999.

Database:	ERIS Historical Searches
Years covered:	1999 to August 2014
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
ERIS searches were conducted on a property located approximately 120 m southwest of the Site at 1107 Gretchen Court. The search was carried out in May 2010. It presents a low risk for environmental concern.	

3.5.5 Fuel Storage Tank

The Technical Standards and Safety Authority maintain a database of registered and private fuel storage tanks located throughout Ontario. The database is created in accordance with the TSSA Act of 2000. The database includes information on the location of the fuel storage tank, tank status, the date that the license was obtained, details of the tank including construction, size and content, the type of facility and the date the tank was installed.

Database:	Fuel Storage Tank
Years covered:	2010 November 2014
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Three (3) records of active fuel storage tanks were retrieved for the Site, 1225 Ontario Street. The tanks were installed in 1987 and are of single walled steel construction. The tanks are 25,000 L capacity. Two (2) of them contain gasoline and one (1) contains diesel. The tanks present a high risk for environmental concern.	

3.5.6 Fuel Storage Tank- Historic

The Technical Standards and Safety Authority maintain a database of registered and private fuel storage tanks located throughout Ontario. The database is created in accordance with the TSSA Act of 2000. The database includes information on the location of the fuel storage tank, tank status, the date that the license was obtained, details of the tank including construction, size and content, the type of facility and the date the tank was installed.

Database:	Fuel Storage Tank - Historic
Years covered:	Pre- January 2010
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Two (2) records of Fuel Storage Tank Historic were retrieved on the Site, 1225 Ontario Street. Both records. The records were for the tank status described on August 2007 and December 2008. The records indicate three (3) liquid fuel single wall underground storage tanks installed in 1987. They each have a capacity of 25,000 L and contain gasoline and diesel. The tank status described in the reports is those of August 2007 and December 2008. The tanks present a high risk for environmental concern.	

3.5.7 Ontario Regulation 347 Waste Generators Summary

The MOE's Waste Management branch maintains an inventory of Waste Generators in Ontario.

Database:	Ontario Regulation 347 Waste Generators Summary
Years covered:	1986 to July 2013
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Twelve records of were found for the Site, 1225 Ontario Street, and three (3) for select properties within 300 m of the Site.	
Between 1988 and 1990, 1992 and 2004 the Site was registered as a generator of Paint/Pigment/Coating Residues, Inorganic Laboratory Chemicals, Petroleum Distillates, Light Fuels, Halogenated Pesticides, Waste Oils and Lubricants, Organic Laboratory Chemicals and Waste Compressed Gases. In 2009 through 2013, the Site was registered as a generator of Aliphatic Solvents and Waste Oils and Lubricants. Between 1998 and 2008 the Site was listed as a generator of Oil Skimming and Sludges, Aliphatic Solvents and Waste Oils and Lubricants. As of April 2014, the Site has been registered as a generator of Aliphatic Solvents and Residues and Waste Crankcase Oils and Lubricants. The wastes generated at the Site from between the late 1980s and April 2014, present a moderate to high environmental risk of potential environmental concern.	
Approximately 280 m east of the Site, Mr. Rudy Ladouceur at 11223 McConnell Avenue, is listed as a waste generator in 2003 and 2004. The details of the material generated were not provided. The wastes generated at this property present a low environmental risk due to its location side-gradient of the Site according to the assumed groundwater flow direction to the south.	

ESSO Petroleum Canada, located approximately 250 m south of the Site at 1020 Adolphus Street is listed as a generator of Light Fuels and Oil Skimming and Sludges wastes between 1992 and 1998. The waste generated at this property presents a low environmental risk of potential environmental concern on the Site due to its location down-gradient of the Site according to the assumed groundwater flow direction to the south.

3.5.8 TSSA Historic Incidents

This database covers TSSA incidences reordered under the former reporting system. The database provides information pertaining to fuel-safety related services that are associated the handling of the use of fuels, the transportation of fuels, and the storage of fuels (such as gasoline, propane or diesel). This database also provides information regarding historical spills and leaks or fuel.

Database:	TSSA Historic Incidents
Years covered:	2006 June 2009
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Three (3) records of TSSA Historic Incidents were retrieved within 300 m of the Site. The records are as follows:	
- Approximately 100 m southeast of the Site at 12 Leduc Circle a fuel oil leak was reported in July 2007. The property is a private dwelling. The risk for environmental concern associated with this incident is low due to its location down and side-gradient of the Site; - In September 2008, a natural gas pipeline strike occurred approximately 160 m east of the Site at 1126 Larin Avenue. The risk for environmental concern associated with this incident is low due to the compositional attributes of the released material; and - A fuel oil leak occurred in March 2009 at 1356 Marc Street, approximately 160 m northwest of the Site. The property is a private dwelling and it is indicated that an unknown amount of heating oil (fuel oil) was released however the area in proximity to the furnace as well as the walls was soaked with fuel. The risk for environmental concern associated with this incident is low to medium due to its distance from the Site.	

3.5.9 National Pollutant Release Inventory

The National Pollutant Release Inventory is a database compiled of over 300 substances by the federal government of Canada that have been released into the natural environment by either land, air or water, and waste transfers for recycling.

Database:	National Pollutant Release Inventory
Years covered:	1993 -2013
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
The Site, 1225 Ontario Street, is listed as a pollutant release facility in 2004. The substances released include Total Particulate Matter, Particulate Matter (≤ 10 microns), Nitrous Oxide, Nitrogen Oxide, Carbon Dioxide, Particulate Matter (≤ 2.5 micron), Carbon Monoxide, Sulfur Dioxide, Hydrofluorocarbon, Methane and Volatile Organic Compounds. The release of these substances presents a low risk for environmental concern as they are generally gaseous.	

3.5.10 Pesticides Registry

A database of all Ontario manufactures and vendors of pesticides is maintained by the Ontario Ministry of Environment.

Database:	Pesticides Registry
Years covered:	1988 June 2013
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Jean-Pierre Labelle O/A P T Environmental Services, located at 1131 Larin Avenue, approximately 200 m east of the Site, is listed in the Pesticides Registry database. No further information is provided. It presents a low risk for environmental concern due to its distance side-gradient of the Site based on assumed groundwater flow direction.	

3.5.11 Private and Retail Fuel Storage Tanks

The Ontario Ministry of Environment Fuels Safety Branch maintains a database of all Ontario registered private fuel storage tanks and licensed retail fuel facilities. This database includes the locations of registered oil, gasoline, waste oil and natural gas or propane storage tanks. The database only includes information up to 1996. Thereafter, the TSSA maintains a similar database.

Database:	Private and Retail Fuel Storage Tanks
Years covered:	1989 - 1996
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
The Site, 1225 Ontario Street, is listed as containing a private 75,000 L fuel storage tank. It is likely that this record combined the three (3) 25,000 L gasoline and diesel present on the Site and presented it as a total capacity of 75,000 L. The fuel storage tanks present a high risk for environmental concern.	

3.5.12 Ontario Spills

The database identifies information such as location, type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact etc.

Database:	Ontario Spills
Years covered:	1988 to June 2013
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Records of six (6) spills within 300 m of the Site were retrieved, one of which occurred on the Site, 1225 Ontario Street.	
A spill occurred on February 5, 2004 on the Site, 1225 Ontario Street. Approximately 20 L of hydraulic oil was spilt to a catch basin by an undetermined incident. Environmental impacts were not identified. Further details of this spill are provided in Section 3.4.1 of this report. It presents a low environmental risk as the spill was to a municipal service and is likely contained rather to the natural environment.	
On March 27, 2009, approximately 160 m northwest of the site at 1356 Marc Street an unknown amount of furnace oil was leaked from a residential furnace. Possible environmental impacts were identified. It presents a low to medium environmental risk due to its distance from the Site.	
On June 9, 2011, a spill was reported at the Cornwall Street Railway Light and Power Company Limited at 1336 Marc Street, approximately 195 m northwest of the Site. It is reported that 3 L of transformer oil was spilt to the ground. The reason for the spill is not known and environmental impacts were identified as not anticipated. It presents a low environmental risk due to its distance from the Site.	
110 L of non- Polychlorinated Biphenyls (PCB) mineral oil was spilt at the intersection of 11 th Street and Cooper Street, approximately 250 m southeast of the Site. The spill occurred on March 4, 2009 as a result of transportation accident. Vegetation damage was reported and environmental impacts were identified as possible. It presents a low environmental risk due to its distance from the Site and its down-gradient location according to the assumed groundwater flow direction.	
A furnace oil spill occurred on March 27, 2003 at 1123 McConnell Avenue, approximately 280 m east of the Site. The spill was the result of an aboveground furnace oil storage tank leak as a result of equipment malfunction. Soil and groundwater impacts were identified. It presents a low environmental risk due to its distance from the Site.	
On May 10, 1993, a Delaney Bus Lines vehicle spilt 220 L of diesel to the ground at the intersection of 11 th Street and Amelia Street, approximately 230 m south of the Site. The spill was identified as a result of a damaged fuel line on the vehicle. Soil contamination was identified and environmental impacts were confirmed. It presents a low environmental risk due to its distance from the Site and its down-gradient location according to the assumed groundwater flow direction.	

3.5.13 Scott's Manufacturing Directories

Scott's Directories is a data bank containing information on over 70000 manufacturers in Ontario.

Database:	Scott s Manufacturing Directory
Years covered:	1992 to March 2011
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Versus Business Forms Inc. located at 1065 Roy Avenue, approximately 285 m southeast of the Site is a wholesale trade agents and brokers facility established in September 1991. They present a low environmental risk because of their distance and their down-gradient location with respect to the assumed groundwater flow direction.	

3.5.14 Waste Disposal Sites MOE 1991 Historical Approval Inventory

The MOE s Waste Management branch maintains an inventory of known open (active or inactive) and closed disposal site in Ontario as of October 31, 1990. The database includes the location of the site, the site number, the type of waste that is/was accepted, the site status and classification, and the date the facility was closed (when applicable).

Database:	Waste Disposal Sites MOE 1991 Historical Approval Inventory
Years covered:	Up to October 1990
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Immediately north of the Site, at Lot 8 Concession 2, Cornwall is a closed waste disposal site. The waste disposal site has been closed since 1960 and formerly accepted urban municipal/domestic waste. This former waste disposal site is classified as A5 which is identified as having potential human impacts. The former waste disposal site presents a high environmental risk because of its distance and immediately up-gradient location with respect to the assumed groundwater flow direction.	

3.5.15 Water Well Information System

The database provides information on the locations and characteristics of water wells throughout Ontario in accordance with Ontario Regulation 903. Information of the stratigraphy, depth to bedrock and approximate depth to the water table are also provided.

Database:	Water Well Information System
Years covered:	1955 March 2014
Search radius:	300 m
Date accessed:	April 16, 2015
Description of data, analysis and findings relevant to the Phase I ESA:	
Two (2) wells were located within a 300 m radius from the Site. They are detailed below:	
- Well # 7044387 is located on the adjacent property to the southeast of the Site. The well is an observation well and was installed in Mach 2007. The well extends to ta depth of 4.5 m. Soils encountered consisted of 0.7 m of brown silty sand followed by till, grey over brown to depths of 2.3 m. Beneath the till was brown gravel with clay to 4.5m where the well was terminated. - Well # 5804811 is located on the adjacent property immediately northwest of the Site. The well is an observation well that was constructed in February 2004. The water encountered was identified as fresh, gas. No further information was provided.	
It is suspected that these observations wells are associated with the former waste disposal site immediately north of the Site.	

3.6 Material Safety Data Sheets

Various chemicals are stored throughout the Site including paints, oils, and asphalt laying related products. Material Safety Data Sheets were available for review on Site however. Select chemicals stored on site are as follows:

Chemical/Common Name	Description/Application	Approximate Quantity
Magnesium chloride hexahdrate	Road de-icing brine. Stored in sealed container at the northern portion of the municipal yard.	15000 L
Chlorine	Chlorination of City recreational facility pools. Stored in locked storage shed at 301 Sunnyside Avenue.	Uncertain
<i>RELEASE</i> Asphalt Release Agent	Used during road/utility repair. Stored in locked Roads Building .	60 L
<i>Seal Tight 1220</i> White Pigmented Curing Compound	Surface curing compound used in concrete to limit thermal cracking. Stored in locked Roads Building .	60 L
Organic Tar Remover <i>ECONO-OTEC</i>	Degreaser. Stored in locked Roads Building .	40 L
Propylene Glycol	Used during sub-zero temperatures in select fire hydrants to limit freezing or the utility. Stored in Road Building .	140 L
Diesel Exhaust Fluid	General use in equipment. Stored in sealed containers in Road Building .	200 L
<i>Lift Off Lift Station</i>	Road work activities. Stored in sealed containers in Road Building .	60 L
<i>BIO-SAFE</i> Drain & Sewage Grease Digester	Road work activities. Stored in sealed containers in Road Building .	60 L

3.7 Physical Setting Sources

3.7.1 Aerial Photographs

Aerial photographs were obtained from the National Air Photo Library in Ottawa, Ontario. The review of the photographs was done to develop a general history of the development of the site and surrounding properties. The aerial photographs may be at a scale that limits a detailed review of the site and surrounding properties. Copies of select aerial photographs are included in **Appendix C**.

Year	Photo Number	Scale
1946	A10245-158	1:15,000
1958	A16135-166	1:12,000
1964	A18371-10	1:25,000
1973	A23293-5	1:20,000
1979	A25283-110	1:25,000
1987	A27191-175	1:50,000
1994	A28135-80	1:20,000
Rational for time period between aerial photographs used		
A regular interval of approximately 10 years was used, when possible.		
Summary of information obtained from aerial photographs		
The Site and the adjacent properties are generally vacant in 1946 (AP1). Ontario Street is present bisection the Site in a north-south direction. The waste disposal site is present immediately north of the Site and some development on the properties to the south are present. In 1958 at 1225 Ontario Street is developed as well as the northern portion of the vacant lot to southwest on the subject site. Further development is present south of the Site and the waste disposal site appears larger than in the 1946 aerial photograph. Additional development along the south portion of the Site is observed in the 1964 aerial photograph. Earth moving activities appear to have occurred at the northwest corner of the Site. In 1973 the western portion of the Site appears developed and the waste disposal site north of the site does not appear to be active. Additional development is observed in 1979 (AP2) on the western portion of the Site. No significant changes were observed in 1987 other than an increase in development in the general area. The structure at the north portion of the Site (Parks Building) is present in 1979. In 1994 (AP3), the Site and the adjacent properties appear similar to that of their current condition.		
Relevant information regarding potentially contaminating activity and areas of potential environmental concern		
The waste disposal site to the north of the Site is identified as a potentially contaminating activity. The former development on the southwest portion of the Site, now the vacant parcel of land is identified as a potential environmental concern.		

3.7.2 Topography, Hydrology & Geology

A topographic map was obtained to illustrate the location of the Site in relation to any water bodies in the area and to document the regional topography. The map is included in **Appendix D**.

Map:	Ontario Base Map
Approximate elevation:	Between 58 and 62 m above mean sea level
Topography:	Sloping towards the south
Nearest open water body:	St-Lawrence River, approximately 2.6 km to the southeast.

Maps were obtained from Ecolog Eris to review the regional geology and information on the surficial soil and bedrock. The maps are included in **Appendix D**.

Generalized surficial geology:	Offshore Marine Deposits: Clay. Silty clay and silt.
Generalized bedrock geology:	St. Martin Formation: Limestone, minor shale and dolomite.

4 INTERVIEWS

Interview subject:	Bill de Wit, C.E.T., Division Manager of Municipal Works
Date:	May 29, 2015
Pertinent information:	
• Mr. de Wit has worked with City of Cornwall since the mid 1980 s, specifically at 1225 Ontario Street since 2005. • The eastern portion of the Site has been owned by the City of Cornwall Since the 1940 s and has been used as a municipal yard since that time. Prior to the municipal yard, the property was used as agriculture. It is understood that the western portion of the property was agricultural until between 1950 s 1960 s when it was developed with the current storage building. A mobile home was present on the southwest portion of the Site until approximately 2005 when it was removed when the City purchased the parcel. • Mr. de Wit has indicated that select buildings on the Site do have issues with either leaking roofs or settling. • It is suspected that a former potable water well and septic may have serviced the Site prior to municipal services, however the locations of these features are not known. • The Site is currently equipped with a card-lock fueling station, three (3) underground 25,000 L petroleum storage tanks, and a vehicle repair garage with a 900 L underground waste oil storage tank. A former waste disposal site is present immediately north of the Site however, Mr. de Wit indicated that it is suspected that the waste mound encroached onto the current municipal yard based on the slope along the north of the property. • The north portion of the municipal yard is used to store soil from emergency road work activities (such as water main breaks). The material is not tested for potential contaminants prior to being disposed of at the property. The material is later transported to the City of Cornwall waste disposal site. Snow is also stored in this location. Material from City hydro-vac activities is disposed of in the open pit at the northeast portion of the Site. • Magnesium Chloride, used during de-icing activities is stored at the north portion of the municipal yard. • Waste oil and filters produced in the repair garage is disposed of off-site by a licensed hauler. • Mr. de Wit is not aware of any notices of environmental violations from any agency, any investigations by government agency of potential responsibility for environmental contamination, including off-site contamination or of any law suites, disputes or administrative proceeding regarding environmental concerns associated with the site or activities conducted on the site.	

5 SITE RECONNAISSANCE

5.1 Site Visit Information

Date:	May 29, 2015
Time:	8:15 am 10:15 am
Weather Conditions:	Sunny, 15°C.
Person conducting site visit:	Jessica Arthurs, Environmental Technician
Limitation to visit:	The tire storage shed was not accessible at the time of the site visit.
Property Use	City of Cornwall Publics Works municipal yard, office space, equipment maintenance garage and storage. The north east portion is treed and the southwest portion is a vacant grassed area.

Photographs from the site visit are included in **Appendix E**.

5.2 General

5.2.1 Hazardous Materials & Unidentified Substances

Hazardous materials:	Chemicals used during typical property maintenance and on-site activities are stored across the Site. These materials include paints, solvents and petroleum based oils and lubricants, road de-icing solution and other infrastructure maintenance related chemicals (described on section 3.6).
Unidentified substances:	Not observed

5.2.2 Storage Tanks & Containers

Aboveground storage tanks (ASTs):	Not observed.
Underground storage tanks (USTs):	Three (3) petroleum storage tanks located along the west perimeter of the central portion of 1225 Ontario Street. The tanks are active and were installed in 1987. They each have a capacity of 25000 L and are of single steel walled construction. Two (2) of the tanks contain gasoline, and the third contains diesel. A 900 L capacity waste oil UST is located along the north face of the repair garage. No further details are provided.
Fill ports, vent pipes:	Along west-central perimeter of the Site associated with the three (3) petroleum dispensing USTs. Waste oil is disposed of into the 900 L UST through the cap of the tank that extends about 30 cm above the ground surface.

Storage containers:	A 15000 L capacity aboveground container is located at the northern portion of the Site between the two (2) salt/sand storage sheds. It is used to store de-icing brine (MgCl). Within the repair garage, along the north face of the building, four (4) plastic containers are present used to store automotive transmission fluid, <i>Preston</i>, Hydraulic oil and motor oil used during the associated activities. Several other containers, pails and drums are present across the Site used to store various chemicals associated with the City's Public Works activities. They are all in generally good contention with no evidence of punctures or corrosion. Some evidence of spills of oils were observed in the repair garage in proximity to select storage containers.
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5.2.3 Odours

Odours:	Not observed.
Air emissions:	Other than those associated with the natural gas heating systems of the building on the Site, a hood exhaust is located in the Sign Building. It does not appear to be use and its former purpose is not known. However, as mentioned in Section 3.5.9, the Site was listed as a pollutant release facility in 2004. The substances released included Total Particulate Matter, Particulate Matter (≤ 10 microns), Nitrous Oxide, Nitrogen Oxide, Carbon Dioxide, Particulate Matter (≤ 2.5 micron), Carbon Monoxide, Sulfur Dioxide, Hydrofluorocarbon, Methane and Volatile Organic Compounds. It is assumed that this hood vent was the source of the released substances. The release of these substances presents a low risk for environmental concern as they are generally gaseous.

5.3 Exterior Observations

5.3.1 Topographic Geologic & Hydrogeologic

Landscaped & vegetated area:	The northeast portion of the Site extending east towards Lemay Street is treed. The southwestern portion of the Site is grassed.
Pavement, roads & driveways:	The majority of the municipal yard is asphalted with the exception to the northern portion that is gravel and used for snow/soil dumping. A parking area is present at the east-central portion of the Site at the Stores Building and at the northern portion at the 301 Sunnyside Avenue. Lemay Street bisects (east-west) the northern portion of the Site and Ontario Street bisects the central portion along the west of 1225 Ontario Street. Twelfth Street bisects the southwestern portion of the Site (east-west).

Topography	The majority of the Site is generally flat with the exception to a notable slope from the northern portion of the Municipal yard extending west along Lemay Street and Ontario Street. The slope declines to the south at the municipal yard and along Ontario Street. Lemay Street slopes west near the west extent of the Site. It is suspected that the raised portion of the Site may be an extension of the waste mound to the north at Optimist Park, the former landfill site.
Surface drainage	Generally following the topography of the Site towards storm drain catch basins across the Site. The direction of surface drainage at the southwest portion of the Site is unknown as this portion of the Site is generally flat.
Drainage improvements:	Storm drain catch basins across the Site. A swale is present across the northern portion of the southwest portion of the Site. Ditches are present along northern western perimeter of the municipal yard as well as along east and north perimeter of the Stores building parcel of land.
Receives drainage from adjacent sites:	Potential from Optimist Park, north of 1225 Ontario Street, towards municipal yard.
Watercourses, ditches or standing water:	Ditches are present along northern western perimeter of the municipal yard as well as along east and north perimeter of the Stores building parcel of land. A pond is present on the adjacent property to the east of the northern portion of the municipal yard. Hydro-vac truck, owned and operated by The City of Cornwall dispose of their contents following infrastructure work at the northeastern portion of the municipal yard in the Sediment Disposal Pit shown in Figure 3-1 . The pit allows for sediment to settle to the base which is emptied by City staff. The liquid flows onto the neighbouring site into a saturated land causing a ponding area along the perimeter of the Site.
Other observations:	The northern portion of the municipal yard is used to temporarily store snow and soil from snow removal and road work activities. City owned Hydro-vac vehicles deposit their contents in a pit located at the eastern portion of the area.

5.3.2 Structures

Structures:	Barricade Storage Shed (LRL Ref. # 1)
Location:	Southeast portion of Municipal Yard (1225 Ontario Street)
Use:	Storage of Traffic Barricade Equipment
Construction date:	Est. 2000

Foot print:	Approximately 50 m ²
Floors:	Single Storey
Basement:	No. Slab on-grade
Exterior finish:	Metal clad siding with a shingled roof.

Structures:	Public Property Building (LRL Ref. #2)
Location:	Southeast portion of Municipal Yard (1225 Ontario Street)
Use:	Equipment and supplies storage and carpentry shop
Construction date:	1950 s with additions in the 1960 s and early to mid-2000 s
Foot print:	Approximately 580 m ²
Floors:	Single Storey
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	City of Cornwall Public Works Office Space (LRL Ref. #3)
Location:	Southwestern portion of Municipal Yard (1225 Ontario Street)
Use:	Office Space
Construction date:	1970 s
Foot print:	Approximately 450 m ²
Floors:	Two-Stories
Basement:	No. Slab on-grade
Exterior finish:	Cement block and metal clad siding with tar & gravel roof

Structures:	Repair Garage (LRL Ref. #4)
Location:	Central portion of the Municipal Yard (1225 Ontario Street)
Use:	Vehicle and equipment (machinery) maintenance and repair locations
Construction date:	1960 s
Foot print:	Approximately 1220 m ²
Floors:	Open two-stories with mezzanine at the southwest portion used for parts storage
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	Water Distribution Shop (LRL Ref. #5)
Location:	South western portion of the Municipal Yard (1225 Ontario Street)
Use:	Office space, storage and staff facilities (locker rooms, lunch room) for water distribution department
Construction date:	1970 s
Foot print:	Approximately 300 m ²
Floors:	Open two-stories with mezzanines across the southern and the northern and the southern portions used for storage
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	Signs Building (LRL Ref. #6)
Location:	South western portion of the Municipal Yard (1225 Ontario Street)
Use:	Storage and repair of City signs
Construction date:	Est. 1960 s
Foot print:	Approximately 180 m ²
Floors:	Open two-stories
Basement:	No. Slab on-grade
Exterior finish:	Metal clad dome like structure

Structures:	Roads Building (LRL Ref. #7)
Location:	Along the east-central portion of the Municipal Yard (1225 Ontario Street)
Use:	Road maintenance equipment and supplies storage and tire storage
Construction date:	1960 s with an addition in the 1970 s and mid-2000 s
Foot print:	Approximately 580 m ²
Floors:	Open two-stories
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	Equipment Storage Shed (LRL Ref. #8)
Location:	Northeast portion of the Municipal Yard (1225 Ontario Street)
Use:	Equipment storage (such as snow removal plows)
Construction date:	1970 s
Foot print:	Approximately 390 m ²
Floors:	Single Storey
Basement:	None.
Exterior finish:	Metal clad siding and roof.

Structures:	Salt Storage Sheds (LRL Ref. #9)
Location:	North-central portion of the Municipal Yard (1225 Ontario Street)
Use:	Seasonal road salt and sand storage.
Construction date:	1970 (western structure) and 1972 (eastern structure)
Foot print:	Both are approximately 150 m ²
Floors:	Open two-stories
Basement:	None.
Exterior finish:	Metal clad dome like structure

Structures:	Stores Building (LRL Ref. #10)
Location:	Western portion of 1246 Ontario Street
Use:	Supplies storage and office space
Construction date:	Early 1980 s
Foot print:	Approximately 500 m ²
Floors:	Single Storey
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	Parks Building (LRL Ref. #11)
Location:	North-central portion of 301 Sunnyside Avenue
Use:	Equipment and supplies for parks department and office space
Construction date:	Unknown
Foot print:	Approximately 550 m ²
Floors:	Open two-storey
Basement:	No. Slab on-grade
Exterior finish:	Metal clad roof and siding

Structures:	Chlorine Storage Shed (LRL Ref. #12)
Location:	North-eastern portion of 301 Sunnyside Avenue
Use:	Storage of choline for City owned pools
Construction date:	Unknown
Foot print:	Approximately 15 m ²
Floors:	Single Storey
Basement:	No. Slab on-grade
Exterior finish:	Cement block and metal clad siding

5.3.3 Other Observations

Wells:	Not observed.
Sewage disposal:	Not observed.
Pits and lagoons:	Hydro-vac s, owned and operated by the City of Cornwall, empty their contents from road/utility work carried out within the City into a pit located at the northeast portion of 1225 Ontario Street. The content is allowed to settle in the pit so that soil and sediments settle to the base of the bit and the liquid portion migrates east onto the adjacent property where a pond is situated. According to City staff, the sediment settles to the base of the pit and is removed regularly for offsite disposal.
Wastewater:	Not observed.
Solid waste:	Domestic wastes, typical of office space, are generated on Site. The repair garage produces waste oils and automotive parts that are disposed of accordingly offsite. The waste oil produced is kept on site in a 900 L UST awaiting disposal by a licensed contractor.

Stained material:	Minor surface staining was observed on the floor in the repair garage. Areas where absorbent material was placed over a spill was also noted across the garage.
Stressed vegetation:	Not observed.
Fill or previous fill activities:	The presence of significant amounts of fill material (beyond that required for normal construction and/or grading) was generally not observed across the Site with the exception to the northern portion of the 1225 Ontario Street. The northern portion of the Municipal Yard is elevated in comparison to the remainder of the surround land which continues west along Lemay Street. Similar topography is noted to the north at the former landfill site. It is suspected that this is a result of buried waste encompassing this area.
Earth-moving activity:	Not observed.
Other	A water distribution area is located at the northwestern portion of the Municipal Yard. Material aggregates are stored across the majority of the northern portion 1246 Ontario Street.

5.4 Utilities

Potable Water:	Municipal water
Wastewater:	Municipal sanitary sewer
Storm Sewer:	Yes
Electricity:	Yes
Telephone:	Yes
Natural Gas:	Yes

5.5 Interior of Structures

Heating Systems	Generally, the majority of the structures are heated by natural gas. The office building is heated by an electric packaged terminal (PTAC) system. Some buildings are not heated, namely those that are solely used for storage. Electric baseboard units were noted in the select locations of the office building.
Cooling Systems	The majority of the buildings are not cooled. Wall mounted air conditioning units are present in select buildings. The office building is cooled by an electric PTAC unit.
Floor drains:	Floor drains are present throughout the buildings that are suspected of tying into the municipal storm services.
Sumps:	Not observed.
Paint booth:	Not observed.
Staining or corrosion (other than water):	Minor surface staining was observed on the floor in the repair garage. Areas where absorbent material was placed over a spill was also noted across the garage.

Mechanical equipment:	Hydraulically operated devices that can contain hydraulic oils (i.e. piston type elevators, vehicle hoist and compactors) were observed. In-ground, stationary hoists are present in the repair garage.
Interior finishing	The interior finishes varied amounts the buildings throughout the Site. Generally, the garages and storage sheds had exposed metals clad walls and ceilings with cement slab or granular crushed stone floors. Gyp-roc and ply-wood walls and ceilings, acoustic ceiling tiles, vinyl floor tiles, terrazzo flooring and cement block walls were observed throughout the remainder of the buildings. Fluorescent lighting was encountered throughout.
Other:	Not observed.

5.6 Adjacent Land Use

The current land uses of the adjoining properties were observed from the property limits and publicly accessible locations to assess potential impacts to the site that may arise from off-site operations. The properties surrounding the subject site are as follows:

North:	301 Sunnyside Avenue: Hydro Transmission Line 1225 Ontario Street: Optimist Park (recreational) - former landfill site 1246 Ontario Street: Lemay Street followed by Optimist Park (recreational) - former landfill site Concession 2 part lot 8 Reference Plan 52r6444; part 2, Part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8: Treed South Part of Concession 2 part lot 8d 1753.91: Twelfth Street East followed by grassed area
South:	301 Sunnyside Avenue: Optimist Park (recreational) - former landfill site 1225 Ontario Street: Residential 1246 Ontario Street: Twelfth Street East followed by grassed area Concession 2 part lot 8 Reference Plan 52r6444; part 2, Part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8: Treed and residential South Part of Concession 2 part lot 8d 1753.91: Residential
East:	301 Sunnyside Avenue: Optimist Park (recreational) - former landfill site followed by treed. 1225 Ontario Street: Treed 1246 Ontario Street: Ontario Street followed by City of Cornwall Municipal Yard (1225 Ontario Street) Concession 2 part lot 8 Reference Plan 52r6444; part 2, Part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8: McConnell Avenue followed by residential South Part of Concession 2 part lot 8d 1753.91: Residential

West: 301 Sunnyside Avenue: Residential

1225 Ontario Street: Ontario Street followed by 1246 Ontario Street Stores Building and associated storage yard and parking facility

1246 Ontario Street: St-Michael Street followed by residential

Concession 2 part lot 8 Reference Plan 52r6444; part 2, Part of Concession 2 part lot 7 Reference Plan 52r4061 parts 1 to 6 and 8: Lemay Street

South Part of Concession 2 part lot 8d 1753.91: Residential

5.7 Special Attention Items

Eleven chemical contaminants have been identified under the Occupational Health and Safety Act (OHSA) and regulations have been set in place to prohibit, regulate restrict, limit or control workers exposure to these substances. Other hazardous materials not included in the OHSA but under the Environmental Protection Act were also observed. The observations presented herein do not constitute a designated substance/hazardous material survey but are rather for information purposes only.

5.7.1 Designated Substances

Asbestos Containing Material (ACM)

Since the late 1970s the manufacture and use of asbestos containing building materials started to decrease. It is commonly presumed that buildings constructed prior to 1980 are more likely to contain both friable and non-friable forms of asbestos. General building constructed up to the mid 1980s are more likely to contain non-friable asbestos (flooring, joint compound).

Due to the construction date of the building (between the 1950s and mid 2000s) the presence of ACM is possible in the majority of the buildings. Potential friable and non-friable asbestos containing material was observed throughout the building (joint compound, vinyl floor tiles and acoustic ceiling tiles). Based on our review of a previous Designated Substance Survey report prepared by Abacon Environmental Consultants Inc. in December 2014 and January 2015, potential ACM materials were encountered throughout the buildings assessed at the time.

Asbestos containing materials was confirmed at the following locations:

- The administrative building was found to have what was identified as cheese cloth cement (parging) on small fittings and transite on the walls in the work area and offices that were found to be asbestos containing materials (ACM). The vinyl floor tiles encountered in the file storage and print room were ACM as well as the vermiculite found behind the exterior face and electrical room. The transite on the pipes in the electrical room were assumed ACM;
- In the washrooms of the carpenter shop, the ceiling and wall joint compound was assumed ACM as it was not sampled to avoid damage; and
- Firestop material was encountered on the walls of the garage and was considered ACM.

Lead

Lead may be present in a variety of building materials including paint and water distributions pipes, however lead based paints (LBP) are considered the most significant hazard. According to published information by Health Canada concerning LBP, buildings constructed before 1980 may contain lead based interior and exterior paints.

Due to the construction date of the buildings (between the 1950 s and the mid-2000 s), the presence of lead-based piping and paints are possible.

Mercury

Minor amounts of mercury are commonly found in a variety of building material including mercury vapour lamps, fluorescent light tubing and thermostats and other electrically control switches.

Fluorescent lighting and thermostats were observed which may contain mercury.

Others

No other designated substances were identified (i.e. arsenic, ethylene oxide, silica, vinyl chloride, benzene, coke oven emissions, acrylonitrile or isocyanates).

5.7.2 Other Hazardous Building Materials/Items

Microbial Contamination and Mould:

Areas of possible sources of mould (i.e. water damage, poor housekeeping, poor ventilation) were identified. No significant amounts of water infiltration and damage were observed however according to City staff, there have been leaks from the roof on occasions.

Ozone-Depleting Substances (ODS):

ODS such as chlorofluorocarbons (CFC) and hydrochlorofluorocarbon (HCFC) are typically found in refrigeration equipment, air conditioners, aerosols, cleaning solvents and fire extinguishers. Federal regulations required the elimination of production and import of CFC and a freeze on the production and import of HCFC by January 1, 1996. The regulations govern only the production and import therefore these materials are still used as long as a supply is in place.

Several refrigerators were observed throughout generally in staff kitchen areas in the buildings. Fire extinguishers and wall mounted air conditioning units are present which possibly contain ODS.

Polychlorinated Biphenyls (PCB):

The Federal Chlorobiphenyls Regulation, SOR/91-152 prohibits PCBs from being used in products, equipment, machinery, electrical transformers and capacitors which were manufactured or imported into the country after July 1, 1980. However, older equipment in use after this date may still contain PCBs if the equipment fluid has not been replaced. PCB-containing equipment can also include fluorescent, mercury, and sodium vapour light ballasts.

Due to the construction date of the building (between the 1950 s and mid-2000 s) the presence of PCBs is possible. The light ballast throughout the building were not verified at the time of the assessment therefore, unless confirmed otherwise, they are considered PCB containing. An electrical transformer is present along the west perimeter of the 1225 Ontario Street parcel of land.

Urea Formaldehyde Foam Insulation (UFFI):

UFFI was widely used as an insulating material until December 1980 when a ban was enacted under the Hazardous Products Act. UFFI was commonly injected through walls by drilling injections holes in roof structures, ceilings and overhangs.

Due to the construction date of the building (between the 1950 s and mid-2000 s) the presence of UFFI is possible.

Radon:

Radon gas is a product of the decay series of uranium that is commonly found in geological units that contain black shale, sandstone or granite. Radon can percolate up through the soil where it may accumulate in basement of buildings with cracks or joints in the foundation. Because the existence of radon is dependent upon geological factors, it is more a regional concern than site specific.

Electric and Magnetic Fields:

Electromagnetic fields are generally associated with high frequency power lines. High voltage power lines are present immediately north of 301 Sunnyside Avenue .

Noise and Vibration:

Noise and vibration is typical of an urban environment (i.e. traffic).

Methane:

Methane gas is a colourless and odourless gas commonly formed by the decomposition of organic material. The land immediately north of 1225 and 1246 Ontario Street, immediately south of 301 Sunnyside Avenue, is a former landfill site there methane is a concern.

6 REVIEW AND EVALUATION OF INFORMATION

6.1 Current and Past Uses

Below is a summary of the current and past uses of 1225 and 1246 Ontario Street in Cornwall, Ontario as well as the adjacent vacant parcel of land south of 1246 Ontario Street following Twelfth Street East, the parcel of land north of 1225 Ontario Street and the parks building and associated property located at the north-central portion of 301 Sunnyside:

Year	Name of Owner	Description of Property Use	Property Use	Source of Information
Prior to 1944	Unknown	Vacant	Vacant	Interview
1944 mid 1950 s	The corporation of the City of Cornwall	Vacant	Vacant	Aerial Photographs, chain of title, interview
Mid 1950 s - present	The corporation of the City of Cornwall	Municipal and vacant	Office space, storage and municipal yard, vacant.	Land Title Search, aerial photograph, interview

7 PHASE I CONCEPTUAL SITE MODEL

The location of the Site is shown in the attached **Figure 1** and the current layout of the Site is shown in the attached **Figure 3.1** and **Figure 3.2**. The St-Lawrence River is located approximately 2.6 km southeast of the Site. The topography of the Site and surrounding area is sloping gently towards the south with elevations between 58 and 62 m above mean sea level

(amsl). The majority of the Site is generally flat with the exception to a notable slope from the northern portion of the Municipal yard extending west along Lemay Street and Ontario Street. The slope declines to the south at the municipal yard and along Ontario Street. Lemay Street slopes west near the west extent of the Site. It is suspected that the raised portion of the Site may be an extension of the waste mound to the north at Optimist Park, the former landfill site.

The Site (all parcels combined) is irregular with an approximate 58,560 m² (14.4 Acres) currently developed with a total of twelve (12) buildings ranging between 15 and 1220 m² in surface area. The southwestern and the northeastern portions of the Site are vacant and treed, respectively. A former mobile home was located at the southern portion of 1246 Ontario Street until approximately 10 years ago when the City took ownership of this Parcel of land and the structure was removed. The northern portion of the municipal yard is used to temporarily store snow and soil from snow removal and road work activities. City owned Hydro-vac vehicles deposit their contents in a pit located at the eastern portion of the area.

The currently 4.5 acre parcel of land immediately north of 1225 Ontario Street is currently used as a recreational field. According to the Anderson Waste Disposal Site Inventory, a landfill was active at this location since at least 1960. Several groundwater quality investigation reports prepared by TRG were provided to LRL for review by Aecom Canada as part of this Phase I ESA as well as part of other subsequent investigations. It was decided that the most recent groundwater quality report provided be reviewed as part of this assessment (2008). Optimist Park, immediately north public works municipal yard, was developed over a former landfill site in the mid 1980 s. The former landfill site that occupied this parcel of land was operated by the City of Cornwall from the 1940 s to the late 1950 s. TRG concludes that the groundwater quality of the Site does have exceedances to the Table 3 provincial guidelines, however the exceedances are described as minor. The leachate plume from the former landfill is found to impact the silty sand aquifer and appears to migrate south, southwesterly and southeast at a rate of approximately 1.4 m/yr. The former landfill site presents a high environmental risk for potential environmental concern.

Additional information provided by AECOM Canada, Proposed 150 mm Watermain Construction on Lemay Street from St. Michel Street to Ontario Street site plan revealed that waste from the former landfill site immediately north of the Site has encroached onto Lemay Street. The buried waste was encountered between 1.0 to 3.0 m below grade for at least 6 metres from the west to east. The full depth of the waste is not known as well as the full extent of the buried waste to the south and east. It is possible that the waste continues on Lemay Street east towards 1225 Ontario Street and south onto 1246 and 1225 Ontario Street.

Asbestos (Re-) Assessment reports for various City of Cornwall Public Works buildings were provided by the City of Cornwall for review. The buildings assessed included the Administration Building, Barricade Shed, Carpenter Shop, City Stores, Equipment Storage Shed, Garage, Roads Shop, Salt/Sand Shed #1, Salt/Sand Shed #2, Tire Shed, Traffic Shop and Waterworks/Sewer Shed. Asbestos containing materials were identified at select locations on the Site.

Correspondence with the TSSA revealed that on January 4, 1990, three (3) active 25,000 L single walled steel underground petroleum storage tank were inspected on the Site. The tanks were installed in 1987 and diesel (one) and gasoline (two). The risks for environmental concerns associated with these installations are high. Three (3) records of TSSA Historic Incidents were retrieved within 300 m of the Site. The risk for environmental concerns associated with these incidents is low due to its location down and side-gradient of the Site or due to their compositional attributes.

Between 1988 and 1990, 1992 and 2004 the Site was registered as a generator of Paint/Pigment/Coating Residues, Inorganic Laboratory Chemicals, Petroleum Distillates, Light Fuels, Halogenated Pesticides, Waste Oils and Lubricants, Organic Laboratory Chemicals and Waste Compressed Gases. In 2009 through 2013, the Site was registered as a generator of Aliphatic Solvents and Waste Oils and Lubricants. Between 1998 and 2008 the Site was listed as a generator of Oil Skimming and Sludges, Aliphatic Solvents and Waste Oils and Lubricants. As of April 2014, the Site has been registered as a generator of Aliphatic Solvents and Residues and Waste Crankcase Oils and Lubricants. The wastes generated at the Site from between the late 1980s and April 2014, present a moderate to high environmental risk of potential environmental concern. It is assumed that these wastes, are associated with the repair garage activities.

A 900 L underground waste oil tank is located along the north face of the repair garage. Waste oil generated on Site is disposed of into the tank which is then removed by a licenced contractor for offsite disposal. A 15000 L capacity aboveground container is located at the northern portion of the Site between the two (2) salt/sand storage sheds. It is used to store de-icing brine (MgCl). Within the repair garage, along the north face of the building, four (4) plastic containers are present used to store automotive transmission fluid, *Preston*, Hydraulic oil and motor oil used during the associated activities. The waste oil UST and other storage container present a moderate to high environmental risk of potential environmental concern. Hydraulically operated devices that can contain hydraulic oils (i.e. piston type elevators, vehicle hoist and compactors) were observed. In-ground, stationary hoists are present in the repair garage which presents a moderate to high environmental risk of potential environmental concern.

Several other containers, pails and drums are present across the Site used to store various chemicals associated with the City's Public Works activities. They are all in generally good contention with no evidence of punctures or corrosion. Some evidence of spills of oils was observed in the repair garage in proximity to select storage containers.

Records of six (6) spills within 300 m of the Site were retrieved, one of which occurred on the Site, 1225 Ontario Street. The records retrieved present low environmental risk generally due to their distance from the Site. The spill that occurred at 1225 Ontario Street was found to present a low environmental risk as the spill was to a municipal service and is likely contained rather than the natural environment.

Maps were reviewed by LRL to obtain the regional geology and information on the surficial soil and bedrock. The surficial geology of the Site consists of Clay. Silty clay and silt. The bedrock geology is found to be the St Martin Formation which consists of Limestone, minor shale and dolomite. The presence of significant amounts of fill material (beyond that required for normal construction and/or grading) was generally not observed across the Site with the exception to the northern portion of the 1225 Ontario Street. The northern portion of the Municipal Yard is elevated in comparison to the remainder of the surround land which continues west along Lemay Street. Similar topography is noted to the north at the former landfill site. It is suspected that this is a result of buried waste encompassing this area. The inferred groundwater flow direction of the Site is south following the topography of the land towards the St Lawrence River.

8 POTENTIALLY CONTAMINATING ACTIVITY & AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

A potentially contaminating activity is a use or activity set out in Table 2 of Schedule D of the O. Reg. 153/04.

The activities on the site and lands within 250 m generally consist of vacant, residential and commercial (retail, fitness center and office space).

Based on the results of the Phase I Environmental Site Assessment the following areas of potential environmental concern were identified:

Potential Environmental Concern	Location	Comments	Contaminants of Potential Concern	Media Potentially Impacted
1225 Ontario Street				
Fuel dispensing equipment/ installations	Along the west perimeter of the property, approximately midway north-south	Consists of three (3) UST containing gasoline and diesel and an associated pump island. Installed in 1987.	VOC, PHC	Soil and groundwater
Waste Oil UST	Along north face of repair garage	900 L capacity.	VOC, PHC	Soil and groundwater
Stationary in-ground hoists	In repair garage	One (1) observed at the time of the Site visit	VOC, PHC	Soil and groundwater
General repair garage activities and waste generated	Approximately center of the property	Minor surface staining observed across the garage	VOC, PHC, Metals, SVOC	Soil and groundwater
MgCl storage	Northern portion of property, between salt storage sheds	15000 L capacity, used for road de-icing	Metals	Soil
Snow and Soil disposal	Northern portion of property	Temporary storage and disposal yard for snow, soil and hydro-Vac activities	Metals, PHC, VOC	Soil and groundwater
1246 Ontario Street				
Former Mobile Home	Southern portion of property	Potential for former oil heating tank and buried waste from removal	VOC, PHC, Metals	Soil and groundwater
Neighbouring Properties within 250 m of the Site				
Former Landfill Site	Immediately north of Lemay Street	Potentially encroached onto 1225 Ontario Street and across Lemay Street based on topographic observations and information provided by the client	Metals, VOC, General Inorganics	Soil and groundwater

The locations of the potential environmental concerns are shown in **Figure 3.1** and **Figure 3.2**.

9 CONCLUSIONS

Based on the findings of the Phase I ESA, it was recommended that a Phase II ESA be conducted on the site to confirm the impacts of the potential environmental concerns identified.

10 LIMITATIONS AND USE OF REPORT

The results of this Phase I ESA should not be considered a warranty that the subject property is free from any and all contaminants from former and current practices, other than those noted in this report, nor that all compliance issues have been addressed.

The findings contained in this report are based on data and information collected during the Phase I ESA of the subject property conducted by LRL Associates Ltd. The conclusions and recommendations are based solely on site conditions encountered at the time of our inspection on May 29, 2015, supplemented by historical information and data obtained as described in this report. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Associates Ltd. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Associates Ltd. has relied in good faith on information provided by individuals as noted in this report. We assume that the information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

This report is intended for the sole use of the AECOM Canada Ltd. and their authorized agents. LRL Associates Ltd. will not be responsible for any use of the information contained within this report by any third party.

In addition, LRL Associates Ltd. will not be responsible for the real or perceived decrease in the property value, its saleability or ability to gain financing, through the reporting of factual information.

Yours truly,
LRL Associates Ltd.



Jessica Arthurs
Environmental Technician



Michael Melaney, M.Eng., P. Eng.

11 REFERENCES

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FIGURES



5430 Canotek Road
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K1J 9G2

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Website: www.LRL.ca
Fax: (613) 842-4338

PROJECT

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED LEMAY STREET EXTENSION AND MUNICIPAL
WORK YARD RECONFIGURATION
CORNWALL, ONTARIO

DRAWING TITLE

SITE LOCATION
(NOT TO SCALE)

CLIENT

AECOM CANADA

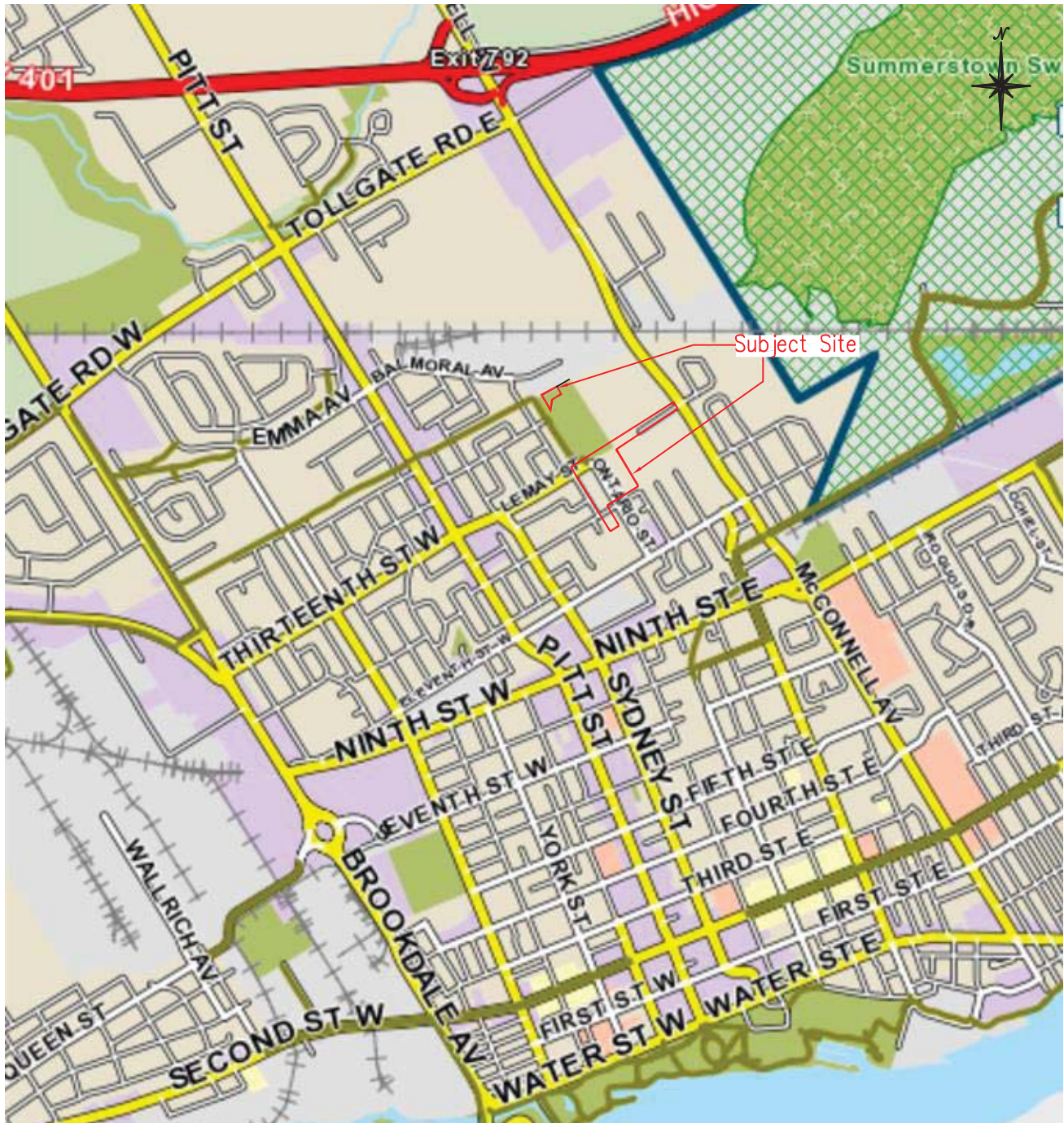
DATE

JULY 2015

PROJECT

140750

FIGURE1



LEGEND

SITE

EXTENT OF 250 M RADIUS FROM SITE

PROPERTY LINE

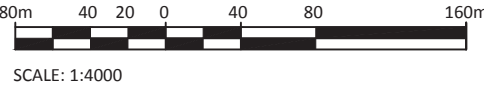
ZONING

MANUFACTURING (MFR)

RESIDENTIAL (RES)

PARKLAND

OPEN SPACE (OPC)



01	ISSUED FOR REVIEW	J.A.	06/29/15
No.	REVISIONS	BY	DATE

LRL

ASSOCIATES ASSOCIES

ENGINEERS INGENIEURS

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CLIENT			AECOM CANADA
DESIGNED BY:	DRAWN BY:	APPROVED BY:	
J.A.	J.A.	M.M.	
PROJECT			PHASE I ENVIRONMENTAL SITE ASSESSMENT PROPOSED LEMAY STREET EXTENSION AND MUNICIPAL WORK YARD RECONFIGURATION CORNWALL, ONTARIO

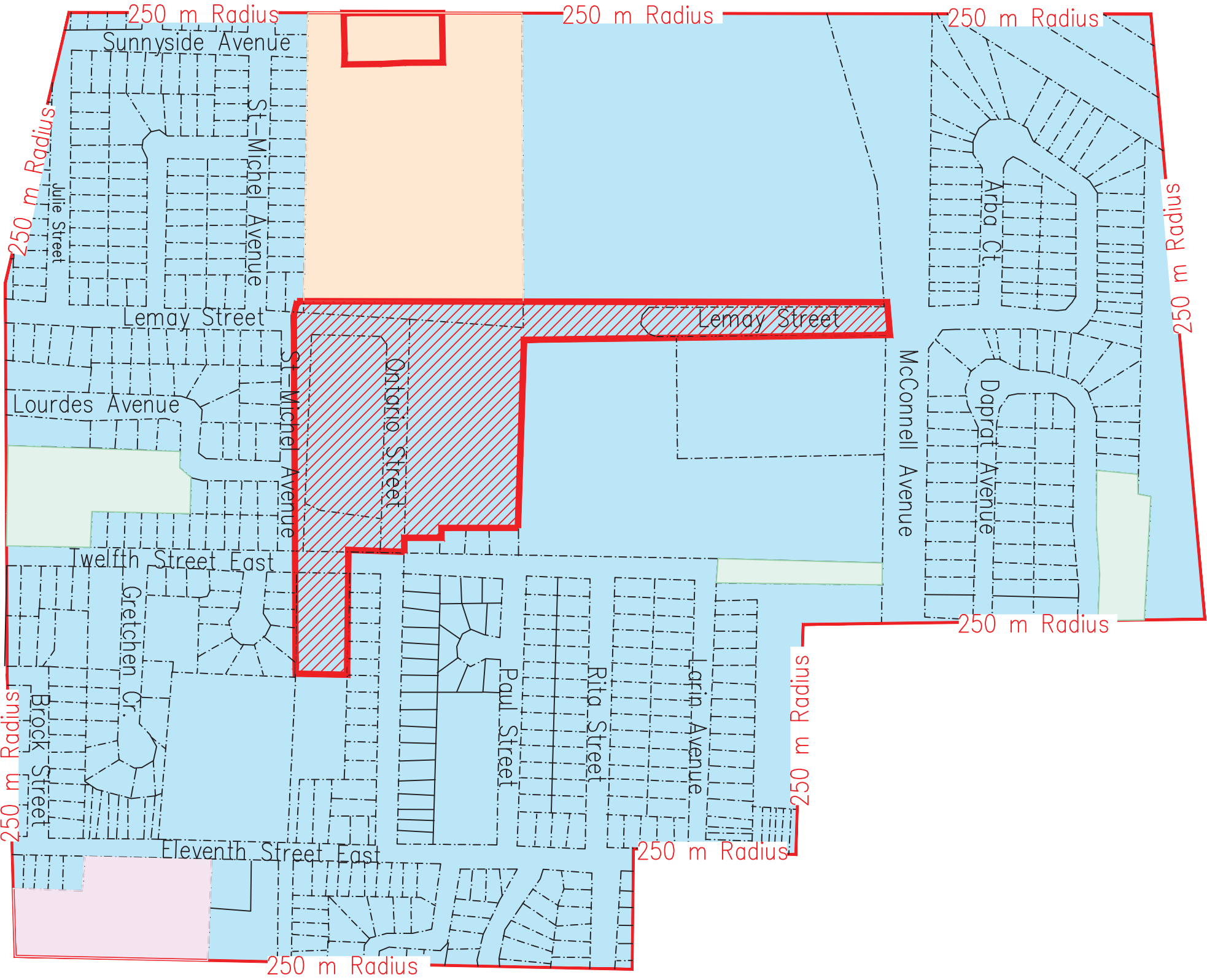
DRAWING TITLE

ZONING WITHIN 250 M OF THE SITE

PROJECT NO.
140750

DATE
JUNE 29, 2015

FIGURE2



APPENDIX A
LAND TITLE SEARCH

LAND
REGISTRY
OFFICE #52

60192-0067 (LT)

PAGE 1 OF 1
PREPARED FOR EEGoolab
ON 2015/04/13 AT 09:25:16

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 8 CON 2 CORNWALL AS IN S69018 & TC27063 EXCEPT PT 1 52R600; EXCEPT THE EASEMENT THEREIN; S/T TC37536; CORNWALL

PROPERTY REMARKS:

ESTATE/QUALIFIER:

FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:

FIRST CONVERSION FROM BOOK

PIN CREATION DATE:

2006/08/21

OWNERS' NAMES

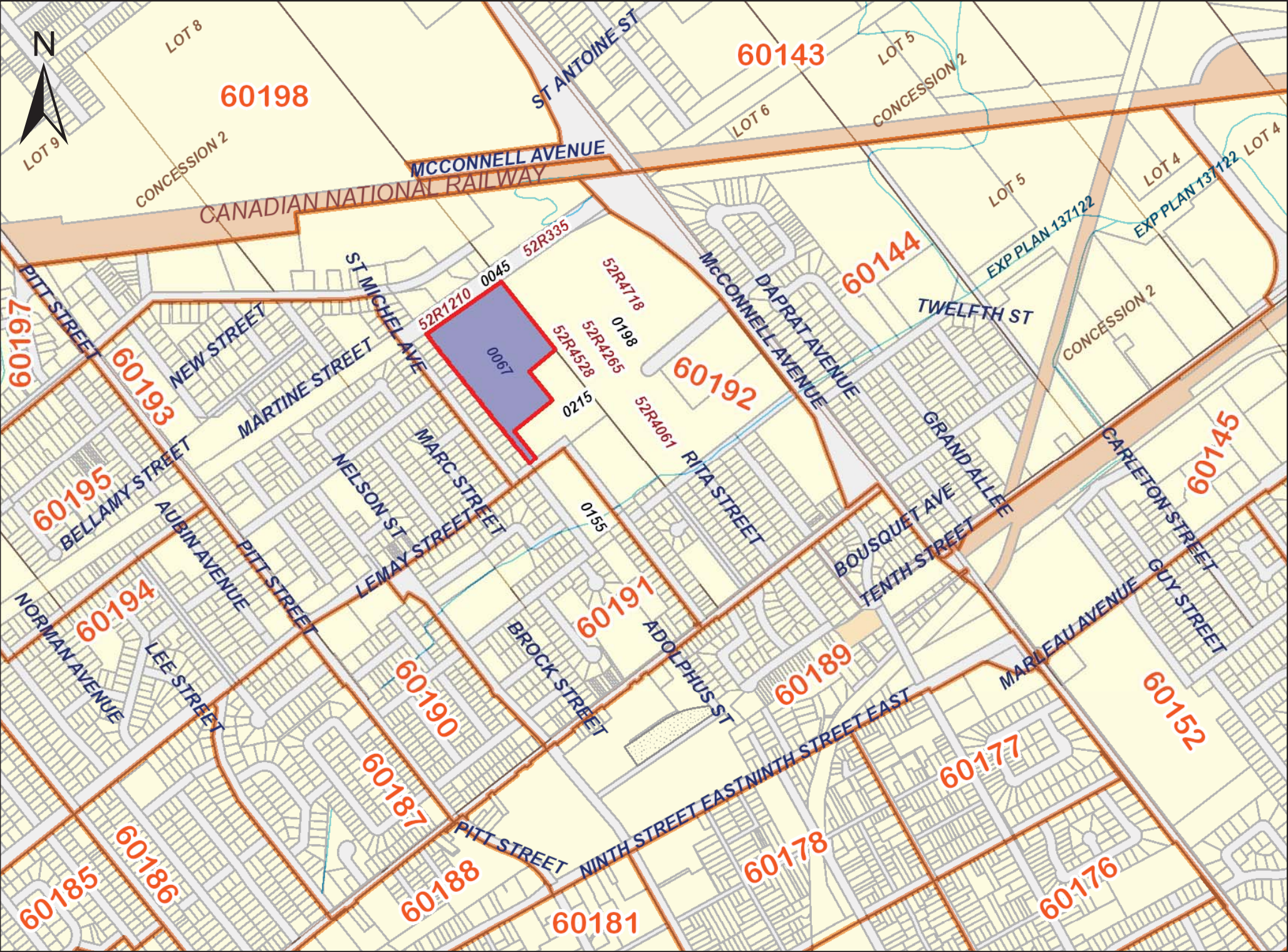
THE MUNICIPAL CORPORATION OF THE TOWN OF CORNWALL
THE CORPORATION OF THE CITY OF CORNWALL

CAPACITY SHARE

ROWN
ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *					
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF CONVERSION TO LAND TITLES: 2006/08/21 **						
TC27063	1944/04/17	TRANSFER	\$900	THE MUNICIPAL CORPORATION OF THE TOWN OF CORNWALL		C
TC37536	1952/12/19	TRANSFER EASEMENT		TRANS-NORTHERN PIPE LINE COMPANY		C
S69018	1969/10/03	TRANSFER	\$4,000	THE CORPORATION OF THE CITY OF CORNWALL		C
REMARKS: SKETCH ATTACHED.						
S237723	1992/04/08	NOTICE				C
REMARKS: MULTI						

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PROPERTY INDEX MAP
STORMONT(No. 52)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE
PROPERTY INFORMATION AS THIS MAP MAY
NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND
DOCUMENTS RECORDED IN THE LAND
REGISTRATION SYSTEM AND HAS BEEN PREPARED
FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE
RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT
REFERENCE PLANS ARE NOT ILLUSTRATED



APPENDIX B
ECOLOG ERIS REPORT



DATABASE REPORT



Project Property: *Lemay Street Extention
Lemay Street @ Ontario Street
Cornwall ON
140750*

P.O. Number *140750*

Report Type: *RSC Report - Quote*

Order #: *20150413002*

Requested by: *LRL Associates Ltd.*

Date: *April 16, 2015*

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Executive Summary

Property Information:

Project Property: *Lemay Street Extention
Lemay Street @ Ontario Street Cornwall ON*

P.O. Number: *140750*

Order Information:

Order No.: *20150413002*

Date Requested: *16/04/2015*

Requested by: *LRL Associates Ltd.*

Report Type: *RSC Report - Quote*

Additional Products:

Fire Insurance Maps *Canadian Fire Insurance Maps*

Land Title Search *Title Search*

Topographic Map *Ontario Base Map (OBM)*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AAGR	<i>Abandoned Aggregate Inventory</i>	Y	0	0	0
AGR	<i>Aggregate Inventory</i>	Y	0	0	0
AMIS	<i>Abandoned Mine Information System</i>	Y	0	0	0
ANDR	<i>Anderson's Waste Disposal Sites</i>	Y	0	2	2
AUWR	<i>Automobile Wrecking & Supplies</i>	Y	0	0	0
BORE	<i>Borehole</i>	Y	0	3	3
CA	<i>Certificates of Approval</i>	Y	1	2	3
CFOT	<i>Commercial Fuel Oil Tanks</i>	Y	0	0	0
CHEM	<i>Chemical Register</i>	Y	0	0	0
COAL	<i>Inventory of Coal Gasification Plants and Coal Tar Sites</i>	Y	0	0	0
CONV	<i>Compliance and Convictions</i>	Y	0	0	0
CPU	<i>Certificates of Property Use</i>	Y	0	0	0
DRL	<i>Drill Hole Database</i>	Y	0	0	0
EASR	<i>Environmental Activity and Sector Registry</i>	Y	0	0	0
EBR	<i>Environmental Registry</i>	Y	0	1	1
ECA	<i>Environmental Compliance Approval</i>	Y	0	0	0
EEM	<i>Environmental Effects Monitoring</i>	Y	0	0	0
EHS	<i>ERIS Historical Searches</i>	Y	0	1	1
EIIS	<i>Environmental Issues Inventory System</i>	Y	0	0	0
EXP	<i>List of TSSA Expired Facilities</i>	Y	0	0	0
FCON	<i>Federal Convictions</i>	Y	0	0	0
FCS	<i>Contaminated Sites on Federal Land</i>	Y	0	0	0
FOFT	<i>Fisheries & Oceans Fuel Tanks</i>	Y	0	0	0
FST	<i>Fuel Storage Tank</i>	Y	3	0	3
FSTH	<i>Fuel Storage Tank - Historic</i>	Y	2	0	2
GEN	<i>Ontario Regulation 347 Waste Generators Summary</i>	Y	12	3	15
HINC	<i>TSSA Historic Incidents</i>	Y	0	3	3
IAFT	<i>Indian & Northern Affairs Fuel Tanks</i>	Y	0	0	0
INC	<i>TSSA Incidents</i>	Y	0	0	0
LIMO	<i>Landfill Inventory Management Ontario</i>	Y	0	0	0
MINE	<i>Canadian Mine Locations</i>	Y	0	0	0
MNR	<i>Mineral Occurrences</i>	Y	0	0	0
NATE	<i>National Analysis of Trends in Emergencies System (NATES)</i>	Y	0	0	0
NCPL	<i>Non-Compliance Reports</i>	Y	0	0	0
NDFT	<i>National Defence & Canadian Forces Fuel Tanks</i>	Y	0	0	0
NDSP	<i>National Defence & Canadian Forces Spills</i>	Y	0	0	0
NDWD	<i>National Defence & Canadian Forces Waste Disposal Sites</i>	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	1	0	1
OGW	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	1	1
PINC	TSSA Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	1	0	1
PTTW	Permit to Take Water	Y	0	0	0
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	1	1
SPL	Ontario Spills	Y	1	5	6
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	1	1
WWIS	Water Well Information System	Y	0	2	2
Total:			21	25	46

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
2	CA	The Corporation of the City of Cornwall	1225 Ontario St Cornwall ON K6H 4E1	-/0.0	59.88	16
2	FST	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	16
2	FST	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	16
2	FST	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	17
2	FSTH	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	17
2	FSTH	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	17
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	1225 ONTARIO STREET CITY WORKSHOP CORNWALL ON K6H 4E1	-/0.0	59.88	18
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	18
2	GEN	CORNWALL, CORP. OF THE CITY OF	CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	-/0.0	59.88	19
2	GEN	CORNWALL, CORP OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	19
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON	-/0.0	59.88	20
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	20
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	20
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	20
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	21
2	GEN	CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	21

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist m</i>	<i>Elev diff m</i>	<i>Page Number</i>
<u>2</u>	GEN	CORNWALL, CORPORATION OF THE CITY OF	CITY WORKSHOP 1225 ONTARIO STREET CORNWALL ON K6H 4E1	-/0.0	59.88	<u>21</u>
<u>2</u>	GEN	CORNWALL, CORP. OF THE CITY OF 09-143	CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	-/0.0	59.88	<u>22</u>
<u>2</u>	NPRI	CITY OF CORNWALL	1225 ONTARIO Street CORNWALL ON K6H4E1	-/0.0	59.88	<u>23</u>
<u>2</u>	PRT	CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	-/0.0	59.88	<u>24</u>
<u>2</u>	SPL	The Corporation of the City of Cornwall	1225 Ontario Street Cornwall ON K6H 4E1	-/0.0	59.88	<u>24</u>

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist m	Elev diff m	Page Number
1	WWIS		lot 7 con 2 CORNWELL ON	SE/1.2	59.88	24
3	WWIS		CORNWALL ON	WNW/1.1	59.88	25
4	ANDR	Ontario & Lemay Dump OP	Cornwall ON K6	NNW/74.6	59.88	25
5	ANDR	Ontario & Lemay Dump (official)	Cornwall ON K6	NW/70.8	59.88	26
6	WDSH		8 2 CORNWALL ON	WNW/81.3	59.88	26
7	HINC		12 Leduc Circle CORNWALL ON K6H 4E3	SSE/105.6	59.88	26
8	HINC		1126 LARIN AVENUE CORNWALL ON K6H 4C6	ESE/160.3	59.88	27
9	PES	JEAN-PIERRE LABELLE O/A P T ENVIRONMENTAL SERVICES	1131 LARIN AVE CORNWALL ON K6H 4C7	E/201.6	59.78	27
10	HINC		1356 MARC STREET CORNWALL ON K6H 3M3	W/161.1	59.88	28
10	SPL	Residence<UNOFFICIAL>	1356 Marc St Cornwall ON K6H 3M3	W/161.1	59.88	28
11	EHS		1107 Gretchen Court Cornwall ON K6H 6T2	SSW/123.0	59.88	28
12	CA	CORNWALL CITY - TENDER NO. 6-90	MCCONNELL AVE./LEMAY ST. CORNWALL CITY ON	NE/7.9	58.88	28
12	CA	CORNWALL MUNICIPAL NON-PROFIT HSG. CORP.	MCCONNELL AVE./LEMAY AVE. CORNWALL CITY ON	NE/7.9	58.88	29
13	SPL	Cornwall Street Railway Light and Power Company Limited	1336 Marc St Cornwall ON K6H 3M3	W/195.8	59.88	29
14	SPL		11th and Cooper St Cornwall ON	SE/247.0	59.88	29
15	BORE		ON	NNE/189.2	59.82	30

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist m</i>	<i>Elev diff m</i>	<i>Page Number</i>
<u>16</u>	GEN	MR. RUDY LADOUCEUR	1123 McCONNELL AVENUE CORNWALL ON K6H 4N2	E/281.9	58.88	<u>30</u>
<u>16</u>	SPL	S. 21	1123 McConnell Ave. (corner of 12th and McConnell) Cornwall ON	E/281.9	58.88	<u>31</u>
<u>17</u>	BORE		ON	N/254.4	59.88	<u>31</u>
<u>18</u>	SPL	DELANEY BUS LINES	11TH ST./AMELIA ST. MOTOR VEHICLE (OPERATING FLUID) CORNWALL CITY ON	S/228.7	59.88	<u>32</u>
<u>19</u>	SCT	Versus Business Forms Inc.	1065 Roy Ave Cornwall ON K6H 4C2	SSE/285.3	59.88	<u>32</u>
<u>20</u>	GEN	ESSO PETROLEUM CANADA 14-169	1020 ADOLPHUS STREET CORNWALL ON K0C 1V0	S/255.3	59.88	<u>32</u>
<u>20</u>	GEN	ESSO PETROLEUM CANADA	1020 ADOLPHUS STREET CORNWALL ON K0C 1V0	S/255.3	59.88	<u>32</u>
<u>21</u>	EBR	1675755 Ontario Inc.	125 Eleventh Street West Cornwall ON K6H 3B3	S/238.5	59.88	<u>33</u>
<u>22</u>	BORE		ON	N/299.6	59.88	<u>33</u>

Executive Summary: Summary By Data Source

ANDR - Anderson's Waste Disposal Sites

A search of the ANDR database, dated 1860s-Present has found that there are 2 ANDR site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
Ontario & Lemay Dump OP	Cornwall ON K6	74.6	<u>4</u>
Ontario & Lemay Dump (official)	Cornwall ON K6	70.8	<u>5</u>

BORE - Borehole

A search of the BORE database, dated 1875-Jul 2014 has found that there are 3 BORE site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
	ON	189.2	<u>15</u>
	ON	254.4	<u>17</u>
	ON	299.6	<u>22</u>

CA - Certificates of Approval

A search of the CA database, dated 1985-Oct 30, 2011* has found that there are 3 CA site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
The Corporation of the City of Cornwall	1225 Ontario St Cornwall ON K6H 4E1	0.0	<u>2</u>
CORNWALL MUNICIPAL NON-PROFIT HSG. CORP.	MCCONNELL AVE./LEMAY AVE. CORNWALL CITY ON	7.9	<u>12</u>
CORNWALL CITY - TENDER NO. 6-90	MCCONNELL AVE/LEMAY ST. CORNWALL CITY ON	7.9	<u>12</u>

EBR - Environmental Registry

A search of the EBR database, dated 1994-Jan 2015 has found that there are 1 EBR site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
1675755 Ontario Inc.	125 Eleventh Street West Cornwall ON K6H 3B3	238.5	<u>21</u>

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Aug 2014 has found that there are 1 EHS site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
	1107 Gretchen Court Cornwall ON K6H 6T2	123.0	<u>11</u>

FST - Fuel Storage Tank

A search of the FST database, dated 2010-Nov 2014 has found that there are 3 FST site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>

FSTH - Fuel Storage Tank - Historic

A search of the FSTH database, dated Pre-Jan 2010* has found that there are 2 FSTH site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Apr 2014 has found that there are 15 GEN site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	CITY WORKSHOP 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORP. OF THE CITY OF 09-143	CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	1225 ONTARIO STREET CITY WORKSHOP CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORP OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON	0.0	<u>2</u>
CORNWALL, CORP. OF THE CITY OF	CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
CORNWALL, CORPORATION OF THE CITY OF	PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	0.0	<u>2</u>
MR. RUDY LADOUCEUR	1123 McCONNELL AVENUE CORNWALL ON K6H 4N2	281.9	<u>16</u>
ESSO PETROLEUM CANADA	1020 ADOLPHUS STREET CORNWALL ON K0C 1V0	255.3	<u>20</u>
ESSO PETROLEUM CANADA 14-169	1020 ADOLPHUS STREET CORNWALL ON K0C 1V0	255.3	<u>20</u>

HINC - TSSA Historic Incidents

A search of the HINC database, dated 2006-June 2009* has found that there are 3 HINC site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
	12 Leduc Circle CORNWALL ON K6H 4E3	105.6	<u>7</u>
	1126 LARIN AVENUE CORNWALL ON K6H 4C6	160.3	<u>8</u>
	1356 MARC STREET CORNWALL ON K6H 3M3	161.1	<u>10</u>

NPRI - National Pollutant Release Inventory

A search of the NPRI database, dated 1993-2013 has found that there are 1 NPRI site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CITY OF CORNWALL	1225 ONTARIO Street CORNWALL ON K6H4E1	0.0	<u>2</u>

PES - Pesticide Register

A search of the PES database, dated 1988-Jun 2013 has found that there are 1 PES site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
JEAN-PIERRE LABELLE O/A P T ENVIRONMENTAL SERVICES	1131 LARIN AVE CORNWALL ON K6H 4C7	201.6	<u>9</u>

PRT - Private and Retail Fuel Storage Tanks

A search of the PRT database, dated 1989-1996* has found that there are 1 PRT site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
CITY OF CORNWALL	1225 ONTARIO ST CORNWALL ON K6H 4E1	0.0	<u>2</u>

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011 has found that there are 1 SCT site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
Versus Business Forms Inc.	1065 Roy Ave Cornwall ON K6H 4C2	285.3	<u>19</u>

SPL - Ontario Spills

A search of the SPL database, dated 1988-Feb 2014 has found that there are 6 SPL site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
The Corporation of the City of Cornwall	1225 Ontario Street Cornwall ON K6H 4E1	0.0	<u>2</u>
Residence<UNOFFICIAL>	1356 Marc St Cornwall ON K6H 3M3	161.1	<u>10</u>

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
Cornwall Street Railway Light and Power Company Limited	1336 Marc St Cornwall ON K6H 3M3	195.8	<u>13</u>
	11th and Cooper St Cornwall ON	247.0	<u>14</u>
S. 21	1123 McConnell Ave. (corner of 12th and McConnell) Cornwall ON	281.9	<u>16</u>
DELANEY BUS LINES	11TH ST./AMELIA ST. MOTOR VEHICLE (OPERATING FLUID) CORNWALL CITY ON	228.7	<u>18</u>

WDSH - Waste Disposal Sites - MOE 1991 Historical Approval Inventory

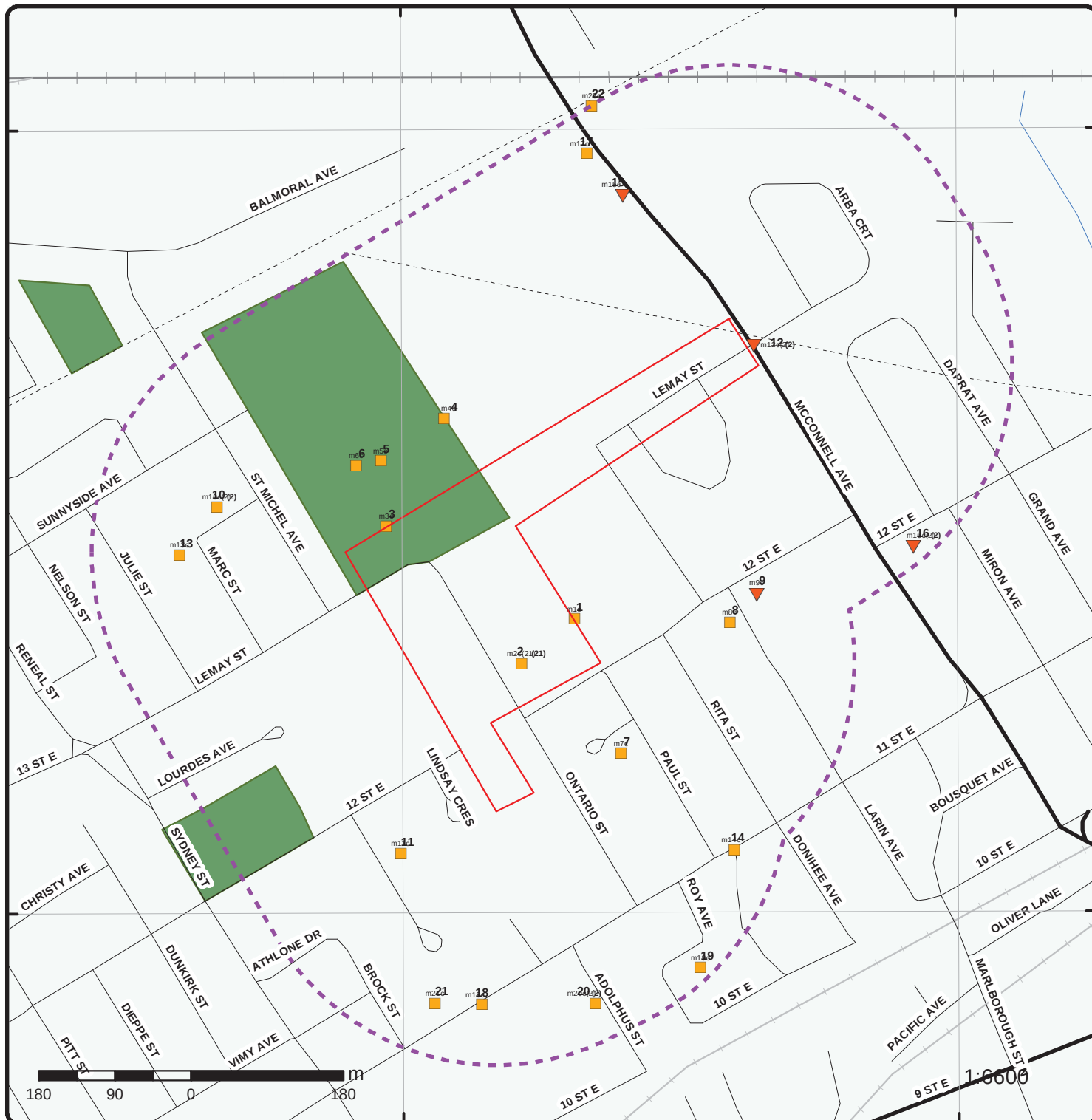
A search of the WDSH database, dated Up to Oct 1990* has found that there are 1 WDSH site(s) within approximately 0.30 kilometers of the project property.

<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
	8 2 CORNWALL ON	81.3	<u>6</u>

WWIS - Water Well Information System

A search of the WWIS database, dated 1955-Mar 2014 has found that there are 2 WWIS site(s) within approximately 0.30 kilometers of the project property.

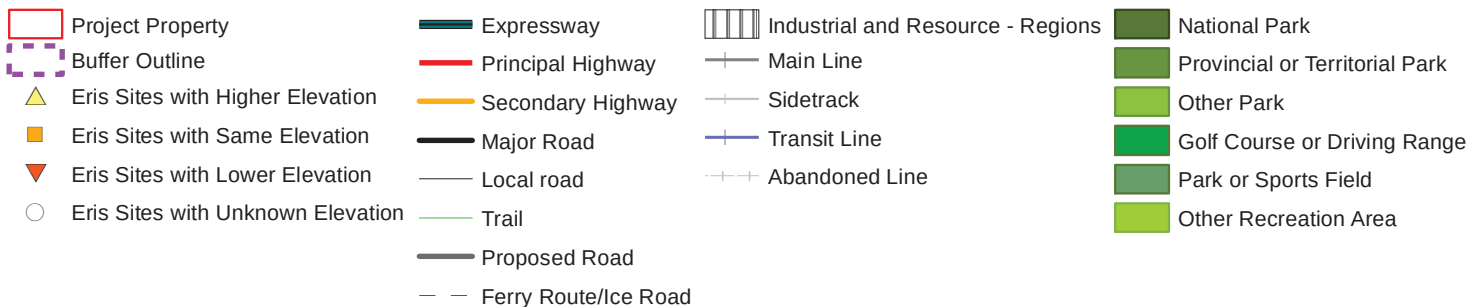
<u>Site</u>	<u>Address</u>	<u>Distance m</u>	<u>Map Key</u>
	lot 7 con 2 CORNWELL ON	1.2	<u>1</u>
	CORNWALL ON	1.1	<u>3</u>



Map

Order No: 20150413002

Address: Lemay Street @ Ontario Street, Cornwall, ON





Aerial

Order No: 20150413002

Address: Lemay Street @ Ontario Street, Cornwall, ON

Detail Report

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
2	1 of 21	-/0.0	59.9	The Corporation of the City of Cornwall 1225 Ontario St Cornwall ON K6H 4E1	CA
Certificate #: 2372-7ZNS5D Application Year: 2010 Issue Date: 1/15/2010 Approval Type: Air Status: Approved Application Type: Client Name: Client Address: Client City: Client Postal Code: Project Description: Contaminants: Emission Control:					
2	2 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	FST
Instance Number: 10703677 Cont Name: Instance Type: FS Liquid Fuel Tank Fuel Type: Gasoline Status: Active Capacity: 25000 Tank Material: Steel Corrosion Protection: Sacrificial anode Tank Type: Single Wall UST Install Year: 1987 Parent Facility Type: Fuels Safety Private Fuel Outlet - Self Serve Facility Type: FS Liquid Fuel Tank					
2	3 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	FST
Instance Number: 10703525 Cont Name: Instance Type: FS Liquid Fuel Tank Fuel Type: Diesel Status: Active Capacity: 25000 Tank Material: Steel Corrosion Protection: Sacrificial anode Tank Type: Single Wall UST Install Year: 1987					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Parent Facility Type: Facility Type:		Fuels Safety Private Fuel Outlet - Self Serve FS Liquid Fuel Tank			
2	4 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	FST
Instance Number:		10703606			
Cont Name:					
Instance Type:		FS Liquid Fuel Tank			
Fuel Type:		Gasoline			
Status:		Active			
Capacity:		25000			
Tank Material:		Steel			
Corrosion Protection:		Sacrificial anode			
Tank Type:		Single Wall UST			
Install Year:		1987			
Parent Facility Type:		Fuels Safety Private Fuel Outlet - Self Serve			
Facility Type:		FS Liquid Fuel Tank			
2	5 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	FSTH
License Issue Date:		6/4/1990			
Tank Status:		Licensed			
Tank Status As Of:		August 2007			
Operation Type:		Private Fuel Outlet			
Facility Type:		Gasoline Station - Self Serve			
--- Details ---					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Diesel			
+					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
+					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
2	6 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	FSTH
License Issue Date:		6/4/1990			
Tank Status:		Licensed			
Tank Status As Of:		December 2008			
Operation Type:		Private Fuel Outlet			

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Facility Type:		Gasoline Station - Self Serve			
--- Details ---					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Diesel			
+					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
+					
Status:		Active			
Capacity (L):		25000			
Year of Installation:		1987			
Corrosion Protection:					
Tank Fuel Type:		Liquid Fuel Single Wall UST - Gasoline			
2	7 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF 1225 ONTARIO STREET CITY WORKSHOP CORNWALL ON K6H 4E1	GEN
Generator #:		ON0324803			
Approval Yrs:		92,93,95,96,97			
SIC Code:		8373			
SIC Description:		ENVIRON. ADMIN.			
--- Details ---					
Waste Code:		145			
Waste Description:		PAINT/PIGMENT/COATING RESIDUES			
+					
Waste Code:		148			
Waste Description:		INORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		213			
Waste Description:		PETROLEUM DISTILLATES			
+					
Waste Code:		221			
Waste Description:		LIGHT FUELS			
+					
Waste Code:		242			
Waste Description:		HALOGENATED PESTICIDES			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
+					
Waste Code:		263			
Waste Description:		ORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		331			
Waste Description:		WASTE COMPRESSED GASES			
2	8 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET	GEN

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
CORNWALL ON K6H 4E1					
Generator #:	ON0324800				
Approval Yrs:	2009				
SIC Code:	485110				
SIC Description:	Urban Transit Systems				
--- Details ---					
Waste Code:	212				
Waste Description:	ALIPHATIC SOLVENTS				
+					
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				
<u>2</u>	9 of 21	-/0.0	59.9	CORNWALL, CORP. OF THE CITY OF CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	GEN
Generator #:	ON0324803				
Approval Yrs:	88,89,90				
SIC Code:	8373				
SIC Description:	ENVIRON. ADMIN.				
--- Details ---					
Waste Code:	148				
Waste Description:	INORGANIC LABORATORY CHEMICALS				
+					
Waste Code:	213				
Waste Description:	PETROLEUM DISTILLATES				
+					
Waste Code:	221				
Waste Description:	LIGHT FUELS				
+					
Waste Code:	242				
Waste Description:	HALOGENATED PESTICIDES				
+					
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				
+					
Waste Code:	263				
Waste Description:	ORGANIC LABORATORY CHEMICALS				
+					
Waste Code:	331				
Waste Description:	WASTE COMPRESSED GASES				
<u>2</u>	10 of 21	-/0.0	59.9	CORNWALL, CORP OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:	ON0324800				
Approval Yrs:	92,93,97				
SIC Code:	8371				
SIC Description:	TRANSPORTATION ADMIN				
--- Details ---					
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
2	11 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON	GEN
Generator #:		ON0324800			
Approval Yrs:		2013			
SIC Code:		485110			
SIC Description:					
--- Details ---					
Waste Code:		212			
Waste Description:		ALIPHATIC SOLVENTS			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
2	12 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:		ON0324800			
Approval Yrs:		2010			
SIC Code:		485110			
SIC Description:		Urban Transit Systems			
--- Details ---					
Waste Code:		212			
Waste Description:		ALIPHATIC SOLVENTS			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
2	13 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:		ON0324800			
Approval Yrs:		2011			
SIC Code:		485110			
SIC Description:		Urban Transit Systems			
--- Details ---					
Waste Code:		212			
Waste Description:		ALIPHATIC SOLVENTS			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
2	14 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET	GEN

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
CORNWALL ON K6H 4E1					
Generator #:	ON0324800				
Approval Yrs:	2012				
SIC Code:	485110				
SIC Description:	Urban Transit Systems				
--- Details ---					
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				
+					
Waste Code:	212				
Waste Description:	ALIPHATIC SOLVENTS				
2	15 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:	ON0324800				
Approval Yrs:	98,99,00,01,02,03,04,05,06,07,08				
SIC Code:	8371				
SIC Description:	TRANSPORTATION ADMIN.				
--- Details ---					
Waste Code:	251				
Waste Description:	OIL SKIMMINGS & SLUDGES				
+					
Waste Code:	212				
Waste Description:	ALIPHATIC SOLVENTS				
+					
Waste Code:	252				
Waste Description:	WASTE OILS & LUBRICANTS				
2	16 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF PUBLIC WORKS GARAGE 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:	ON0324800				
Approval Yrs:	As of April 2014				
SIC Code:					
SIC Description:					
--- Details ---					
Waste Code:	212				
Waste Description:	Aliphatic solvents and residues				
+					
Waste Code:	252				
Waste Description:	Waste crankcase oils and lubricants				
2	17 of 21	-/0.0	59.9	CORNWALL, CORPORATION OF THE CITY OF CITY WORKSHOP 1225 ONTARIO STREET CORNWALL ON K6H 4E1	GEN
Generator #:	ON0324803				

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Approval Yrs:		98,99,00,01,02,03,04			
SIC Code:		8373			
SIC Description:		ENVIRON. ADMIN.			
--- Details ---					
Waste Code:		145			
Waste Description:		PAINT/PIGMENT/COATING RESIDUES			
+					
Waste Code:		148			
Waste Description:		INORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		213			
Waste Description:		PETROLEUM DISTILLATES			
+					
Waste Code:		221			
Waste Description:		LIGHT FUELS			
+					
Waste Code:		242			
Waste Description:		HALOGENATED PESTICIDES			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
+					
Waste Code:		263			
Waste Description:		ORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		331			
Waste Description:		WASTE COMPRESSED GASES			
2	18 of 21	-/0.0	59.9	CORNWALL, CORP. OF THE CITY OF 143 CITY WORKSHOP 1225 ONTARIO ST. C/O 360 PITT ST (HOUSEHOLD HAZ. WASTE) CORNWALL ON K6H 4E1	09- GEN
Generator #:		ON0324803			
Approval Yrs:		94			
SIC Code:		8373			
SIC Description:		ENVIRON. ADMIN.			
--- Details ---					
Waste Code:		148			
Waste Description:		INORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		213			
Waste Description:		PETROLEUM DISTILLATES			
+					
Waste Code:		221			
Waste Description:		LIGHT FUELS			
+					
Waste Code:		242			
Waste Description:		HALOGENATED PESTICIDES			
+					
Waste Code:		252			
Waste Description:		WASTE OILS & LUBRICANTS			
+					
Waste Code:		263			
Waste Description:		ORGANIC LABORATORY CHEMICALS			
+					
Waste Code:		331			
Waste Description:		WASTE COMPRESSED GASES			

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
2	19 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO Street CORNWALL ON K6H4E1	NPRI
NPRI #:		8800000002			
Year:		2004			
Longitude:					
Latitude:					
--- Details ---					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		PM - Total Particulate Matter			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		PM10 - Particulate Matter <= 10 Microns			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		Nitrous oxide			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		Nitrogen oxides (expressed as NO2)			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		Carbon dioxide			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		PM2.5 - Particulate Matter <= 2.5 Microns			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		Carbon monoxide			
+					
Air:					
Water:					
Land:					
Units:		tonnes			
Substances Released:		Sulphur dioxide			
+					
Air:					
Water:					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Land: Units: tonnes Substances Released: HFC-134a Hydrofluorocarbon + Air: Water: Land: Units: tonnes Substances Released: Methane + Air: Water: Land: Units: tonnes Substances Released: Volatile Organic Compounds (VOCs)					
2	20 of 21	-/0.0	59.9	CITY OF CORNWALL 1225 ONTARIO ST CORNWALL ON K6H 4E1	PRT
Location ID: 3553 Type: private Expiry Date: Capacity (L): 75000.00 Licence #: 0001007472					
2	21 of 21	-/0.0	59.9	The Corporation of the City of Cornwall 1225 Ontario Street Cornwall ON K6H 4E1	SPL
Ref No.: 7014-5VVQBR Incident Dt: 2/5/2004 MOE Reported Dt: 2/5/2004 Contaminant Name: HYDRAULIC OIL Contaminant Quantity: Incident Summary: City of Cornwall: 19L Hyd. Oil to Catchbasin Incident Cause: Discharge Or Bypass To A Watercourse Incident Reason: Unknown - Reason not determined Nature of Impact: Surface Water Pollution Receiving Medium: Water Environmental Impact: Not Anticipated					
1	1 of 1	SE/1.2	59.9	lot 7 con 2 CORNWELL ON	WWIS
Well ID: 7044387 Concession: 02 County: STORMONT Easting Nad83: 521207 Zone: 18 Primary Water Use: Sec. Water Use: Pump Rate: Flow Rate: Specific Capacity: Construction Method: Other Method Elevation (m): 57.43					
Lot: 007 Concession Name: Municipality: CORNWALL CITY Northing Nad83: 4987036 Utm Reliability: margin of error : 10 - 30 m Construction Date: 02-MAR-07 Well Depth: 4.5 m Static Water Level: Clear/Cloudy: Final Well Status: Observation Wells Flowing (y/n): Elevation Reliability:					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Depth to Bedrock: Water Type:				Overburden/Bedrock: Casing Material:	Overburden Not stated
--- Details ---					
Thickness:	BROWN			Original Depth:	.7 m
Material Colour:	SAND, SILTY			Material:	.7 m
+					
Thickness:	GREY			Original Depth:	4.5 m
Material Colour:	TILL, SAND, SILTY			Material:	.8 m
+					
Thickness:	BROWN			Original Depth:	1.5 m
Material Colour:	TILL, SAND			Material:	.8 m
+					
Thickness:	BROWN			Original Depth:	2.3 m
Material Colour:	TILL, SANDY			Material:	.8 m
+					
Thickness:	BROWN			Original Depth:	3.7 m
Material Colour:	CLAY, FINE GRAVEL, WATER-BEARING			Material:	1.4 m

<u>3</u>	1 of 1	WNW/1.1	59.9	CORNWALL ON	WWIS
Well ID:	5804811			Lot:	
Concession:				Concession Name:	
County:	STORMONT			Municipality:	CORNWALL CITY
Easting Nad83:	520985			Northing Nad83:	4987145
Zone:	18			Utm Reliability:	margin of error : 100 m - 300 m
Primary Water Use:	Not Used			Construction Date:	26-FEB-04
Sec. Water Use:				Well Depth:	
Pump Rate:				Static Water Level:	
Flow Rate:				Clear/Cloudy:	
Specific Capacity:				Final Well Status:	Observation Wells
Construction Method:	Not Known			Flowing (y/n):	
Elevation (m):	62.69			Elevation Reliability:	
Depth to Bedrock:				Overburden/Bedrock:	No formation data
Water Type:	FRESH, GAS			Casing Material:	Not stated

<u>4</u>	1 of 1	NNW/74.6	59.9	Ontario & Lemay Dump OP	ANDR
Cornwall ON K6					
Legal Description:	Cornwall Con 2 Lots 7-8 pt				
Location Description:	E of line of Ontario St, N of line of Lemay St, SW of Transcanada Pipeline, pt of Optimists Park				
Municipality:	Cornwall City				
Current Municipality:	Cornwall City				
RM:	Stormont, Dundas & Glengarry Counties				
Facility:	Dump				
Date Active:	1960?				
Date Begun:					
Date Complete:					
Area (Ha):	4.5				
Landfill Type:					
Group Name:					
Operated By:					
Serial:	MOEE 1024 OP				

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
NTS: Diameter (m): Waste Type: UTM X Nad 27: UTM Y Nad 27: UTM Zone:		31G02 225 521025 4987050 18			
5	1 of 1	NW/70.8	59.9	Ontario & Lemay Dump (official) Cornwall ON K6	ANDR
Legal Description: Location Description: Municipality: Current Municipality: RM: Facility: Date Active: Date Begun: Date Complete: Area (Ha): Landfill Type: Group Name: Operated By: Serial: NTS: Diameter (m): Waste Type: UTM X Nad 27: UTM Y Nad 27: UTM Zone:		Cornwall Con 2 Lot 8 Ontario St Cornwall City Cornwall City Stormont, Dundas & Glengarry Counties Dump 1960 1960 MOEE 1024 31G02 520950 4987000 18			
6	1 of 1	WNW/81.3	59.9	8 2 CORNWALL ON	WDSH
Site No.: Region: County: Concession: Lot: Easting: Northing: Zone: Date Closed: Status: Classification: %CommercialWste: %DomesticWste Rec: %LiquidWste Rec: %HazardousWste Rec: %Non-haz.Wste Rec: %Sewage/Sludge Rec: %Other Wste Rec:		X1024 SOUTHEAST STORMONT 2 8 520950 4987000 18 1960 CLOSED A5 - POTENTIAL HUMAN IMPACT-URBAN MUNICIPAL/DOMESTIC WASTE - CLOSED 10-20 YRS n/a n/a n/a n/a n/a n/a n/a			
7	1 of 1	SSE/105.6	59.9	12 Leduc Circle CORNWALL ON K6H 4E3	HINC

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
External File Num:		FS INC 0707-03990			
Date of Occurrence:		7/26/2007			
Fuel Occurrence Type:		Leak			
Fuel Type Involved:		Fuel Oil			
Status Desc:		Completed - Causal Analysis(End)			
Job Type Desc:		Incident/Near-Miss Occurrence (FS)			
Oper. Type Involved:		Private Dwelling			
Service Interruptions:		Yes			
Property Damage:		Yes			
Fuel Life Cycle Stage:		Utilization			
Root Cause:		Root Cause: Equipment/Material/Component:Yes Procedures:No Maintenance:No Design:Yes Training:No Management:No Human Factors:No			
Reported Details:					
Fuel Category:		Liquid Fuel			
Occurrence Type:		Incident			
Affiliation:		Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)			
County Name:		Stormont, Dundas and Glengarry			
Approx. Quant. Rel:					
Nearby body of water:					
Enter Drainage Syst.:					
Approx. Quant. Unit:					
Environmental Impact:					

<u>8</u>	1 of 1	ESE/160.3	59.9	1126 LARIN AVENUE CORNWALL ON K6H 4C6	HINC
External File Num:		FS INC 0809-05602			
Date of Occurrence:		9/18/2008			
Fuel Occurrence Type:		Pipeline Strike			
Fuel Type Involved:		Natural Gas			
Status Desc:		Completed - Causal Analysis(End)			
Job Type Desc:		Incident/Near-Miss Occurrence (FS)			
Oper. Type Involved:		Construction Site (pipeline strike)			
Service Interruptions:		No			
Property Damage:		Yes			
Fuel Life Cycle Stage:		Transmission, Distribution and Transportation			
Root Cause:		Root Cause: Equipment/Material/Component:No Procedures:Yes Maintenance:No Design:Yes Training:No Management:Yes Human Factors:Yes			
Reported Details:					
Fuel Category:		Gaseous Fuel			
Occurrence Type:		Incident			
Affiliation:		Industry Stakeholder (Licensee/Registration/Certificate Holder, Facility Owner, etc.)			
County Name:		Stormont, Dundas and Glengarry			
Approx. Quant. Rel:					
Nearby body of water:					
Enter Drainage Syst.:					
Approx. Quant. Unit:					
Environmental Impact:					

<u>9</u>	1 of 1	E/201.6	59.8	JEAN-PIERRE LABELLE O/A P T ENVIRONMENTAL SERVICES 1131 LARIN AVE CORNWALL ON K6H 4C7	PES
Licence No.:					
Licence Type:					

28 erisinfo.com | EcoLog ERIS Ltd. Order #: 20150413002
 Lemay Street Extention Lemay Street @ Ontario Street Cornwall ON

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Certificate #: Application Year: Issue Date: Approval Type: Status: Application Type: Client Name: Client Address: Client City: Client Postal Code: Project Description: Contaminants: Emission Control:					
12	2 of 2	NE/7.9	58.9	CORNWALL MUNICIPAL NON-PROFIT HSG. CORP. MCCONNELL AVE./LEMAY AVE. CORNWALL CITY ON	CA
Certificate #: Application Year: Issue Date: Approval Type: Status: Application Type: Client Name: Client Address: Client City: Client Postal Code: Project Description: Contaminants: Emission Control:					
13	1 of 1	W/195.8	59.9	Cornwall Street Railway Light and Power Company Limited 1336 Marc St Cornwall ON K6H 3M3	SPL
Ref No.: Incident Dt: MOE Reported Dt: Contaminant Name: Contaminant Quantity: Incident Summary: Incident Cause: Incident Reason: Nature of Impact: Receiving Medium: Environmental Impact:					
14	1 of 1	SE/247.0	59.9	11th and Cooper St Cornwall ON	SPL
Ref No.: Incident Dt: MOE Reported Dt:					

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Contaminant Name:		MINERAL OIL			
Contaminant Quantity:		110 L			
Incident Summary:		MVA: 110 L of non PCB min Oil to front lawn			
Incident Cause:		Other Transport Accident			
Incident Reason:		Spill			
Nature of Impact:		Vegetation Damage			
Receiving Medium:					
Environmental Impact:		Possible			
15	1 of 1	NNE/189.2	59.8	ON	BORE
Borehole ID:		880653		Type:	Borehole
Use:		Geotechnical/Geological Investigation		Status:	Decommissioned
Drill Method:		Diamond Drill		UTM Zone:	18
Easting:		521265		Northing:	4987535
Location Accuracy:				Orig. Ground Elev m:	57.7
Elev. Reliability Note:				DEM Ground Elev m:	63.5
Total Depth m:		12.5		Primary Name:	
Township:		CORNWALL		Concession:	CON 2
Lot:		LOT 7		Municipality:	
Completion Date:		17-FEB-1964		Static Water Level:	-999.9
Primary Water Use:				Sec. Water Use:	
--- Details ---					
Stratum ID:		8002617		Top Depth(m):	0.0
Bottom Depth(m):		0.3		Stratum Desc:	TOPSOIL
+					
Stratum ID:		8002618		Top Depth(m):	0.3
Bottom Depth(m):		1.4		Stratum Desc:	LOOSE BROWN SAND
+					
Stratum ID:		8002619		Top Depth(m):	1.4
Bottom Depth(m):		4.0		Stratum Desc:	UNIFORM GREY CLAY
+					
Stratum ID:		8002620		Top Depth(m):	4.0
Bottom Depth(m):		6.4		Stratum Desc:	STIFF VARVED GREY SILT AND CLAY
+					
Stratum ID:		8002621		Top Depth(m):	6.4
Bottom Depth(m):		7.9		Stratum Desc:	MEDIUM DENSE GREY SAND WITH SILT, OCCASIONAL COBBLE, TILL TEXTURE
+					
Stratum ID:		8002622		Top Depth(m):	7.9
Bottom Depth(m):		10.7		Stratum Desc:	VERY DENSE GREY SAND WITH SILT, OCCASIONAL COBBLE, TILL TEXTURE
+					
Stratum ID:		8002623		Top Depth(m):	10.7
Bottom Depth(m):		12.5		Stratum Desc:	BLACK LIMESTONE BEDROCK
16	1 of 2	E/281.9	58.9	MR. RUDY LADOUCEUR 1123 McCONNELL AVENUE CORNWALL ON K6H 4N2	GEN

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
Generator #:		ON5924455			
Approval Yrs:		03,04			
SIC Code:					
SIC Description:					
16	2 of 2	E/281.9	58.9	S. 21 1123 McConnell Ave. (corner of 12th and McConnell) Cornwall ON	SPL
Ref No.:		8583-5L2PND			
Incident Dt:		3/27/2003			
MOE Reported Dt:		3/27/2003			
Contaminant Name:		FURNACE OIL			
Contaminant Quantity:		other - see incident description			
Incident Summary:		Res-strong oil odour, soil contamination fr tank			
Incident Cause:		Tank (Above Ground) Leak			
Incident Reason:		Equipment Failure - Malfunction of system components			
Nature of Impact:		Groundwater Pollution; Soil Contamination			
Receiving Medium:		Land & Water			
Environmental Impact:		Possible			
17	1 of 1	N/254.4	59.9	ON	BORE
Borehole ID:		880652		Type:	Borehole
Use:		Geotechnical/Geological Investigation		Status:	Decommissioned
Drill Method:		Diamond Drill		UTM Zone:	18
Easting:		521222		Northing:	4987586
Location Accuracy:				Orig. Ground Elev m:	58.4
Elev. Reliability Note:				DEM Ground Elev m:	66.7
Total Depth m:		12		Primary Name:	
Township:		CORNWALL		Concession:	CON 2
Lot:		LOT 7		Municipality:	
Completion Date:		18-FEB-1964		Static Water Level:	-999.9
Primary Water Use:				Sec. Water Use:	
--- Details ---					
Stratum ID:		8002610		Top Depth(m):	0.0
Bottom Depth(m):		0.3		Stratum Desc:	TOPSOIL
+					
Stratum ID:		8002611		Top Depth(m):	0.3
Bottom Depth(m):		2.1		Stratum Desc:	BROWN FINE SAND
+					
Stratum ID:		8002612		Top Depth(m):	2.1
Bottom Depth(m):		3.7		Stratum Desc:	STIFF UNIFORM GREY CLAY
+					
Stratum ID:		8002613		Top Depth(m):	3.7
Bottom Depth(m):		5.9		Stratum Desc:	STIFF GREY VARVED CLAY AND SILT
+					
Stratum ID:		8002614		Top Depth(m):	5.9
Bottom Depth(m):		8.2		Stratum Desc:	MEDIUM DENSE GREY SAND WITH SILT, OCCASIONAL COBBLE, TILL TEXTURE

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
+					
Stratum ID:	8002615			Top Depth(m):	8.2
Bottom Depth(m):	10.3			Stratum Desc:	VERY DENSE GREY SAND WITH SILT, OCCASIONAL COBBLE, TILL TEXTURE
+					
Stratum ID:	8002616			Top Depth(m):	10.3
Bottom Depth(m):	12.0			Stratum Desc:	BLACK LIMESTONE BEDROCK
18	1 of 1	S/228.7	59.9	DELANEY BUS LINES 11TH ST./AMELIA ST. MOTOR VEHICLE (OPERATING FLUID) CORNWALL CITY ON	SPL
Ref No.:	85341				
Incident Dt:	//				
MOE Reported Dt:	5/10/1993				
Contaminant Name:					
Contaminant Quantity:					
Incident Summary:	DELANEY BUS LINES -220L DIESEL TO GROUND, DAMAGEDBUS FUEL LINE, VANDALISM.				
Incident Cause:	PIPE/HOSE LEAK				
Incident Reason:	VANDALISM				
Nature of Impact:	Soil contamination				
Receiving Medium:	LAND				
Environmental Impact:	CONFIRMED				
19	1 of 1	SSE/285.3	59.9	Versus Business Forms Inc. 1065 Roy Ave Cornwall ON K6H 4C2	SCT
Established:	01-SEP-91				
Plant Size (ft²):					
Employment:					
--- Details ---					
SIC/NAICS Code:	419120				
Description:	Wholesale Trade Agents and Brokers				
20	1 of 2	S/255.3	59.9	ESSO PETROLEUM CANADA 1020 ADOLPHUS STREET CORNWALL ON K0C 1V0	14-169 GEN
Generator #:	ON0552351				
Approval Yrs:	92,93,94,95,96,97,98				
SIC Code:	5111				
SIC Description:	PETROLEUM PROD., WH.				
--- Details ---					
Waste Code:	221				
Waste Description:	LIGHT FUELS				
+					
Waste Code:	251				
Waste Description:	OIL SKIMMINGS & SLUDGES				
20	2 of 2	S/255.3	59.9	ESSO PETROLEUM CANADA 1020 ADOLPHUS STREET	GEN

Map Key	Number of Records	Direction/ Distance m	Elevation m	Site	DB
CORNWALL ON K0C 1V0					
Generator #:		ON0552351			
Approval Yrs:		86,87,88,89			
SIC Code:		5111			
SIC Description:		PETROLEUM PROD., WH.			
--- Details ---					
Waste Code:		221			
Waste Description:		LIGHT FUELS			
+					
Waste Code:		251			
Waste Description:		OIL SKIMMINGS & SLUDGES			
21	1 of 1	S/238.5	59.9	1675755 Ontario Inc. 125 Eleventh Street West Cornwall ON K6H 3B3	EBR
Year:		2007			
EBR Registry No.:		010-0078			
Ministry Ref. No.:		4782-6Z8RK5			
Type:		Instrument Proposal			
Instrument Type:		Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9			
Proposal Date:		March 14, 2007			
Location:		125 Eleventh Street West Cornwall United Counties of Stormont, Dundas and Glengarry K6H 3B3.CITY OF CORNWALL			
Proponent Address:		125 Eleventh Street West Cornwall Ontario Canada K6J 3B3			
22	1 of 1	N/299.6	59.9	ON	BORE
Borehole ID:	880647			Type:	Borehole
Use:	Geotechnical/Geological Investigation			Status:	Decommissioned
Drill Method:	Diamond Drill			UTM Zone:	18
Easting:	521227			Northing:	4987642
Location Accuracy:				Orig. Ground Elev m:	57.9
Elev. Reliability Note:				DEM Ground Elev m:	64
Total Depth m:	11.4			Primary Name:	
Township:	CORNWALL			Concession:	CON 2
Lot:	LOT 7			Municipality:	
Completion Date:	16-DEC-1963			Static Water Level:	-999.9
Primary Water Use:				Sec. Water Use:	
--- Details ---					
Stratum ID:	8002579			Top Depth(m):	0.0
Bottom Depth(m):	1.6			Stratum Desc:	BROWN FINE SAND
+					
Stratum ID:	8002580			Top Depth(m):	1.6
Bottom Depth(m):	3.0			Stratum Desc:	GREY CLAY WITH FREQUENT BLACK NODULES
+					
Stratum ID:	8002581			Top Depth(m):	3.0
Bottom Depth(m):	4.6			Stratum Desc:	MEDIUM GREY VARVED SILT AND CLAY
+					
Stratum ID:	8002582			Top Depth(m):	4.6

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance m</i>	<i>Elevation m</i>	<i>Site</i>	<i>DB</i>
<i>Bottom Depth(m):</i>	9.8			<i>Stratum Desc:</i>	MEDIUM DENSE SILT WITH SAND, SOME GRAVEL, TILL TEXTURE, OCCASIONAL COBBLE
+					
<i>Stratum ID:</i>	8002583			<i>Top Depth(m):</i>	9.8
<i>Bottom Depth(m):</i>	11.4			<i>Stratum Desc:</i>	BLACK LIMESTONE BEDROCK

Unplottable Summary

DB	Company Name/Site Name	Address	City	Postal
CA	BENAK LIMITED	LOURDES AVE., PT.LOT 8/CONC.2	CORNWALL CITY ON	
CA	CORNWALL CITY	MCCONNELL AVE.	CORNWALL CITY ON	
CA	CORNWALL CITY	MCCONNELL AVE.	CORNWALL CITY ON	
CA	JAI AGGARWAL	19TH ST./DONIHEE AVE., BLOCK I	CORNWALL CITY ON	
CA	DUNDAS MANOR LIMITED - J.ALGUIRE DEVELOP	LEMAY ST/BALMORAL AVE/MCCONNEL	CORNWALL CITY ON	
CA	BENAK LIMITED	LOURDES AVE., PT.LOT 8, CONC.2	CORNWALL CITY ON	
CA	CORNWALL MUNICIPAL NON-PROFIT HSG. CORP.	LEMAY AVENUE	CORNWALL CITY ON	
CA	The Corporation of the City of Cornwall	Larin St	Cornwall ON	
CA	JAI AGGARWAL	19TH ST./DONIHEE AVE., BLOCK I	CORNWALL CITY ON	
CA	Daprat Bros Limited	West Half of Lot 6, Concession 2	Cornwall ON	
CA	CORNWALL CITY	ELEVENTH STREET RECONSTRUCTION	CORNWALL CITY ON	
CA	CORNWALL CITY	ELEVENTH STREET RECONSTRUCTION	CORNWALL CITY ON	
EBR	Cornwall and District Contracting Limite	PT.LOT 9	City of Cornwall ON	
SPL		S 21 (1)(f) of FIPPA	Cornwall ON	
SPL	ESSO PETROLEUM		CORNWALL CITY ON	
SPL	Redacted S 21(1)(f) of FIPPA		South Stormont ON	
SPL	HGC Management<UNOFFICIAL>	Between 11th and 12th streets	Cornwall ON	
SPL	S. 21(1)(f)	Domtar Pulp and Paper Products Inc. Dryden Mill	Cornwall ON	

SPL	ONTARIO HYDRO	LOT 7, CON II	SOUTH STORMONT TOWNSHIP ON
SPL	ONTARIO HYDRO	LOT 7, CON.2 ON TOWNSHIP PROPERTY.	SOUTH STORMONT TOWNSHIP ON
SPL	Malyon Excavation Ltd.	McConnell Avenue, from Tollgate Road north to South Branch Road	Cornwall ON
SPL	ESSO PETROLEUM CANADA	SERVICE STATION 5 TH WHEEL-TRUCK STOP	CORNWALL CITY ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON
WWIS			ON

Unplottable Report

Site: **BENAK LIMITED**
LOURDES AVE., PT.LOT 8/CONC.2 CORNWALL CITY ON

Database:
CA

Certificate #: 3-0911-95-
Application Year: 95
Issue Date: 7/28/1995
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **CORNWALL CITY**
MCCONNELL AVE. CORNWALL CITY ON

Database:
CA

Certificate #: 3-0865-89-
Application Year: 89
Issue Date: 7/5/1989
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **CORNWALL CITY**
MCCONNELL AVE. CORNWALL CITY ON

Database:
CA

Certificate #: 7-0755-89-
Application Year: 89
Issue Date: 7/5/1989
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: JAI AGGARWAL
19TH ST./DONIHEE AVE., BLOCK I CORNWALL CITY ON

Database:
CA

Certificate #: 3-1040-96-
Application Year: 96
Issue Date: 9/30/1996
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: DUNDAS MANOR LIMITED - J.ALGUIRE DEVELOP
LEMAY ST/BALMORAL AVE/MCCONNEL CORNWALL CITY ON

Database:
CA

Certificate #: 7-1202-90-
Application Year: 90
Issue Date: 1/29/1991
Approval Type: Municipal water
Status: Approved in 1991
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: BENAK LIMITED
LOURDES AVE., PT.LOT 8, CONC.2 CORNWALL CITY ON

Database:
CA

Certificate #: 7-0654-95-
Application Year: 95
Issue Date: 7/28/1995
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: CORNWALL MUNICIPAL NON-PROFIT HSG. CORP.
LEMAY AVENUE CORNWALL CITY ON

Database:
CA

Certificate #: 7-0079-91-
Application Year: 91
Issue Date: 3/11/1991

Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **The Corporation of the City of Cornwall**
Larin St Cornwall ON

Database:
CA

Certificate #: 0195-7HYJVT
Application Year: 2008
Issue Date: 9/2/2008
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **JAI AGGARWAL**
19TH ST./DONIHEE AVE., BLOCK I CORNWALL CITY ON

Database:
CA

Certificate #: 7-0871-96-
Application Year: 96
Issue Date: 9/30/1996
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **Daprat Bros Limited**
West Half of Lot 6, Concession 2 Cornwall ON

Database:
CA

Certificate #: 7461-7TCRK8
Application Year: 2009
Issue Date: 7/3/2009
Approval Type: Municipal and Private Sewage Works
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:

Project Description:
Contaminants:
Emission Control:

Site: **CORNWALL CITY**
ELEVENTH STREET RECONSTRUCTION CORNWALL CITY ON

Database:
CA

Certificate #: 7-0004-99-
Application Year: 99
Issue Date: 1/28/1999
Approval Type: Municipal water
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **CORNWALL CITY**
ELEVENTH STREET RECONSTRUCTION CORNWALL CITY ON

Database:
CA

Certificate #: 3-0008-99-
Application Year: 99
Issue Date: 1/28/1999
Approval Type: Municipal sewage
Status: Approved
Application Type:
Client Name:
Client Address:
Client City:
Client Postal Code:
Project Description:
Contaminants:
Emission Control:

Site: **Cornwall and District Contracting Limite**
PT.LOT 9 City of Cornwall ON

Database:
EBR

Year: 1996
EBR Registry No.: IA6E0894
Ministry Ref. No.:
Type: Instrument
Instrument Type: EPA s. 9 - Approval for discharge into the natural environment other than water (i.e. Air)
Proposal Date: 6/6/96
Location: City of Cornwall
Proponent Address: Cornwall and District Contracting LimiteP.O. Box 227, St. Andrew's West,CORNWALL, K0C 2A0, K0C 2A0

Site:
S 21 (1)(f) of FIPPA Cornwall ON

Database:
SPL

Ref No.: 6885-82CRV7
Incident Dt:

MOE Reported Dt: 2/4/2010
Contaminant Name: FURNACE OIL
Contaminant Quantity: 900 L
Incident Summary: TSSA/Private Residence-900 L Furnace Oil to Ground
Incident Cause:
Incident Reason:
Nature of Impact:
Receiving Medium:
Environmental Impact: Not Anticipated

Site: **ESSO PETROLEUM
CORNWALL CITY ON**

Database:
SPL

Ref No.: 39831
Incident Dt: 8/24/1990
MOE Reported Dt: 8/24/1990
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO SERVICE STATION - 5 L OF GASOLINE TO PAVEMENT.
Incident Cause: CONTAINER OVERFLOW
Incident Reason: ERROR
Nature of Impact:
Receiving Medium: LAND
Environmental Impact: NOT ANTICIPATED

Site: **Redacted S 21(1)(f) of FIPPA
South Stormont ON**

Database:
SPL

Ref No.: 1640-8X4FJ4
Incident Dt: 12-AUG-12
MOE Reported Dt: 12-AUG-12
Contaminant Name: TRANSMISSION OIL
Contaminant Quantity: 12 L
Incident Summary: 10-12 L trans. or oil pan fluid from car to culvert
Incident Cause: Other Discharges
Incident Reason: Spill
Nature of Impact: Surface Water Pollution
Receiving Medium:
Environmental Impact: Confirmed

Site: **HGC Management<UNOFFICIAL>
Between 11th and 12th streets Cornwall ON**

Database:
SPL

Ref No.: 3271-76ZN4L
Incident Dt:
MOE Reported Dt: 9/13/2007
Contaminant Name: OIL (PETROLEUM BASED, NOT SPECIFIED)
Contaminant Quantity: 5 L
Incident Summary: Small amt oil to road. Cleaned up.
Incident Cause: Container Leak (Fuel Tank Barrels)
Incident Reason: Other - Reason not otherwise defined
Nature of Impact: Soil Contamination
Receiving Medium: Land
Environmental Impact: Not Anticipated

Site: **S. 21(1)(f)**

Database:
SPL

Domtar Pulp and Paper Products Inc. Dryden Mill Cornwall ON

Ref No.: 3858-76VR8P
Incident Dt:
MOE Reported Dt: 9/9/2007
Contaminant Name: FUEL OIL
Contaminant Quantity: 0 other - see incident description
Incident Summary: TSSA: u/k quantity fuel oil to grd, basement, no offsite
Incident Cause: Valve / Fitting Leak Or Failure
Incident Reason: Unknown - Reason not determined
Nature of Impact: Soil Contamination
Receiving Medium: Land
Environmental Impact: Possible

Site: **ONTARIO HYDRO**
LOT 7, CON II SOUTH STORMONT TOWNSHIP ON

Database:
SPL

Ref No.: 38130
Incident Dt: 7/23/1990
MOE Reported Dt: 7/23/1990
Contaminant Name:
Contaminant Quantity:
Incident Summary: ONTARIO HYDRO: 2L MINERALOIL TO GROUND FROM TRANSFORMER
Incident Cause: COOLING SYSTEM LEAK
Incident Reason: DAMAGE BY MOVING EQUIPMENT
Nature of Impact: Soil contamination
Receiving Medium: LAND
Environmental Impact: CONFIRMED

Site: **ONTARIO HYDRO**
LOT 7, CON.2 ON TOWNSHIP PROPERTY. SOUTH STORMONT TOWNSHIP ON

Database:
SPL

Ref No.: 80343
Incident Dt: 12/29/1992
MOE Reported Dt: 12/29/1992
Contaminant Name:
Contaminant Quantity:
Incident Summary: ONTARIO HYDRO- BOOM TRUCK 12 L HYDRAULIC OIL CLEANUP IN PROGRESS.
Incident Cause: PIPE/HOSE LEAK
Incident Reason: WELD/SEAM FAILURE
Nature of Impact: Soil contamination
Receiving Medium: LAND
Environmental Impact: POSSIBLE

Site: **Malyon Excavation Ltd.**
McConnell Avenue, from Tollgate Road north to South Branch Road Cornwall ON

Database:
SPL

Ref No.: 1706-7THVPS
Incident Dt:
MOE Reported Dt: 6/30/2009
Contaminant Name: HYDRAULIC OIL
Contaminant Quantity: 0 other - see incident description
Incident Summary: Malyon Excavation, hydraulic oil to road, sand applied, clog
Incident Cause: Pipe Or Hose Leak
Incident Reason: Equipment Failure
Nature of Impact: Other Impact(s)
Receiving Medium:
Environmental Impact: Not Anticipated

Site: ESSO PETROLEUM CANADA
SERVICE STATION 5 TH WHEEL-TRUCK STOP CORNWALL CITY ON

Database:
SPL

Ref No.: 53432
Incident Dt: 7/3/1991
MOE Reported Dt: 7/3/1991
Contaminant Name:
Contaminant Quantity:
Incident Summary: ESSO PETROLEUM - 14 L. SPILL OF DIESEL FUEL FROM AN UNDERGROUND TANK.
Incident Cause: UNDERGROUND TANK LEAK
Incident Reason: EQUIPMENT FAILURE
Nature of Impact: Soil contamination
Receiving Medium: LAND
Environmental Impact: CONFIRMED

Site:
ON

Database:
WWIS

Well ID:	5802272	Lot:	008
Concession:		Concession	
		Name:	
County:	STORMONT	Municipality:	CORNWALL TOWNSHIP
Easting Nad83:		Northing	
		Nad83:	
Zone:	18	Utm Reliability:	unknown UTM
Primary Water Use:	Domestic	Construction	24-OCT-79
		Date:	
Sec. Water Use:		Well Depth:	64 ft
Pump Rate:	10 GPM	Static Water	24 ft
		Level:	
Flow Rate:		Clear/Cloudy:	CLOUDY
Specific Capacity:		Final Well	Water Supply
		Status:	
Construction Method:	Cable Tool	Flowing (y/n):	N
Elevation (m):		Elevation	
		Reliability:	
Depth to Bedrock:		Overburden/Bedrock:	Overburden
		Casing	
Water Type:	FRESH	Material:	FRESH, MINERAL

--- Details ---

Thickness:	GREY	Original Depth:	56 ft
Material Colour:	HARDPAN, BOULDERS, HARD	Material:	56 ft
+			
Thickness:	GREY	Original Depth:	58 ft
Material Colour:	HARDPAN	Material:	2 ft
+			
Thickness:	WHITE	Original Depth:	64 ft
Material Colour:	HARDPAN	Material:	6 ft

Site:
ON

Database:
WWIS

Well ID:	5802537	Lot:	007
Concession:		Concession	
		Name:	
County:	STORMONT	Municipality:	CORNWALL TOWNSHIP

Easting Nad83:

Zone: 18
 Primary Water Use: Domestic

Sec. Water Use:
 Pump Rate: 3 GPM

Flow Rate:
 Specific Capacity:

Construction Method: Cable Tool
 Elevation (m):

Depth to Bedrock: 27

Water Type: FRESH

--- Details ---

Thickness: GREY
 Material Colour: TILL, HARD
 +
 Thickness: GREY
 Material Colour: LIMESTONE, HARD

Northing

Nad83:
 Utm Reliability: unknown UTM
 Construction: 16-DEC-83
 Date:
 Well Depth: 81 ft
 Static Water: 25 ft
 Level:
 Clear/Cloudy: CLOUDY
 Final Well: Water Supply
 Status:
 Flowing (y/n): N
 Elevation:
 Reliability:
 Overburden/Bedrock: Bedrock
 Casing: FRESH, MINERIAL
 Material:

Original Depth: 27 ft
 Material: 27 ft

Original Depth: 81 ft
 Material: 54 ft

Site:**ON****Database:**
WWIS

Well ID: 5803388
 Concession:
 County: STORMONT
 Easting Nad83:

Zone: 18
 Primary Water Use: Domestic

Sec. Water Use:
 Pump Rate: 20 GPM

Flow Rate:
 Specific Capacity:

Construction Method: Cable Tool
 Elevation (m):

Depth to Bedrock: 35

Water Type: FRESH

Lot: 007
 Concession
 Name:
 Municipality: CORNWALL CITY
 Northing
 Nad83:
 Utm Reliability: unknown UTM
 Construction: 12-MAR-91
 Date:
 Well Depth: 55 ft
 Static Water: 5 ft
 Level:
 Clear/Cloudy: CLOUDY
 Final Well: Water Supply
 Status:
 Flowing (y/n): N
 Elevation:
 Reliability:
 Overburden/Bedrock: Bedrock
 Casing: FRESH, MINERIAL
 Material:

Original Depth: 5 ft
 Material: 5 ft

Original Depth: 30 ft
 Material: 25 ft

Original Depth: 55 ft
 Material: 20 ft

Original Depth: 35 ft

--- Details ---

Thickness: RED
 Material Colour: CLAY, SOFT
 +
 Thickness: BLUE
 Material Colour: CLAY, SOFT
 +
 Thickness: GREY
 Material Colour: ROCK, HARD
 +
 Thickness: GREY

Material Colour: GRAVEL, BOULDERS, HARD

Material: 5 ft

Site:
ON

Database:
WWIS

Well ID: 5803740
Concession:

Lot: 007
Concession

County: STORMONT
Easting Nad83:

Name:
Municipality: CORNWALL TOWNSHIP
Northing
Nad83:

Zone: 18
Primary Water Use: Domestic

Utm Reliability: unknown UTM
Construction 11-AUG-93

Sec. Water Use:
Pump Rate: 7 GPM

Date:
Well Depth: 80 ft
Static Water 25 ft

Flow Rate:
Specific Capacity:

Level:
Clear/Cloudy: CLOUDY
Final Well Water Supply

Construction Method: Cable Tool
Elevation (m):

Status:
Flowing (y/n): N
Elevation

Depth to Bedrock: 27

Reliability:
Overburden/Bedrock: Bedrock

Water Type: Not stated

Casing FRESH, MINERAL
Material:

--- Details ---

Thickness: BROWN
Material Colour: TILL, HARD

Original Depth: 9 ft
Material: 9 ft

+
Thickness: GREY
Material Colour: TILL, HARD

Original Depth: 27 ft
Material: 18 ft

+
Thickness: GREY
Material Colour: LIMESTONE, HARD

Original Depth: 80 ft
Material: 53 ft

Site:
ON

Database:
WWIS

Well ID: 5802972
Concession:

Lot: 008
Concession

County: STORMONT
Easting Nad83:

Name:
Municipality: CORNWALL TOWNSHIP
Northing
Nad83:

Zone: 18
Primary Water Use: Domestic

Utm Reliability: unknown UTM
Construction 02-JUN-88

Sec. Water Use:
Pump Rate: 3 GPM

Date:
Well Depth: 144 ft
Static Water

Flow Rate:
Specific Capacity:

Level:
Clear/Cloudy: Water Supply
Final Well

Construction Method: Rotary (Air)
Elevation (m):

Status:
Flowing (y/n): N
Elevation

Depth to Bedrock: 39

Reliability:
Overburden/Bedrock: Bedrock

Water Type: FRESH

Casing FRESH
Material:

--- Details ---

Thickness:	GREY	Original Depth:	144 ft
Material Colour:	LIMESTONE	Material:	105 ft
+			
Thickness:	BROWN	Original Depth:	5 ft
Material Colour:	SAND, CLAY	Material:	5 ft
+			
Thickness:	BROWN	Original Depth:	39 ft
Material Colour:	HARDPAN, STONES, GRAVEL	Material:	34 ft

Site: ON **Database:** WWIS

Well ID:	5802722	Lot:	006
Concession:		Concession	
		Name:	
County:	STORMONT	Municipality:	CORNWALL TOWNSHIP
Easting Nad83:		Northing	
		Nad83:	
Zone:	18	Utm Reliability:	unknown UTM
Primary Water Use:	Domestic	Construction	29-JUL-86
		Date:	
Sec. Water Use:		Well Depth:	51 ft
Pump Rate:	5 GPM	Static Water	20 ft
		Level:	
Flow Rate:		Clear/Cloudy:	CLOUDY
Specific Capacity:		Final Well	Water Supply
		Status:	
Construction Method:	Cable Tool	Flowing (y/n):	N
Elevation (m):		Elevation	
		Reliability:	
Depth to Bedrock:	31	Overburden/Bedrock:	Bedrock
		Casing	FRESH, MINERIAL
Water Type:	FRESH	Material:	

--- Details ---

Thickness:	GREY	Original Depth:	31 ft
Material Colour:	GRAVEL	Material:	3 ft
+			
Thickness:	BROWN	Original Depth:	15 ft
Material Colour:	HARDPAN	Material:	15 ft
+			
Thickness:	GREY	Original Depth:	28 ft
Material Colour:	HARDPAN, BOULDERS	Material:	13 ft
+			
Thickness:	GREY	Original Depth:	51 ft
Material Colour:	LIMESTONE	Material:	20 ft

Site: ON **Database:** WWIS

Well ID:	5802952	Lot:	007
Concession:		Concession	
		Name:	
County:	STORMONT	Municipality:	CORNWALL TOWNSHIP
Easting Nad83:		Northing	
		Nad83:	
Zone:	18	Utm Reliability:	unknown UTM
Primary Water Use:	Domestic	Construction	03-MAY-88
		Date:	

Sec. Water Use:		Well Depth:	52 ft
Pump Rate:	35 GPM	Static Water	0 ft
Flow Rate:		Level:	
Specific Capacity:		Clear/Cloudy:	CLOUDY
Construction Method:	Cable Tool	Final Well	Water Supply
Elevation (m):		Status:	
Depth to Bedrock:	42	Flowing (y/n):	N
Water Type:	FRESH	Elevation	
		Reliability:	
		Overburden/Bedrock:	Bedrock
		Casing	FRESH, MINERIAL
		Material:	

--- Details ---

Thickness:	BLUE	Original Depth:	15 ft
Material Colour:	CLAY, SOFT	Material:	10 ft
+			
Thickness:	BROWN	Original Depth:	5 ft
Material Colour:	TILL, HARD	Material:	5 ft
+			
Thickness:	BLUE	Original Depth:	42 ft
Material Colour:	CLAY, SOFT	Material:	27 ft
+			
Thickness:	GREY	Original Depth:	52 ft
Material Colour:	ROCK, HARD	Material:	10 ft

Site:	ON	Database:	WWIS
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Well ID:	5804327	Lot:	006
Concession:		Concession	
County:	STORMONT	Name:	
Easting Nad83:		Municipality:	CORNWALL TOWNSHIP
Zone:	18	Northing	
Primary Water Use:	Domestic	Nad83:	
Sec. Water Use:		Utm Reliability:	unknown UTM
Pump Rate:	12 GPM	Construction	27-MAY-99
Flow Rate:		Date:	
Specific Capacity:		Well Depth:	65 ft
Construction Method:	Rotary (Air)	Static Water	20 ft
Elevation (m):		Level:	
Depth to Bedrock:	40	Clear/Cloudy:	CLOUDY
Water Type:	FRESH	Final Well	Water Supply
		Status:	
		Flowing (y/n):	N
		Elevation	
		Reliability:	
		Overburden/Bedrock:	Bedrock
		Casing	FRESH, MINERIAL
		Material:	

--- Details ---

Thickness:	GREY	Original Depth:	35 ft
Material Colour:	TILL, BOULDERS	Material:	25 ft
+			
Thickness:	GREY	Original Depth:	40 ft
Material Colour:	GRAVEL, BOULDERS, LOOSE	Material:	5 ft
+			
Thickness:	BROWN	Original Depth:	10 ft
Material Colour:	TILL, BOULDERS	Material:	10 ft
+			

Thickness: GREY
Material Colour: LIMESTONE, SHALE, LAYERED

Original Depth: 65 ft
Material: 25 ft

Site:
ON

Database:
WWIS

Well ID: 5802992
Concession:

Lot: 006
Concession

County: STORMONT
Easting Nad83:

Name:
Municipality: CORNWALL TOWNSHIP
Northing
Nad83:

Zone: 18
Primary Water Use: Domestic

Utm Reliability: unknown UTM
Construction Date: 03-SEP-84

Sec. Water Use:
Pump Rate: 10 GPM

Well Depth: 56 ft
Static Water Level:

Flow Rate:
Specific Capacity:

Clear/Cloudy: CLOUDY
Final Well Water Supply

Construction Method: Rotary (Air)
Elevation (m):

Status:
Flowing (y/n): N

Depth to Bedrock: 37

Elevation
Reliability:
Overburden/Bedrock: Bedrock

Water Type: FRESH

Casing Material: FRESH, MINERIAL

--- Details ---

Thickness: BROWN
Material Colour: TILL, BOULDERS, HARD

Original Depth: 12 ft
Material: 12 ft

+
Thickness: GREY
Material Colour: TILL, HARD

Original Depth: 37 ft
Material: 25 ft

+
Thickness: GREY
Material Colour: ROCK, HARD

Original Depth: 56 ft
Material: 19 ft

Site:
ON

Database:
WWIS

Well ID: 5804384
Concession:

Lot: 008
Concession

County: STORMONT
Easting Nad83:

Name:
Municipality: CORNWALL TOWNSHIP
Northing
Nad83:

Zone: 18
Primary Water Use: Domestic

Utm Reliability: unknown UTM
Construction Date: 17-NOV-99

Sec. Water Use:
Pump Rate: 2 GPM

Well Depth: 102 ft
Static Water Level:

Flow Rate:
Specific Capacity:

Clear/Cloudy: CLOUDY
Final Well Water Supply

Construction Method: Rotary (Air)
Elevation (m):

Status:
Flowing (y/n): N

Depth to Bedrock: 33

Elevation
Reliability:
Overburden/Bedrock: Bedrock

Water Type: FRESH

Casing

Material:

--- Details ---

Thickness: GREY
Material Colour: TILL, HARD
+
Thickness: GREY
Material Colour: LIMESTONE, LAYERED
+
Thickness: BROWN
Material Colour: GRAVEL, BOULDERS, LOOSE

Original Depth: 33 ft
Material: 25 ft

Original Depth: 102 ft
Material: 69 ft

Original Depth: 8 ft
Material: 8 ft

Site:

ON

Database:
WWIS

Well ID: 5804442
Concession:

Lot: 009
Concession CON

County: STORMONT
Easting Nad83:

Name:
Municipality: CORNWALL TOWNSHIP
Northing
Nad83:

Zone: 18
Primary Water Use: Domestic

Utm Reliability: unknown UTM
Construction 18-AUG-00

Sec. Water Use:
Pump Rate: 8 GPM

Date:
Well Depth: 63 ft
Static Water 20 ft

Flow Rate:
Specific Capacity:

Level:
Clear/Cloudy: CLOUDY
Final Well Water Supply

Construction Method: Rotary (Air)
Elevation (m):

Status:
Flowing (y/n): N
Elevation

Depth to Bedrock: 30

Reliability:
Overburden/Bedrock: Bedrock

Water Type: FRESH

Casing FRESH, MINERIAL
Material:

--- Details ---

Thickness: BROWN
Material Colour: TILL, BOULDERS, DENSE
+
Thickness: GREY
Material Colour: TILL, BOULDERS, DENSE
+
Thickness: GREY
Material Colour: LIMESTONE, ROCK, LAYERED

Original Depth: 10 ft
Material: 10 ft

Original Depth: 30 ft
Material: 20 ft

Original Depth: 63 ft
Material: 33 ft

Appendix: Database Descriptions

Ecolog Environmental Risk Information Services Ltd can search the following databases. The extent of Historical information varies with each database and current information is determined by what is publicly available to Ecolog ERIS at the time of update. **Note:** Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.

Abandoned Aggregate Inventory:

Provincial [AAGR](#)

The MAAP Program maintains a database of all abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory:

Provincial [AGR](#)

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Aug 2012

Abandoned Mine Information System:

Provincial [AMIS](#)

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Jan 2014

Anderson's Waste Disposal Sites:

Private [ANDR](#)

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies:

Private [AUWR](#)

This database provides an inventory of all known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 2001-Jul 2014

Borehole:Provincial [BORE](#)

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2014

Certificates of Approval:Provincial [CA](#)

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

*Government Publication Date: 1985-Oct 30, 2011**

Commercial Fuel Oil Tanks:Provincial [CFOT](#)

Since May 2002, Ontario developed a new act where it became mandatory for fuel oil tanks to be registered with Technical Standards & Safety Authority (TSSA). This data would include all commercial underground fuel oil tanks in Ontario with fields such as location, registration number, tank material, age of tank and tank size.

Government Publication Date: 1948-2014

Chemical Register:Private [CHEM](#)

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1992, 1999-Jul 2014

Inventory of Coal Gasification Plants and Coal Tar Sites:Provincial [COAL](#)

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

*Government Publication Date: Apr 1987 and Nov 1988**

Compliance and Convictions:Provincial [CONV](#)

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Feb 2014

Certificates of Property Use:Provincial [CPU](#)

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Jan 2015

Drill Hole Database:Provincial [DRL](#)

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886-Jan 2014

Environmental Activity and Sector Registry:Provincial [EASR](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 31 2011-Mar 2015

Environmental Registry:Provincial [EBR](#)

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994-Jan 2015

Environmental Compliance Approval:Provincial [ECA](#)

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For CofA's prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 31, 2011-Mar 2015

Environmental Effects Monitoring:Federal [EEM](#)

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

*Government Publication Date: 1992-2007**

ERIS Historical Searches:Private [EHS](#)

EcoLog ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Aug 2014

Environmental Issues Inventory System:

Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

*Government Publication Date: 1992-2001**

List of TSSA Expired Facilities:

Provincial EXP

This is a list of all expired facilities that fall under the TSSA (TSSA Act & Safety Regulations), including the six regulations that exist under the Fuels Safety Division. It will include facilities such as private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. These tanks have been removed and automatically fall under the expired facilities inventory held by TSSA.

Government Publication Date: Current to Nov 2014

Federal Convictions:

Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

*Government Publication Date: 1988-Jun 2007**

Contaminated Sites on Federal Land:

Federal FCS

The Federal Contaminated Sites Inventory includes information on all known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: June 2000-Jan 2015

Fisheries & Oceans Fuel Tanks:

Federal FOFT

Fisheries & Oceans Canada maintains an inventory of all aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sept 2003

Fuel Storage Tank:

Provincial FST

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

Government Publication Date: 2010-Nov 2014

Fuel Storage Tank - Historic:

Provincial FSTH

The Technical Standards & Safety Authority (TSSA), under the Technical Standards & Safety Act of 2000 maintains a database of registered private and retail fuel storage tanks in Ontario with fields such as location, tank status, license date, tank type, tank capacity, fuel type, installation year and facility type.

*Government Publication Date: Pre-Jan 2010**

Ontario Regulation 347 Waste Generators Summary:

Provincial

GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

*Government Publication Date: 1986-Apr 2014***TSSA Historic Incidents:**

Provincial

HINC

This database will cover all incidences recorded by TSSA with their older system, before they moved to their new management system. TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. The TSSA works to protect the public, the environment and property from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from pipelines, diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

*Government Publication Date: 2006-June 2009****Indian & Northern Affairs Fuel Tanks:**

Federal

IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of all aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

*Government Publication Date: 1950-Aug 2003****TSSA Incidents:**

Provincial

INC

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires and explosions. This database will include spills and leaks from diesel, fuel oil, gasoline, natural gas, propane and hydrogen recorded by the TSSA.

*Government Publication Date: June 2009-2014***Landfill Inventory Management Ontario:**

Provincial

LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: 2012

Canadian Mine Locations:

Private

[MINE](#)

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

*Government Publication Date: 1998-2009**

Mineral Occurrences:

Provincial

[MNR](#)

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the planimetric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Apr 2013

National Analysis of Trends in Emergencies System (NATES):

Federal

[NATE](#)

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

*Government Publication Date: 1974-1994**

Non-Compliance Reports:

Provincial

[NCPL](#)

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: 1994-2012

National Defence & Canadian Forces Fuel Tanks:

Federal

[NDFT](#)

The Department of National Defence and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

*Government Publication Date: Up to May 2001**

National Defence & Canadian Forces Spills:

Federal

[NDSP](#)

The Department of National Defence and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Aug 2010

National Defence & Canadian Forces Waste Disposal Sites:

Federal

[NDWD](#)

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

*Government Publication Date: 2001-Apr 2007**

National Environmental Emergencies System (NEES):

Federal

NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for all previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

*Government Publication Date: 1974-2003****National PCB Inventory:**

Federal

NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. All federal out-of-service PCB containing equipment and all PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

*Government Publication Date: 1988-2008****National Pollutant Release Inventory:**

Federal

NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

*Government Publication Date: 1993-2013***Oil and Gas Wells:**

Private

OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

*Government Publication Date: 1988-Mar 2015***Ontario Oil and Gas Wells:**

Provincial

OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, well cap date, licence no., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

*Government Publication Date: 1800-2013***Inventory of PCB Storage Sites:**

Provincial

OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004

Orders:Provincial [ORD](#)

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Jan 2015

Canadian Pulp and Paper:Private [PAP](#)

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009

Parks Canada Fuel Storage Tanks:Federal [PCFT](#)

Canadian Heritage maintains an inventory of all known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

*Government Publication Date: 1920-Jan 2005**

Pesticide Register:Provincial [PES](#)

The Ontario Ministry of Environment maintains a database of all manufacturers and vendors of registered pesticides.

Government Publication Date: 1988-Jun 2013

TSSA Pipeline Incidents:Provincial [PINC](#)

TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. This database will include spills, strike and leaks from recorded by the TSSA.

Government Publication Date: June 2009-2014

Private and Retail Fuel Storage Tanks:Provincial [PRT](#)

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

*Government Publication Date: 1989-1996**

Permit to Take Water:Provincial [PTTW](#)

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Jan 2015

Ontario Regulation 347 Waste Receivers Summary:Provincial [REC](#)

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-2013

Record of Site Condition:

Provincial

RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.

RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Mar 2015

Retail Fuel Storage Tanks:

Private

RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jul 2014

Scott's Manufacturing Directory:

Private

SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011

Ontario Spills:

Provincial

SPL

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Feb 2014

Wastewater Discharger Registration Database:

Provincial

SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-2011

Anderson's Storage Tanks:

Private

TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

*Government Publication Date: 1915-1953**

Transport Canada Fuel Storage Tanks:

Federal

TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Mar 2007

TSSA Variances for Abandonment of Underground Storage Tanks:

Provincial

[VAR](#)

The TSSA, Under the Liquid Fuels Handling Code and the Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, you may apply to seek a variance from this code requirement. This is a list of all variances granted for abandoned tanks.

Government Publication Date: Current to Nov 2014

Waste Disposal Sites - MOE CA Inventory:

Provincial

[WDS](#)

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: 1970-Mar 2015

Waste Disposal Sites - MOE 1991 Historical Approval Inventory:

Provincial

[WDSH](#)

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

*Government Publication Date: Up to Oct 1990**

Water Well Information System:

Provincial

[WWIS](#)

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: 1955-Mar 2014

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX C
Aerial Photograph



5430 Canotek Road
Ottawa, Ontario
K1J 9G2

Tel: (613) 842-3434
(877) 632-5664
Website: www.LRL.ca
Fax: (613) 842-4338

PROJECT

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED LEMAY STREET EXTENSION AND MUNICIPAL
WORK YARD RECONFIGURATION
CORNWALL, ONTARIO

DRAWING TITLE

AERIAL PHOTOGRAPH A10245-158
1946

CLIENT

AECOM CANADA

DATE

JULY 2015

PROJECT

140750

AP1





5430 Canotek Road
Ottawa, Ontario
K1J 9G2

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(877) 632-5664
Website: www.LRL.ca
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PROJECT

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED LEMAY STREET EXTENSION AND MUNICIPAL
WORK YARD RECONFIGURATION
CORNWALL, ONTARIO

DRAWING TITLE

AERIAL PHOTOGRAPH A25283-110
1979

CLIENT

AECOM CANADA

DATE

JULY 2015

PROJECT

140750

AP2





5430 Canotek Road
Ottawa, Ontario
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Fax: (613) 842-4338

PROJECT

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED LEMAY STREET EXTENSION AND MUNICIPAL
WORK YARD RECONFIGURATION
CORNWALL, ONTARIO

DRAWING TITLE

AERIAL PHOTOGRAPH A28135-80
1994

CLIENT

AECOM CANADA

DATE

JULY 2015

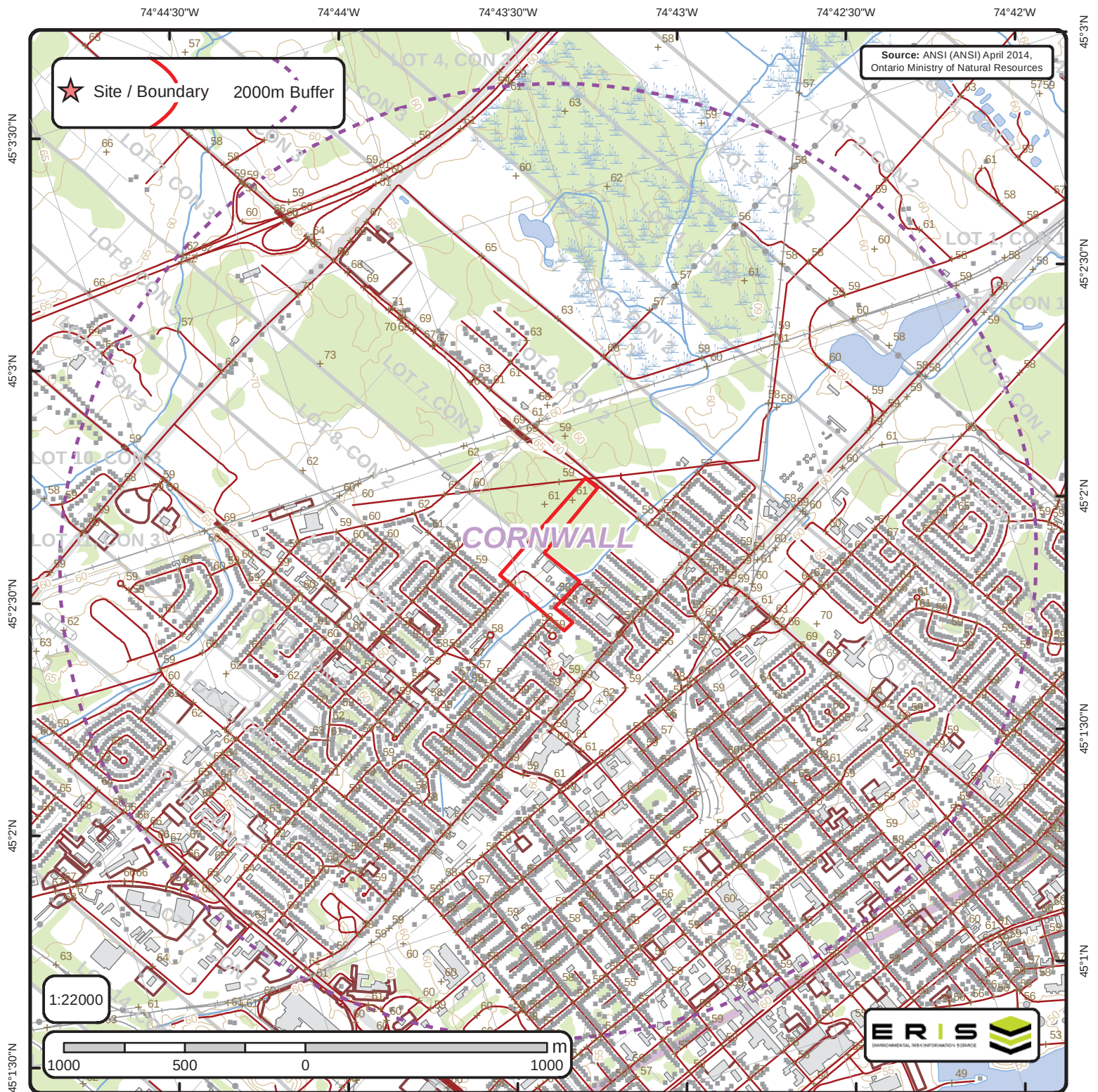
PROJECT

140750

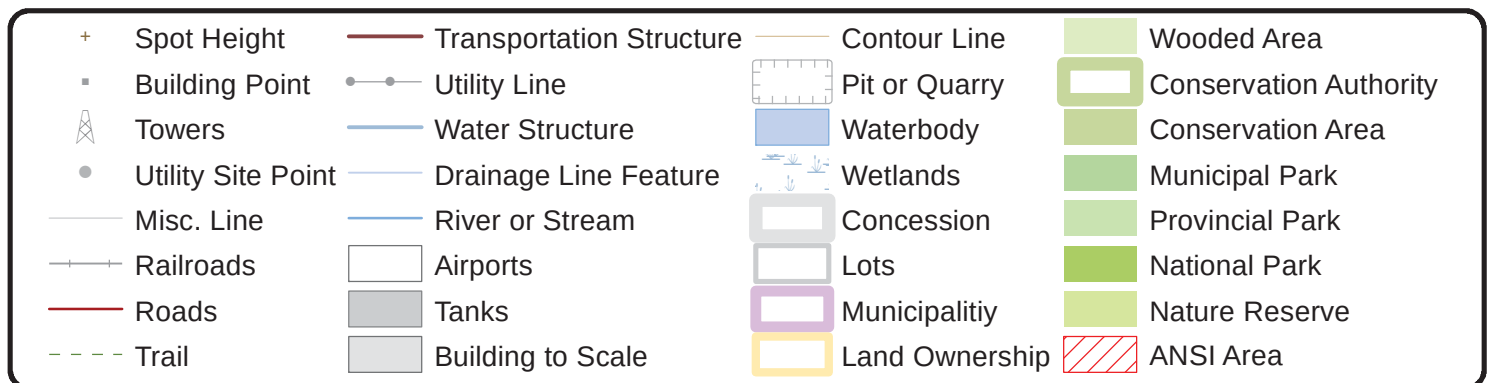
AP3



APPENDIX D
Topographic Map



Area of Natural & Scientific Interest (ANSI) Order No. 20150413002





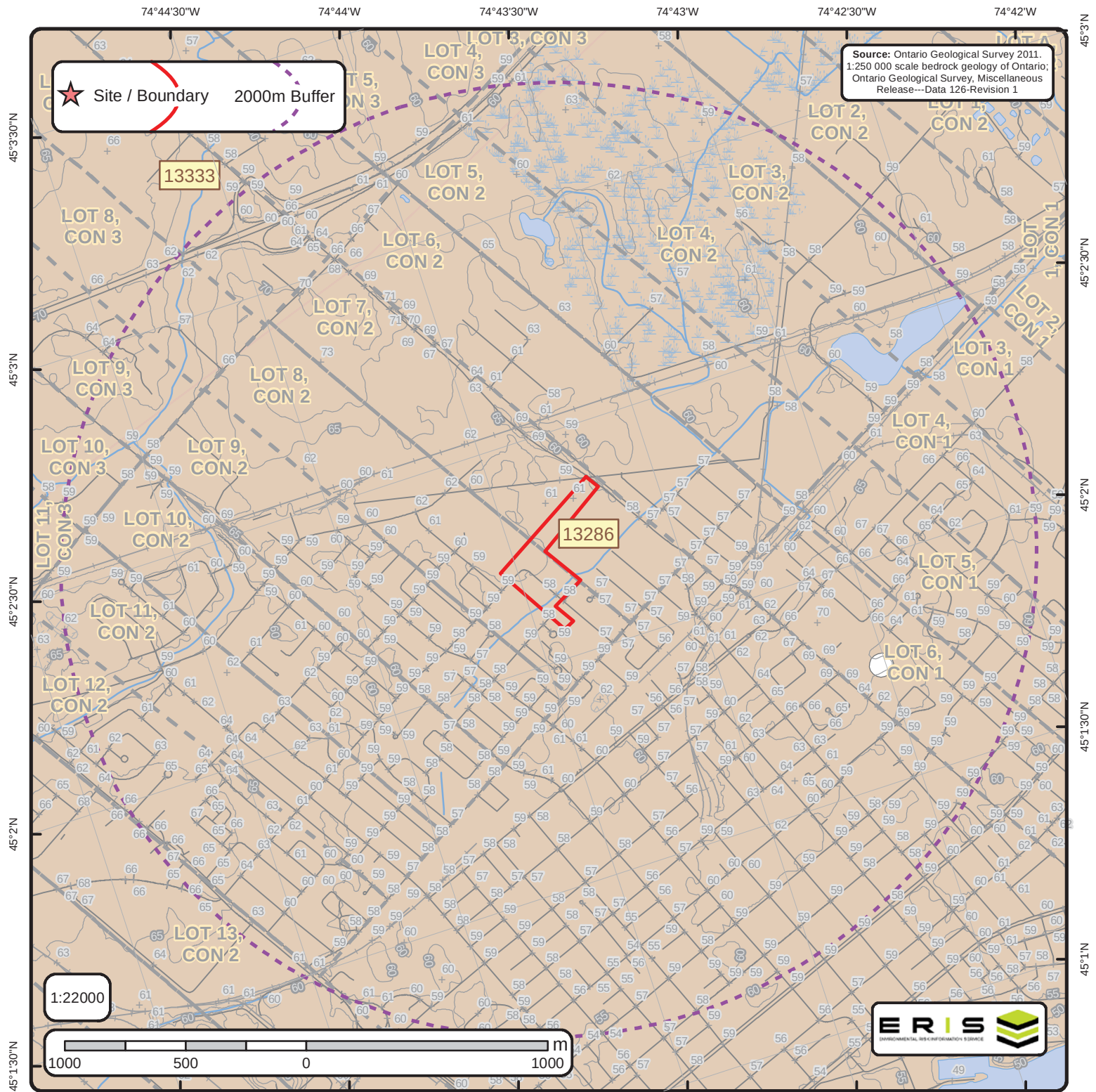
ANSI Report

ANSI Units Found within 2000 m of
Lemay Street @ Ontario Street, Cornwall, ON

Page 1
Order ID:
20150413002

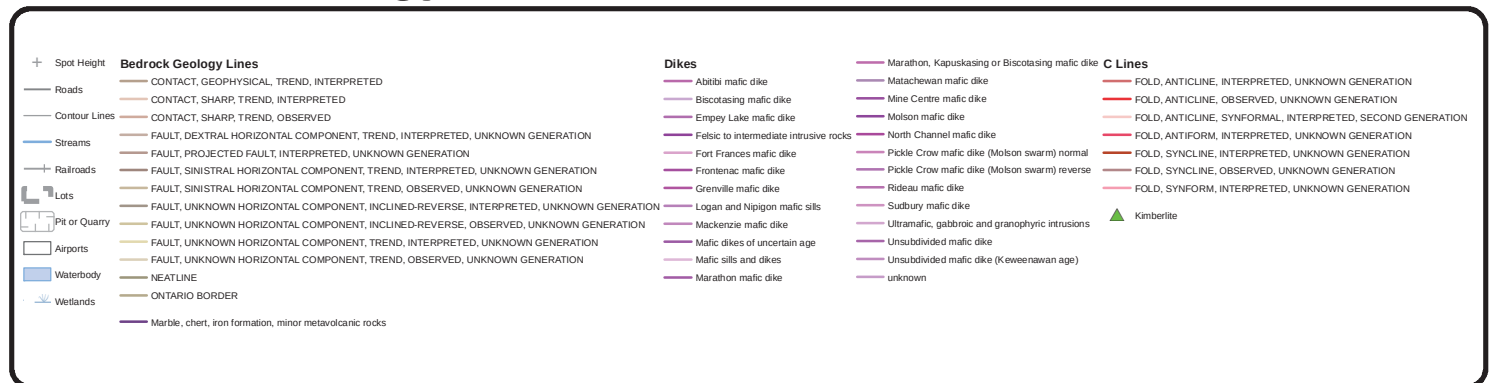


No ANSI units found within search area.



Bedrock Geology of Ontario

Order No. 20150413002





Bedrock Geology Report

Bedrock Geology units found within 2000 m of
Lemay Street @ Ontario Street, Cornwall, ON

Page 1
Order ID:
20150413002



ID: 13333 | **Unit Name:** |

Type (All): 54a | **Type (Primary):** 54a | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Limestone, dolostone, shale, arkose, sandstone | **Stratus (Primary):** Ottawa Group; Simcoe Group; Shadow Lake Formation | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** ORDOVICIAN (443.7 Ma to 488.3 Ma) | **Epoch (Primary):** MIDDLE ORDOVICIAN (now considered UPPER DEVONIAN) | **Province (Primary):**

ID: 13286 | **Unit Name:** |

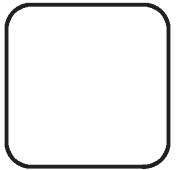
Type (All): 54b | **Type (Primary):** 54b | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Limestone, dolostone, shale, arkose, sandstone | **Stratus (Primary):** Chazy Group; Rockcliffe Formation | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** ORDOVICIAN (443.7 Ma to 488.3 Ma) | **Epoch (Primary):** MIDDLE ORDOVICIAN | **Province (Primary):**



Bedrock Geology Report Metadata

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release-Data 126
Revision1

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID - Unit ID **Unit Name** - Generalized geological unit classification

Type (All) - The geological unit number(s) or code(s) for all rock types present in an individual polygon.

Type (Primary) - The primary geological unit number or code for the primary rock type in an individual polygon

Type (Secondary) - The secondary geological unit number or code for the secondary rock type, if present, in an individual polygon

Type (Tertiary) - The tertiary geological unit number or code for the tertiary rock type, if present, in an individual polygon

Rock Type (Primary) - Rock type or sub-unit description

Status (Primary) - The Stratigraphic unit. Divided into:

Supergroup (two or more groups and lone formations)
Group (two or more formations)
Formation (primary unit of lithostratigraphy)
Member (named lithologic subdivision of a formation)
Bed (named distinctive layer in a member or formation)

Super Eon (Primary) - A name given to the largest defined unit of geological time, divided into Eons. Unique values which this field may contain (Domains) are:

PRECAMBRIAN (0.542 Ga to <3.85 Ga)

Eon (Primary) - A name given to a defined unit of geological time, divided into Eras. Unique values which this field may contain (Domains) are:

ARCHEAN (2.5 Ga to <3.85 Ga)
PROTEROZOIC (0.542 Ga to 2.50 Ga)
PHANEROZOIC (Present to 542.0 Ma)

Era (Primary) - A name given to a defined unit of geological time, divided into Periods. Each era on the scale is separated from the next by a major event or change. Unique values which this field may contain (Domains) are:

MESOARCHEAN (2.8 Ga to 3.2 Ga)	MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)
NEO-TO MESOARCHEAN (2.5 Ga to 3.2 Ga)	EARLY PALEOZOIC TO NEOPROTEROZOIC (443.7 Ma to 1.0 Ga)
NEOARCHEAN (2.5 Ga to 2.8 Ga)	NEO-TO MESOPROTEROZOIC (0.542 Ga to 1.6 Ga)
PALEOPROTEROZOIC (1.6 Ga to 2.5 Ga)	PALEOZOIC (251.0 Ma to 542.0 Ma)
MESO-TO PALEOPROTEROZOIC (1.0 Ga to 2.5 Ga)	MESOZOIC (65.5 Ma to 251.0 Ma)

Period (Primary) - A name given to a defined unit of geological time, divided into Epochs. Unique values which this field may contain (Domains) are:

CAMBRIAN (488.3 Ma to 542.0 Ma)
ORDOVICIAN (443.7 Ma to 488.3 Ma)
SILURIAN (416.0 Ma to 443.7 Ma)
DEVONIAN (359.2 Ma to 416.0 Ma)
MISSISSIPPIAN TO DEVONIAN (318.1 Ma to 416.0 Ma)
JURASSIC (145.5 Ma to 199.6 Ma)
CRETACEOUS AND JURASSIC (65.5 Ma to 199.6 Ma)

Epoch (Primary) - A name given to a defined unit of geological time. Unique values which this field may contain (Domains) are:

LOWER ORDOVICIAN	UPPER SILURIAN
MIDDLE ORDOVICIAN	LOWER DEVONIAN
UPPER ORDOVICIAN	MIDDLE DEVONIAN
MIDDLE AND LOWER SILURIAN	UPPER DEVONIAN
UPPER SILURIAN TO LOWER DEVONIAN	LOWER CRETACEOUS AND MIDDLE JURASSIC

Province (Primary) - The Geological Province the geological unit is in. Unique values which this field may contain (Domains) are:

SUPERIOR
SOUTHERN
SUPERIOR
GRENVILLE

74°44'30"W

74°44'W

74°43'30"W

74°43'W

74°42'30"W

74°42'W

 Site / Boundary

Source: Chapman, L.J. and Putnam, D.F. 2007. Physiography of Southern Ontario: Ontario Geological Survey, Miscellaneous Release—Data 22

Till Plains
(Undrumlinized)

Glengarry
Till Plain

Lancaster
Flats

Clay
Plains

Till Plains
(Undrumlinized)

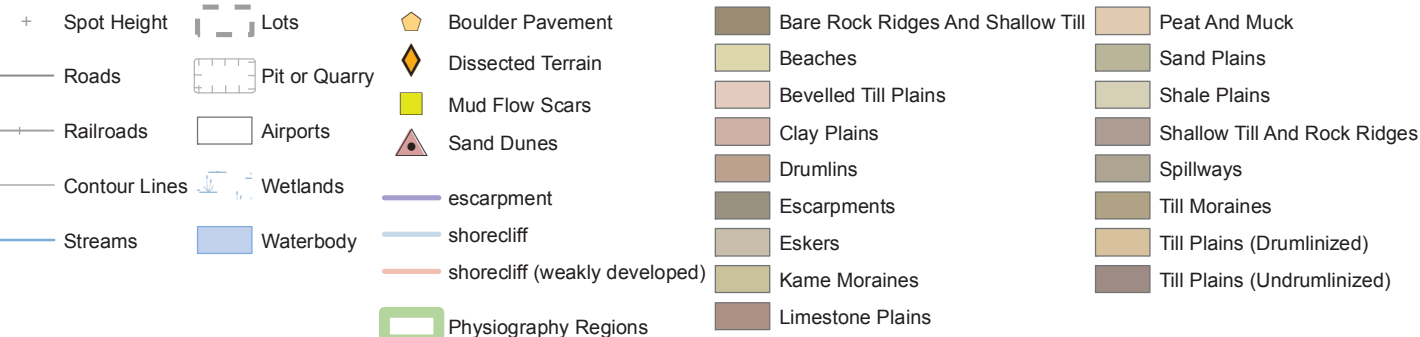
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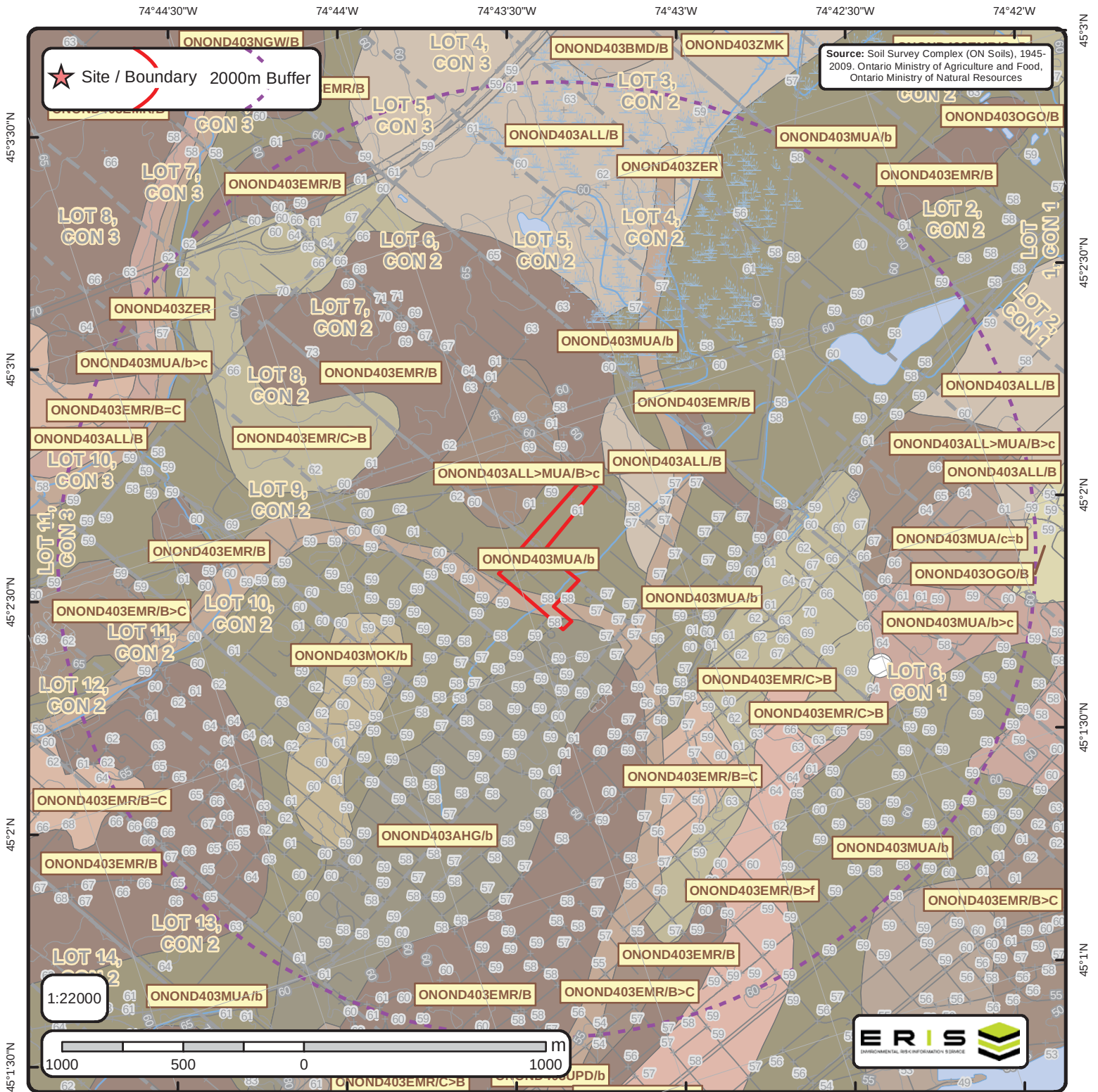
1000 500 0 1000 m



Physiography of Southern Ontario

Order No. 20150413002





Soil Survey Complex (ON Soils)

Order No. 20150413002

- | | | | |
|-------|---------------|----------------|---------------|
| + | Spot Height | [Dashed Box] | Lots |
| —+—+— | Railroads | [Stippled Box] | Pit or Quarry |
| — | Roads | [White Box] | Airports |
| — | Contour Lines | [Blue Box] | Wetlands |
| — | Streams | [Blue Box] | Waterbody |



Soils Report

Soil Map Units Found within 2000 m of
Lemay Street @ Ontario Street, Cornwall, ON

Page 1
Order ID:
20150413002



Map Unit: ONOND403ZER Soil Complex: 1 of 1 Area (sq m): 3424710.0

Soil Type: ONZER___ | **Percent:** 100 | **Code:** ZER | **Name:** ERODED CHANNEL | **Symbol:** ZER | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 5 | **CLI1:** I | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** | **Hydro:** | **Texture:** VAR | **Modifier:** ___

Map Unit: ONOND403ALL/B Soil Complex: 1 of 1 Area (sq m): 1915630.0

Soil Type: ONALL___ | **Percent:** 100 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 1877350.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403MUA/b Soil Complex: 1 of 1 Area (sq m): 2468180.0

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403MUA/b Soil Complex: 1 of 1 Area (sq m): 3285330.0

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403MUA/b>c Soil Complex: 1 of 2 Area (sq m): 180960.0

Soil Type: ONMUA___ | **Percent:** 70 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403MUA/b>c Soil Complex: 2 of 2 Area (sq m): 180960.0

Soil Type: ONMUA___ | **Percent:** 30 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 167799.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/C>B Soil Complex: 1 of 2 Area (sq m): 594486.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/C>B Soil Complex: 2 of 2 Area (sq m): 594486.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___



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Map Unit: ONOND403ZER Soil Complex: 1 of 1 Area (sq m): 783285.0

Soil Type: ONZER___ | **Percent:** 100 | **Code:** ZER | **Name:** ERODED CHANNEL | **Symbol:** ZER | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 5 | **CLI1:** I | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** | **Hydro:** | **Texture:** VAR | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 146171.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 996030.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B=C Soil Complex: 1 of 2 Area (sq m): 319034.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B=C Soil Complex: 2 of 2 Area (sq m): 319034.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403OGO/B Soil Complex: 1 of 1 Area (sq m): 595559.0

Soil Type: ONOGO___ | **Percent:** 100 | **Code:** OGO | **Name:** OSGOODE | **Symbol:** OGO | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403MUA/b Soil Complex: 1 of 1 Area (sq m): 65969.3984375

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403ALL/B Soil Complex: 1 of 1 Area (sq m): 364874.0

Soil Type: ONALL___ | **Percent:** 100 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403ALL>MUA/B>c Soil Complex: 1 of 2 Area (sq m): 230095.0

Soil Type: ONALL___ | **Percent:** 70 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403ALL>MUA/B>c Soil Complex: 2 of 2 Area (sq m): 230095.0

Soil Type: ONMUA___ | **Percent:** 30 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** SL | **Modifier:** ___



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Map Unit: ONOND403ALL/B Soil Complex: 1 of 1 Area (sq m): 117149.0

Soil Type: ONALL___ | **Percent:** 100 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 84520.703125

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 60899.6992188

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403ALL/B Soil Complex: 1 of 1 Area (sq m): 115067.0

Soil Type: ONALL___ | **Percent:** 100 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B>C Soil Complex: 1 of 2 Area (sq m): 236925.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B>C Soil Complex: 2 of 2 Area (sq m): 236925.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403ALL>MUA/B>c Soil Complex: 1 of 2 Area (sq m): 224925.0

Soil Type: ONALL___ | **Percent:** 70 | **Code:** ALL | **Name:** ALLENDALE | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** W | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** P | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403ALL>MUA/B>c Soil Complex: 2 of 2 Area (sq m): 224925.0

Soil Type: ONMUA___ | **Percent:** 30 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** ALL | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403MUA/b Soil Complex: 1 of 1 Area (sq m): 2446770.0

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403MUA/b Soil Complex: 1 of 1 Area (sq m): 258367.0

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___



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Map Unit: ONOND403EMR/C>B Soil Complex: 1 of 2 Area (sq m): 513161.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/C>B Soil Complex: 2 of 2 Area (sq m): 513161.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403MUA/c=b Soil Complex: 1 of 2 Area (sq m): 190156.0

Soil Type: ONMUA___ | **Percent:** 50 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403MUA/c=b Soil Complex: 2 of 2 Area (sq m): 190156.0

Soil Type: ONMUA___ | **Percent:** 50 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403MOK/b Soil Complex: 1 of 1 Area (sq m): 244124.0

Soil Type: ONMOK___ | **Percent:** 100 | **Code:** MOK | **Name:** MANOTICK | **Symbol:** MOK | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B Soil Complex: 1 of 1 Area (sq m): 1302710.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403AHG/b Soil Complex: 1 of 1 Area (sq m): 1065530.0

Soil Type: ONAHG___ | **Percent:** 100 | **Code:** AHG | **Name:** ACHIGAN | **Symbol:** AHG | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 4 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** B | **Texture:** LFS | **Modifier:** ___

Map Unit: ONOND403EMR/B=C Soil Complex: 1 of 2 Area (sq m): 509272.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B=C Soil Complex: 2 of 2 Area (sq m): 509272.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403MUA/b>c Soil Complex: 1 of 2 Area (sq m): 526136.0

Soil Type: ONMUA___ | **Percent:** 70 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___



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Map Unit: ONOND403MUA/b>c **Soil Complex:** 2 of 2 **Area (sq m):** 526136.0

Soil Type: ONMUA___ | **Percent:** 30 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 0 | **CLI:** 3 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** SL | **Modifier:** ___

Map Unit: ONOND403EMR/B **Soil Complex:** 1 of 1 **Area (sq m):** 1120690.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/C>B **Soil Complex:** 1 of 2 **Area (sq m):** 101623.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/C>B **Soil Complex:** 2 of 2 **Area (sq m):** 101623.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B>f **Soil Complex:** 1 of 2 **Area (sq m):** 1012890.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B>f **Soil Complex:** 2 of 2 **Area (sq m):** 1012890.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 22.500000 | **Class:** F | **Range:** 15 - 30 | **Stoniness:** 4 | **CLI:** 6 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B=C **Soil Complex:** 1 of 2 **Area (sq m):** 133410.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B=C **Soil Complex:** 2 of 2 **Area (sq m):** 133410.0

Soil Type: ONEMR___ | **Percent:** 50 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403MUA/b **Soil Complex:** 1 of 1 **Area (sq m):** 1147160.0

Soil Type: ONMUA___ | **Percent:** 100 | **Code:** MUA | **Name:** MOUNTAIN | **Symbol:** MUA | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 2 | **CLI1:** F | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** I | **Hydro:** C | **Texture:** CL | **Modifier:** ___

Map Unit: ONOND403EMR/B **Soil Complex:** 1 of 1 **Area (sq m):** 156963.0

Soil Type: ONEMR___ | **Percent:** 100 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___



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Map Unit: ONOND403EMR/B>C **Soil Complex:** 1 of 2 **Area (sq m):** 87776.0

Soil Type: ONEMR___ | **Percent:** 70 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403EMR/B>C **Soil Complex:** 2 of 2 **Area (sq m):** 87776.0

Soil Type: ONEMR___ | **Percent:** 30 | **Code:** EMR | **Name:** EAMER | **Symbol:** EMR | **Parent Material:** | **Landscape:** | **Slope:** 3.500000 | **Class:** C | **Range:** 2 - 5 | **Stoniness:** 2 | **CLI:** 2 | **CLI1:** P | **CLI2:** T | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** W | **Hydro:** B | **Texture:** L | **Modifier:** ___

Map Unit: ONOND403UPD/b **Soil Complex:** 1 of 1 **Area (sq m):** 442464.0

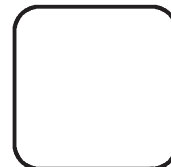
Soil Type: ONUPD___ | **Percent:** 100 | **Code:** UPD | **Name:** UPLANDS | **Symbol:** UPD | **Parent Material:** | **Landscape:** | **Slope:** 1.200000 | **Class:** B | **Range:** 0.5 - 2 | **Stoniness:** 0 | **CLI:** 4 | **CLI1:** F | **CLI2:** M | **Survey:** STORMONT, DUNDAS AND GLENGARRY | **Drainage:** R | **Hydro:** A | **Texture:** S | **Modifier:** ___



Soils Report Metadata

Soil Survey Complex (ON Soils)

ONTARIO MINISTRY OF AGRICULTURE AND FOOD
MINISTRY OF NATURAL RESOURCES
1945-2009



Map Unit The SOIL MAPUNIT is the basic element of an applied soil classification resulting from detailed soil surveys. Soil Map unit is comprised of one or more soil survey polygons. The MAPUNIT field was generated for each polygon by appending the PROVINCE and NSDBID codes with the MAP UNIT symbol that identified that polygon on the original printed soil map. The MAPUNIT usually encodes meaningful information about the soil type and topography; the same information which is found in the Component table. Within any one survey, a group of polygons with similar properties may be coded with the same MAPUNIT.

Soil Type Identifies a specific soil profile.

Percent Proportion of the area of the Soil Map Unit occupied by a specific soil component, expressed as a percent. For any particular SOIL MAPUNIT, the sum of the individual Soil Map Unit Component Area values must be equal to 100%.

Code Three letter CANSIS code for identifying soils. **Name** Textual identifier of the soil. **Symbol** Soil symbol as found in the soil Mapunit.

Survey Name describing the geographic location where the Soil Survey was completed. Typically the name denotes an administrative boundary of an Upper Tier municipality that occurred at the time of the Soil Survey.

Slope Predominant slope of the landscape expressed as a percent (%). Slope steepness is often referred to by Class.

Class	Range (%)	Terminology
A	0.0 - 0.5	Level
B	0.5 - 2	Nearly level
C	2.0 - 5	Very gentle slopes
D	5.0 - 9	Gentle slopes
E	9.0 - 15	Moderate slopes
F	15 - 30	Strong slopes
G	30 - 45	Very strong slopes
H	45 - 70	Extreme slopes
I	70 - 100	Steep slopes
J	> 100	Very steep slopes

Stoniness Occurrence of surface stoniness

Code
- Not Applicable
0 Non-stony
1 Slightly stony
2 Moderately stony
3 Very stony
4 Exceedingly stony
5 Excessively stony

Drainage Indicates classification of how well the soil drains.

Code
- Not Applicable
VR Very Rapidly
R Rapidly
W Well
MW Moderately Well
I Imperfectly
P Poorly
VP Very Poorly

Texture Describes the soil texture of the A Horizon in the soil profile.

Code
S coarse sand and loamy sand
SL moderately coarse sandy loam
L medium - moderately fine loam
SIL silt loam
CL clay loam
SIC silty clay
C clay
O organic

CLI Classification of soil and land physical and climatic capability for the production of common field crops as part of the Canada Land Inventory (CLI).

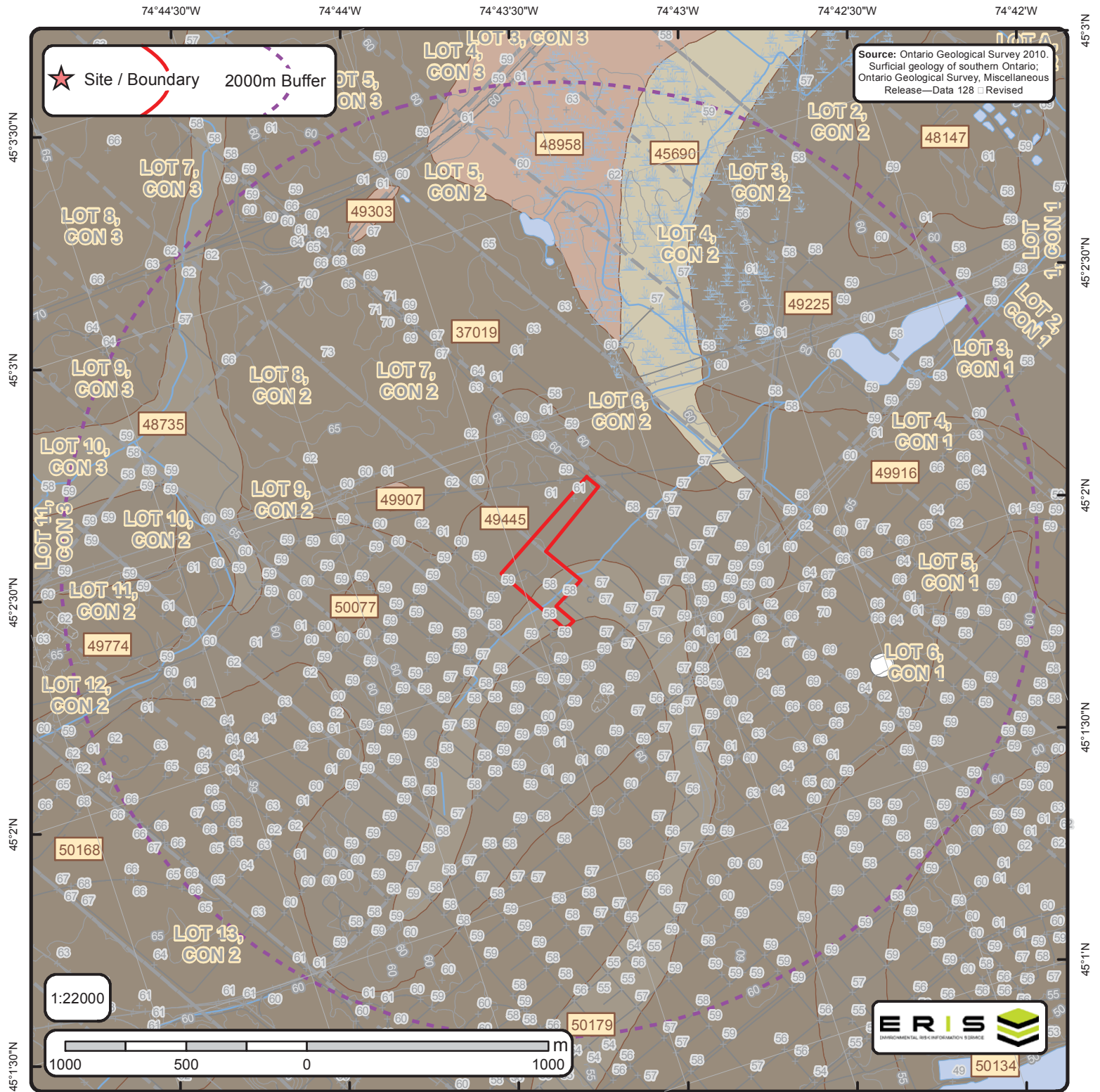
Class 1 No significant limitations in use for Crops
Class 2 moderate limitations on use for crops
Class 3 moderately severe limitations on use for crops.
Class 4 Severe limitations on use for crops.
Class 5 Very severe limitations preclude annual cultivation; improvements feasible.
Class 6 Natural grazing only; no improvements feasible.
Class 7 No capability for agriculture.

CLI1 and CLI2 First and Second CLI (Canada Land Inventory) Limitation Subclass

Subclass C Land subject to crop heat unit regimes of under 2300 (i.e. adverse Climate)
Subclass D Adverse soil structure (i.e. Depth of rooting zone is restricted)
Subclass E Loss of soil profile from Erosion
Subclass F Low inherent soil Fertility
Subclass I Subject to occasional flooding (Inundation) from adjacent streams or waterbodies
Subclass M Low inherent Moisture holding capacity
Subclass P Presence of surface stones > 15 cm diameter.
Subclass R Presence of consolidated bedrock within one metre of the soil surface
Subclass S Presence of a combination of the Subclasses F and M, or, the presence of a combination of the Subclasses P and R (i.e. adverse soil characteristics)
Subclass T Presence of adverse Topography

Hydro Hydrological Soil Groups classify soils into 4 groups (A,B,C,and D) according to water runoff and infiltration rates.

A Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel.
B Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures.
C Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture.
D Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material.



The Surficial Geology of Southern Ontario Order No. 20150413002





Surface Geology Report

Surface Geology units found within 2000 m of
Lemay Street @ Ontario Street, Cornwall, ON

Page 1
Order ID:
20150413002



ID: 37019 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 45690 | Unit Name: Organic deposits |

Deposit Type Code: 7 | **Deposit Age:** Recent | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** organic deposits | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** wetland | **Primary General Modifier:** | **Veneer:** | **Episode:** Hudson | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Mainly muck and peat in bogs, fens, swamps and poorly drained areas.

ID: 48147 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 48735 | Unit Name: Offshore marine deposits |

Deposit Type Code: 3 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** clay, silt | **Primary Material Modifier:** | **Secondary Material:** sand | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Clay, silty clay and silt, commonly calcareous and fossiliferous; locally overlain by thin sands. Upper parts are generally mottled or laminated reddish brown and bluish grey and may contain lenses and pockets of sand, but at depth the clay is uniform a

ID: 48958 | Unit Name: Nearshore sediments |

Deposit Type Code: 5b | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Fine-to medium-grained sand, calcareous and commonly fossiliferous; nearshore sand generally occurs as a sheet or as bars or spits associated with glaciofluvial materials.



Surface Geology Report

Surface Geology units found within 2000 m of
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ID: 49225 | **Unit Name:** Deltaic and estuarine deposits |
Deposit Type Code: 4 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** deltaic | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Medium-to fine-grained sand, in some places fossiliferous; lies outside abandoned channels; most common deposit is a combined strip delta-sand plain that developed as water levels fell.

ID: 49303 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).

ID: 49445 | **Unit Name:** Deltaic and estuarine deposits |
Deposit Type Code: 4 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** deltaic | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Medium-to fine-grained sand, in some places fossiliferous; lies outside abandoned channels; most common deposit is a combined strip delta-sand plain that developed as water levels fell.

ID: 49774 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 49907 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).



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ID: 49916 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 |
Primary Material: diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial |
Primary General Modifier: | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface |
Provenance: N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium |
Material Description: Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 50077 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 |
Primary Material: diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial |
Primary General Modifier: | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface |
Provenance: N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium |
Material Description: Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 50134 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 |
Primary Material: diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial |
Primary General Modifier: | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface |
Provenance: N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium |
Material Description: Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 50168 | Unit Name: Till |

Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 |
Primary Material: diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial |
Primary General Modifier: | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface |
Provenance: N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium |
Material Description: Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 50179 | Unit Name: Offshore marine deposits |

Deposit Type Code: 3 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** m1175a | **Map Name:** Cornwall | **Source Map Scale:** 1:50 000 |
Primary Material: clay, silt | **Primary Material Modifier:** | **Secondary Material:** sand | **Primary General:** glaciomarine |
Primary General Modifier: foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface |
Provenance: | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Clay, silty clay and silt, commonly calcareous and fossiliferous; locally overlain by thin sands. Upper parts are generally mottled or laminated reddish brown and bluish grey and may contain lenses and pockets of sand, but at depth the clay is uniform a



Surface Geology Report

Surface Geology units found within 2000 m of
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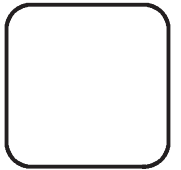
No Surface Geology units found within search area.



Surface Geology Report Metadata

Ontario Geological Survey 2010. Surficial geology of southern Ontario;
Ontario Geological Survey, Miscellaneous Release - Data 128 - Revised.

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY



ID ☐ ID applied to the Unit

Unit Name ☐ Name of deposit

Deposit Type Code ☐ The geological unit number taken from the original map legend.

Deposit Age ☐ to show the age when the sediments were deposited, e.g., Wisconsinan, postglacial or recent.

Map Number ☐ Original map series number, eg., M2402 or P1973 ☐ Each sgu point feature is tagged to its original map.

Map Name ☐ Usually NTS area where mapping was completed, e.g., Golden Lake ☐

Source Map Scale ☐ The scale at which the original map was captured, e.g., 1:50 000 ☐

Primary Material ☐ This attribute provides the user with information regarding the most prevalent material present within a given area.

Primary Material Modifier ☐ This attribute provides the user with a more refined description of the lithological classification of the primary material.

Secondary Material ☐ This attribute provides the user with information regarding subordinate materials present within a given area.

Primary General ☐ This attribute provides the user with an interpretation of the depositional environment within which the primary material was deposited.

Primary General Modifier ☐ This attribute provides the user with a refined interpretation of the primary genetic modifier.

Veneer ☐ This attribute provides the user with information regarding the type of material that forms a thin, discontinuous veneer over the primary material.

Sub Episode ☐ A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Sub Episode ☐ A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Phase ☐ A diachronic stratigraphic unit in a lower order than Subepisode, and the proposed sequence stratigraphic classification is listed in the following table in the eastern and northern Great Lakes area (Karrow et al. 2000)

Stratus Modifier ☐ This attribute provides the user information regarding the stratigraphic position of the mapped unit (i.e., whether the unit occurs primarily on the surface or in the subsurface).

Provenance ☐ This attribute provides the user with information regarding the provenance of a particular till unit (i.e. direction or lobe from which the till is derived).

Carbon Content ☐ This attribute provides the user with information regarding the carbonate content of till.

Formation ☐ This attribute provides the user with information regarding the formation to which a given primary material belongs (e.g., Tavistock Till, Port Stanley Till, Scarborough Formation). This attribute is seamless and allows the user to create a map based on formation.

Permeability ☐ This attribute provides the user with basic information about permeability of the sediments in a ranking of high, medium and low.

Material Description ☐ Material or sediment description, e.g., sand and silty fine sand, silty sand and gravel and silty till with low stone content ☐

APPENDIX E
SITE VISIT PHOTOGRAPHS

SITE VISIT PHOTOGRAPHS

Our File Ref.: 140750

Client: AECOM Canada

Project: Phase I Environmental Site Assessment

Site Location: Proposed Lemay Street Extension and Municipal Yard
 Reconfiguration, Cornwall, Ontario

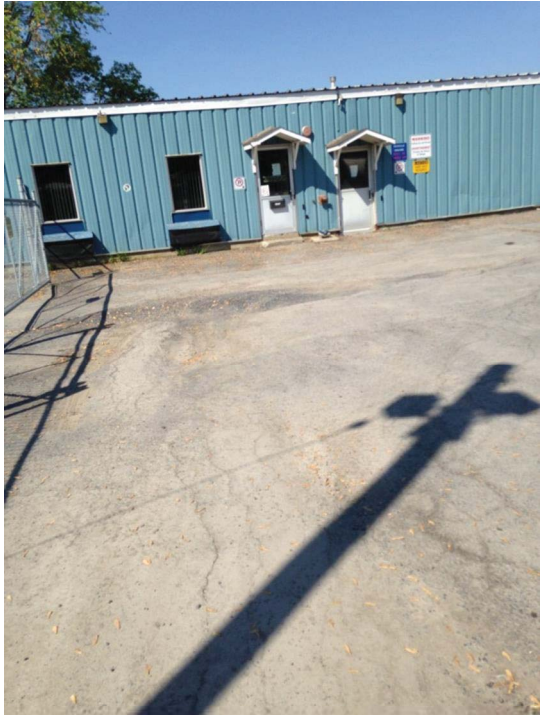
Photograph No. 1	
Date: 5/29/2015	
Description From approximately east-central portion of 1225 Ontario Street facing south.	
Photograph No. 2	
Date: 5/29/2015	
Description From west to east across 1225 Ontario Street, north of the repair garage.	

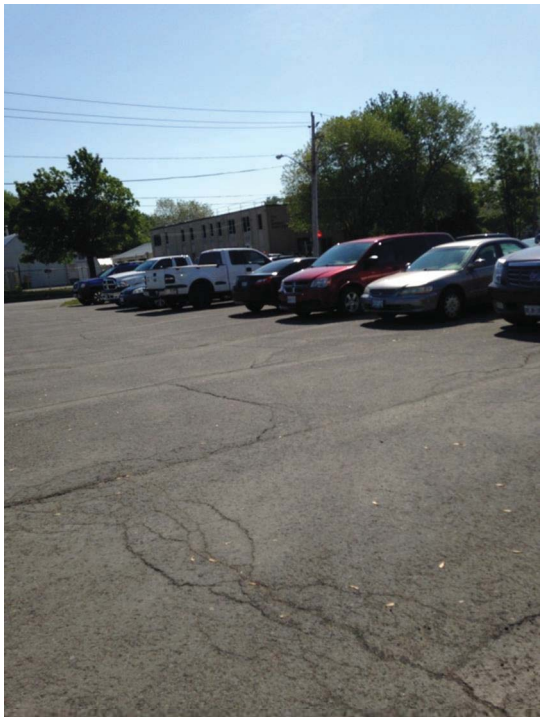
Photograph No. 3		
Date: 5/29/2015		
Description Northern portion of 1225 Ontario Street, northeast portion facing south.		

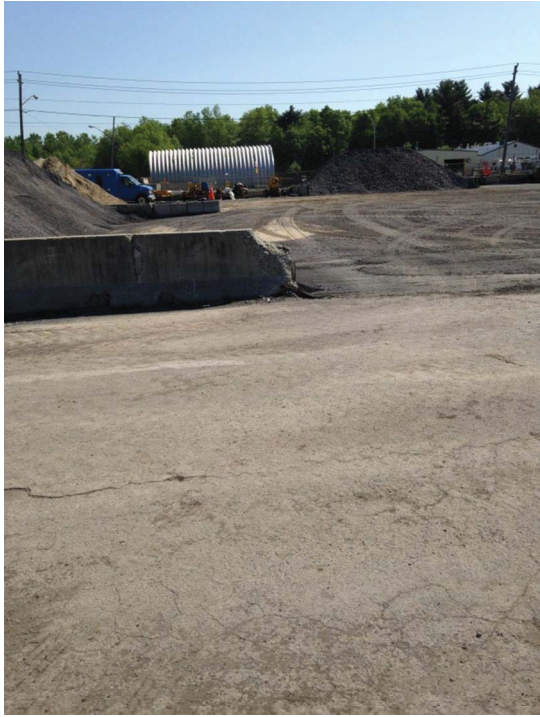
Photograph No. 4		
Date: 5/29/2015		
Description From salt storage sheds at northern portion of 1225 Ontario Street facing southwest towards petroleum dispensing equipment.		

Photograph No. 5		
Date: 5/29/2015		
Description Across southwest portion of the Site, vacant parcel of land south of Twelfth Street. From west facing east across southern portion.		

Photograph No. 6		
Date: 5/29/2015		
Description Area of former mobile home at southern portion of 1246 Ontario Street.		

Photograph No. 7		
Date: 5/29/2015		
Description East face of Stores Building located at 1246 Ontario Street.		

Photograph No. 8		
Date: 5/29/2015		
Description Parking and circulation area at the eastern portion of 1246 Ontario Street, west facing east.		

Photograph No. 9		
Date: 5/29/2015		
Description West facing east across aggregates storage yard at 1246 Ontario Street.		

Photograph No. 10		
Date: 5/29/2015		
Description South facing north across 301 Sunnyside Avenue.		

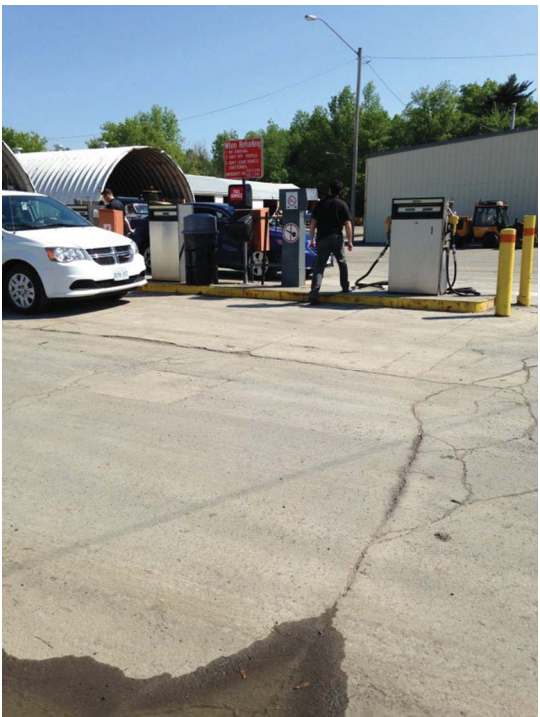
Photograph No. 11		
Date: 5/29/2015		
Description Along northern perimeter of 301 Sunnyside Avenue, west facing east.		

Photograph No. 12		
Date: 5/29/2015		
Description Northeast facing southwest across eastern portion of 301 Sunnyside Avenue.		

Photograph No. 13		
Date: 5/29/2015		
Description From 1225 Ontario Street east extent facing west along proposed Lemay Street extension.		

Photograph No. 14		
Date: 5/29/2015		
Description Optimist Park, former landfill site immediately north of 12225 Ontario Street, from south facing north.		

Photograph No. 15		
Date: 5/29/2015		
Description Hydro transmission lines north of 301 Sunnyside Avenue.		

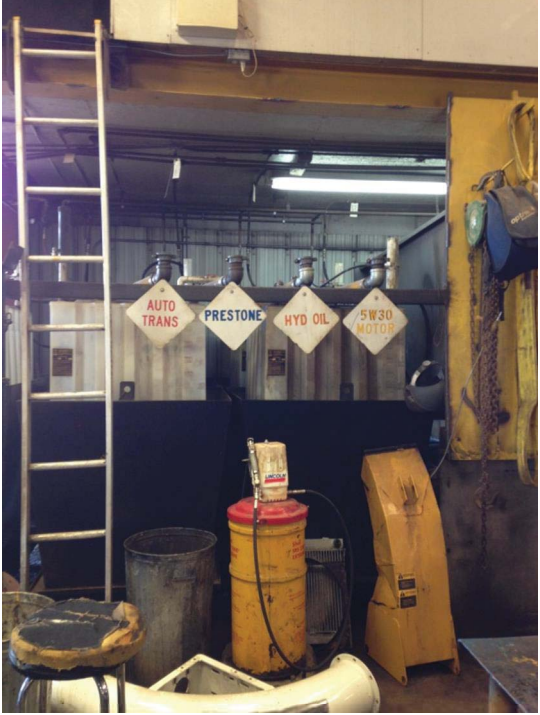
Photograph No. 16		
Date: 5/29/2015		
Description Fuel dispensing equipment along the west-central portion of 1225 Ontario Street, west facing east.		

Photograph No. 17		
Date: 5/29/2015		
Description MgCl de-icing brine storage container at the northern portion of 1225 Ontario Street.		

Photograph No. 18		
Date: 5/29/2015		
Description Hydo-vac waste disposal pit at the northeastern portion of 1225 Ontario Street.		

Photograph No. 19	
Date: 5/29/2015	
Description Underground waste oil storage tank at the northern face of the repair garage on 1225 Ontario Street.	

Photograph No. 20	
Date: 5/29/2015	
Description Stationary hoist in repair garage at 1225 Ontario Street.	

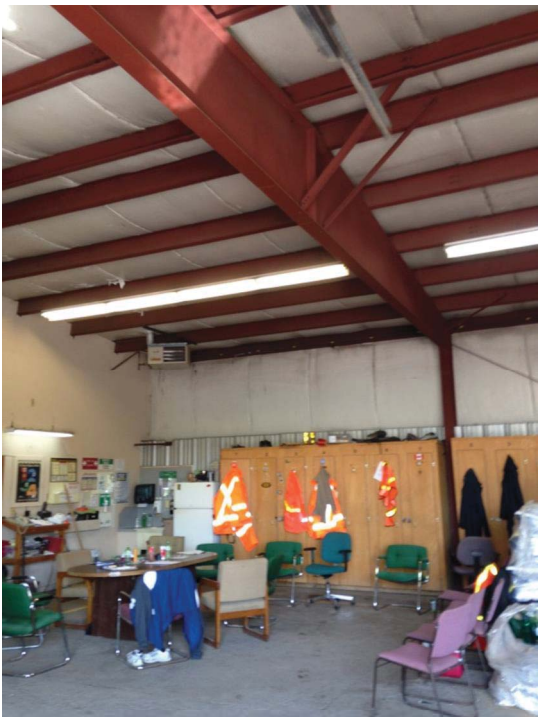
Photograph No. 21	
Date: 5/29/2015	
Description Oils and fluids stored in repair garage at 1225 Ontario Street.	

Photograph No. 22	
Date: 5/29/2015	
Description Chemical storage, typical throughout buildings at 1225 Ontario Street.	

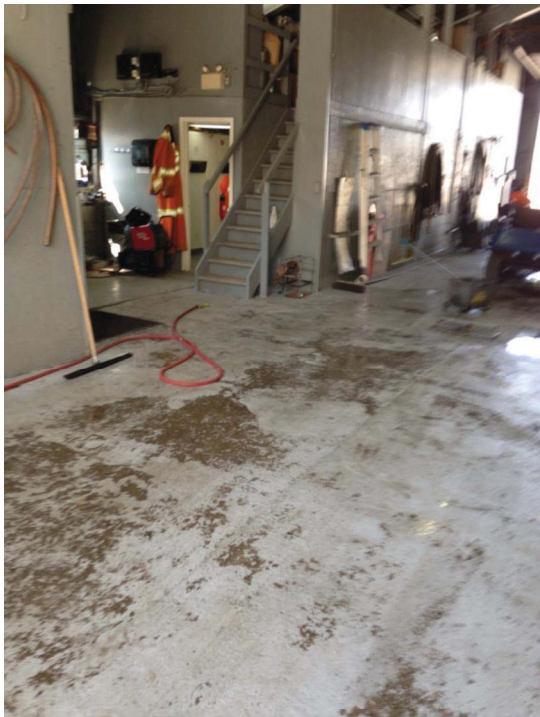
Photograph No. 23	
Date: 5/29/2015	
Description Chemical storage, diesel exhaust fluid, in Roads Building.	

Photograph No. 24	
Date: 5/29/2015	
Description Chemical storage, typical throughout buildings at 1225 Ontario Street.	

Photograph No. 25		
Date: 5/29/2015		
Description Typical of storage portion of Stores Building.		

Photograph No. 26		
Date: 5/29/2015		
Description Typical of interior of Parks Building.		

Photograph No. 27	
Date: 5/29/2015	
Description Typical of Office Building, second storey.	

Photograph No. 28	
Date: 5/29/2015	
Description Typical interior of Water Distribution Shop.	

Appendix E

Municipal Class Environmental Assessment Improvement and Extension of Lemay Street – Corporation of the City of Cornwall

- Stage 1 Archaeological Assessment
- Stage 2 Archaeological Assessment

Stage 1 Archaeological Assessment

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
Proposed Lemay Street and Municipal Works Yard Project
Part of Lots 7, 8, and 9, Concession 2
Township of Cornwall
United Counties of Stormont, Dundas and Glengarry

Prepared for:

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Infrastructure Planning
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PIF# P395-0008-2015

June 29th, 2015

Project No.: 33017819

Report Type: Original

EXECUTIVE SUMMARY

AECOM was retained by the City of Cornwall to conduct a Stage 1 Archaeological Assessment of the Proposed Lemay Street and Municipal Works Yard Project on part of Lots 7, 8, and 9, Concession 2, Township of Cornwall, in the United Counties of Stormont, Dundas and Glengarry. The study area is approximately 7.38 hectares in size. This study is being done in advance of the proposed Lemay Street extension and rehabilitation of the Municipal Works yard. This Stage 1 assessment is being done as part of a Municipal Class Environmental Assessment (MCEA).

This Stage 1 assessment documents the geographic, archaeological and land use history of lands identified within the study area in order to assess their potential for the recovery of archaeological resources. No optional property inspection was undertaken. Instead, detailed mapping, satellite imagery, and current and archival aerial photographs were used in order to evaluate the property's archaeological potential.

The background study demonstrates that the study area exhibits a high potential for the recovery of Pre-Contact and historical sites. This is based on the presence of historic structures, the proximity of historic roads, the access to a water body with a navigable trade route, the proximity to other pre-contact sites, and certain physiographic features in the study area. However, the review of aerial photographs dated to the mid-twentieth century demonstrates that portions of the study area have been disturbed.

For lands within the study area that will be impacted by the proposed development, AECOM makes the following recommendations:

- 1) A Stage 2 Archaeological Assessment should be conducted by a licenced consultant archaeologist using the test pit survey method at 5m intervals only in areas to be impacted by the proposed development which have not recently been ploughed or do not have appropriate conditions for pedestrian survey at the time of the Stage 2 assessment. The Stage 2 Archaeological Assessment will follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Ministry of Tourism, Culture and Sport, 2011).
- 2) No further archaeological assessments are recommended for areas that are marked in red in **Appendix A, Figure 10**, as these areas are disturbed.

AECOM

PROJECT PERSONNEL

<i>Project Director:</i>	Charlton Carscallen, M.A. [P088]
<i>Report Preparation:</i>	Catherine Dupont, M.A. [P395] Melissa Wallace, M.A. [R496]
<i>Graphics:</i>	Michael Collins, BSc
<i>Report Reviewer:</i>	Charlton Carscallen

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1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

AECOM was retained by the City of Cornwall to conduct a Stage 1 Archaeological Assessment of the Proposed Lemay Street and Works Yard Project on part of Lots 7, 8, and 9, Concession 2, in the Township of Cornwall, United Counties of Stormont, Dundas and Glengarry (**Figure 1**). The study area totaled approximately 7.38 hectares. This Stage 1 assessment is being done as part of a Municipal Class Environmental Assessment (MCEA). The Proposed Lemay Street and Municipal Works Yard Project will include the extension of Lemay Street from Ontario Street to McConnell Avenue as well as roadway improvements to Lemay Street from Pitt Street to Ontario Street and the development of a plan for operational requirements and any required reconfiguration of the Municipal Works Facilities, currently located at the intersection of Lemay Street and Ontario Street.

A Stage 1 Archaeological Assessment involves background research to describe the geography, land use history, previous archaeological fieldwork and current condition of the lands within the study area in order to evaluate their archaeological potential and to formulate recommendations for Stage 2 assessment.

No optional property inspection was undertaken. Instead, detailed mapping, satellite imagery, and current and archival aerial photographs were used in order to evaluate the property's archaeological potential.

The Stage 1 Archaeological Assessment was carried out under the project direction of Charlton Carscallen [professional archaeological licence #P088] and the archaeological licence #P395 issued to Catherine Dupont (AECOM) in accordance with the provisions of the *Ontario Heritage Act (2005)* and with the *Standards and Guidelines for Consultant Archaeologists (2011)*, formulated by the Ministry of Tourism, Culture and Sport (MTCS).

1.2 HISTORICAL CONTEXT

Pre-Contact Period

Although glaciers retreated from the Ottawa region of southeastern Ontario some 13,000 years ago, the massive weight of these ice sheets left the earth's crust compressed, lowering the area below sea level and allowing sea water to flow inland forming the Champlain Sea. Over the next 3000 years, the Champlain Sea gradually receded as the earth's crust rebounded, eventually permitting the first inhabitants to move into the region in subsequent years. Paleo-Indian sites are concentrated in Ontario and southern New York State. Paleo-Indians were widely scattered, nomadic groups that occupied the sub-tundra-like environment that prevailed in Ontario at the

end of the Pleistocene. Past research indicates that these groups likely followed big game (such as Caribou) across the landscape, preferring to camp on high ground, immediately adjacent to water sources, such as glacial lakes or spillways, where smaller game and plant foods would have been harvested. Relatively large fluted projectile points are the hallmark of the Paleo-Indian toolkit.

The barrier presented by the Champlain Sea explains why sites of Ontario's first occupants, Paleo-Indians, (ca. 11,000 – 9500 Before Present (B.P.) B.P.¹) are largely absent from the Ottawa valley. Areas of high potential for such sites would be ancient shorelines of the Champlain Sea. Unfortunately, research failed to locate such deposits. The geomorphology of the region, being rocky and elevated land, does not allow for retracing ancient shorelines (Pilon & Marois 2001: 24). The nearest evidence of a late Paleo-Indian occupation is to be found in proximity to Cornwall where Lanceolate points dated to 8500 – 9500 B.P. have been recovered on Thompson Island (Ritchie 1965).

The subsequent Archaic period (9500 – 2800 B.P.) is characterized by a warming climate and a temperate forest environment. An abundance of streams and rivers intersected the landscape and along with surrounding large fresh water lakes, would have supported many species of fish, shorebirds and mammals. Small hunting and gathering bands (20-50 people) utilized the lake shores during the spring and summer months, then broke into family groups and moved inland for the fall and winter to hunt and trap. Archaic tool assemblages consisted of both chipped and ground/polished stone implements indicating that a wider variety of activities, such as fishing, woodworking and food preparation/grinding, were now taking place.

In eastern Ontario and western Quebec a variant of the Archaic period, known as the Laurentian Archaic, appears around 6000 - 5500 B.P., lasting for a thousand years or more. The Laurentian Archaic is associated with the Canadian biotic province, a unique species community based in mixed deciduous-coniferous forest, the essential characteristics and modern geographical limits of which were established between 7000-5500 B.P. (Cleland 1966). Laurentian Archaic assemblages include broad bladed projectile points, various chipped stone artifacts, and a range of ground and polished stone tools such as semi-lunar knives, adzes, gouges, and un-grooved axes (Ellis et al. 1990). Bone tools such as barbed harpoons, fish hooks, and bi-pointed gorges indicated the exploitation of freshwater fish.

The Archaic period is followed by the Woodland period (ca. 800 B.C. to A.D. 1650) which is subdivided into three phases. The Early Woodland period (ca. 900 – 400 B.C.) is characterized by the introduction of pottery for storage and an increase in regional trade networks. Trading of exotic goods, such as obsidian, silver, copper and sea shells

¹ B.P. refers to 'years before the present', with the year 1950 used as the present date as radiocarbon dating carbon was used in the 1940s, and atmospheric nuclear testing was begun around the same time, suggesting that radiocarbon dates after 1950 are unreliable

persists into the Middle Woodland period (ca. 300 B.C. to A.D. 900) when horticulture was introduced to Ontario. The adoption of food production brought on a more sedentary lifestyle in seasonal villages, and more elaborate burial ceremonies – including the construction of large, earthen mounds. The Late Woodland period (ca. A.D. 900 - 1650) is marked by the establishment of palisaded villages (often containing dozens of longhouse structures), intensified agriculture and an increase in regional warfare.

The late Woodland period occupancy in the region is well documented with several sites in the vicinity of the current study area. There is evidence dating to the early 1400's of the origins of Iroquoian nations with the appearance of very large and concentrated villages. An Iroquoian nation was distinguished by its position as either a large, single village or a cluster of village communities, with a distinct dialect and trade or alliances with other Iroquoian and Algonquian nations (Warrick 2013: 70). Archaeologists have identified two clusters of St. Lawrence Iroquoians in Eastern Ontario in the 1400's, which persisted into the 1500s (Warrick 2013:70). These include the Prescott and Cornwall village clusters. The Cornwall Cluster consists of the sites Summerstown Station, Glenbrook, Berry and Macdougald. Around 1450 A.D., a "cluster of sequentially occupied and contemporaneous large inland agriculture villages appears ... in the vicinity of Prescott" (Pendergast 1975: 48). The villages of the Prescott cluster include Beckstead, Birdge, Cardinal, Cleary, Crystal Rock, Driver, Froom, Kemptville, McIvor, Maynard-McKeown, Roebuck, Steward, 26/VI, and 27/VII (Jamieson 1990: 387). The Roebuck site is probably the most well-known and largest, measuring an impressive 3.2 hectares in size with multiple palisade fences surrounding it and an earthwork for protection (Wright 2004: 1261). An estimated 40 longhouses and 2,000 people would have been found at this village.

The Iroquoian peoples of the Cornwall and Prescott areas practiced a corn horticulture based subsistence supplemented by hunting and fishing with smaller specialized campsites being found along the shores and tributaries of the St. Lawrence River (Jamieson 1990: 398). The St-Lawrence River was a major conduit and a key feature for the trade system, exploited by native populations (Wright 1994).

Post-Contact/Historical Overview of the Former Geographic Township of Cornwall and Stormont County

The study area is located in the geographic Township of Cornwall, former Stormont County, and now part of the United Counties of Stormont, Dundas and Glengarry. In 1788, Cornwall Township was incorporated into the historical District of Lunenburg which extended from the Ottawa River to Gananoque. In 1792, counties were created within the district for electoral and militia purpose and also to facilitate the survey of future townships and land registration (Archives of Ontario 2011). Districts were abolished in 1849 (Archives of Ontario 2011).

Settlement in the St-Lawrence River valley was, however, initiated before the creation of the Lunenburg District. Following the American Revolutionary War (1775-1783), waves of British Loyalists and disbanded soldiers crossed north of the St-Lawrence River seeking protection and lands under the British Crown (Walker & Walker 1968: 1-2). The British government was caught slightly off guard by the migration and quickly initiated negotiations with the Mississauga for land purchase (Walker & Walker 1968: 2). In 1783, the Indian Department conducted the negotiations, known as the “Crawford Purchase”, for the acquisition of an extensive band of land north of the St-Lawrence River which included Stormont County (Walker & Walker 1968: 2). However, the former hunting territory ceded by the Mississauga to the British Crown was already occupied.

It seems that a small community had already been established in the Cornwall area around 1776 (Pringle 1890: 29). The original occupants were likely British subjects who had moved at an earlier time as a result of the war (Pringle 1890: 29). There are no records of their names nor the lands that they occupied. These scattered inhabitants were later integrated into the official 1874 settlement.

The official first settlers were mostly soldiers of Sir John Johnston’s regiments stationed at the fortified post at Île aux Noix waiting to take possession of their land (Belden & Co. 1879). The first survey of Stormont County was undertaken in early 1784 by Major Holland, Patrick McNiff, Kottle and Sutherland (Pringle 1890: 33). Instead of names, numbers were assigned to the new townships. The future Cornwall Township was, thus, named Township No. 2 (Pringle 1890: 33). The town plot of a new settlement called New Johnstown, the future Cornwall, was set up and a government store was constructed near the river (Pringle 1890: 33).

In the summer of 1874, the first settlers arrived and lands were allotted on the basis of a lottery system (Belden & Co. 1879). Each man was granted 100 acres fronting the river, in addition to 200 acres inland (Belden & Co. 1879).

In 1788, New Johnstown became the district town of the Lunenburg District. Around the 1790’s New Johnstown was renamed Cornwall (Pringle 1890: 38).

A map dated to 1792 suggests that the small settlement was already well established in the late eighteenth century with at least 30 land owners living within the town limits (City of Cornwall 2014). Several establishments such as a school house, the King’s store, a doctor, a Presbyterian burying ground, and a Christian church are also illustrated on the map (City of Cornwall 2014).

During the 1812 war, Cornwall became a garrison town, as well as a supply and communications post (City of Cornwall 2014). The town being located on the St-Lawrence River, which was the main transportation corridor between Kingston and Montréal, boats full of supplies regularly passed through it.

The construction of the Cornwall Canal acted as a spring board for the industrial development of the town. The waterway provided water power to mills, tanneries, and textile plants and easy access to a transportation corridor that linked the town to the Montréal market (City of Cornwall 2014). The Cornwall Canal was the first of a series of canals built along the St-Lawrence River in order to facilitate steam boat navigation (Keefer 1887: 1). The construction started in 1834 and the canal was open to navigation in 1842 (Pringle 1890: 162). The original structure extended from Cornwall to Long-Sault (approximately 18 km) and bypassed the Long-Sault rapids with 7 locks (Pringle 1890: 163).

In 1846, Cornwall was an important town in Upper Canada with a population of approximately 1,600 habitants (Smith 1846: 38-39). Several commercial and community establishments such as a courthouse and jail, an Episcopal church, a Catholic church, a Presbyterian church, a Methodist church, a post-office, a newspaper office, various schools, tanneries, taverns, a forge, blacksmiths, tinsmiths, and banks were present (Smith 1846: 38-39).

Another catalyst of local development that occurred in the mid-nineteenth century was the construction of the Grand Trunk Railroad. At the time, Montréal and Toronto were the largest market poles in the country (Andreae 1997: 116-117). The railroad was better than maritime transport in winter and, therefore, supported trades and exchanges between Montréal and Cornwall all year long (Andreae 1997: 116-117). The Grand Trunk Railroad was completed in 1855.

Study Area Specific Land Use

The area of interest spans several lots including part of Lot 7, Lot 8, and Lot 9, Concession 2 in the City of Cornwall. Part of the area is now occupied by the Municipal Works yard.

The study area is located north of the original town plot, and therefore, was most likely not occupied during the eighteenth century.

Historical atlases such as the *Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russel, Canada West* (Walling 1862) and the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) were consulted in order to collate information on the past historical development of the study area. Aerial photographs dated to the twentieth century (NAPL) were also collected to evaluate modern disturbances.

A segment of the *Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell, Canada West* (Walling 1862) provides the earliest illustration of the area of interest (**Figure 2**). The study area is bounded by roads at the west (now Pitt Street)

and east (now McConnell Avenue). Lot 7 seems to be vacant. Residents are listed on both Lot 8 and Lot 9. Mrs. Crites (?) is living on the west half of Lot 8 and H. Crawford resided on the eastern half. Henry Crawford is listed in the 1851 personal census (LAC: 1851 Census, Stormont County, Cornwall Township, pp. 55-56). Crawford was a 42 year-old blacksmith living in a one story log house with his wife Elizabeth. His name with identical information reappeared in the 1861 personal census (LAC: 1861 Census, Stormont County, Cornwall Township, pp. 37-38). S. Cline occupied the western half of Lot 9. Samuel Cline, a 44 year-old merchant, is listed in the 1861 personal census (LAC: 1861 Census, Stormont County, Cornwall Township, pp.2-3). He was living in a two and a half storey brick house with his wife Margaret (?) and his children. The dwelling illustrated adjacent to the street could potentially correspond to the brick house. However, this building is located outside the study area. The east half of the lot could be vacant as no residents are listed.

A segment of the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) depicts the study area two decades later (**Figure 3**). The map indicates that several changes have occurred within the study area. Between 1862 and 1879, a fairground has been established on the west half of Lot 9. A race track is shown on the southern part of the fairground and several structures, most likely barns, are illustrated north of the track. One of those buildings is situated in the vicinity of the study area. The east half of the Lot has been divided. S. Cline still occupied the northern portion and J. Danahar resided on the southern part. On Lot 8, R. Craig occupied the west half and J. Gallinger resided on the east half. One structure, most likely a dwelling related to J. Gallinger occupancy, is standing in the southernmost portion of the study area. Regarding Lot 7, R. Craig occupied the west half and Van Koughnolls resided on the east half.

The 1871 and the 1881 censuses of the Township of Cornwall are not available as they were most likely destroyed during the 1897 West Block fire.

TABLE 1: HISTORIC LAND OWNERS AND FEATURES LOCATED WITHIN THE STUDY AREA

Con.	Lot	1861 Census	1862 Walling Map	1879 Belden Map
2	7	-	possibly vacant	Van Koughnolls (east half) R. Craig (west half)
2	8	Henry Crawford, blacksmith, log house	H. Crawford (east half) Mrs. Crites (?) (west half)	J. Gallinger, one structure (east half) R. Craig

Con.	Lot	1861 Census	1862 Walling Map	1879 Belden Map
		-		(west half)
2	9	Samuel Cline, merchant, brick house	S. Cline (west half)	S. Cline & J. Danahar (east half) Fairground, several structures (west half)

An aerial photograph (NAPL: A1096-312-18) captures the study area in 1957 (**Figure 4**). Very few disturbances have occurred. Most of the area consists of cultivated lands divided by tamped earth laneways. None of the structures depicted on the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) has survived. Ground disturbance has occurred in the central portion of Lot 8. In the southernmost portion of the study area, a few structures, likely houses and farm related buildings, have been erected. Nevertheless, the location of the Gallinger's dwelling and the area of the fairground (Belden & Co. 1879) remained undisturbed. No development has occurred on Lot 7.

A second aerial photograph dated to 1972 (NAPL: A72363-56 & A72363-57) shows disturbances that have occurred within the study area (**Figure 5**). Housing developments bounded the north-west portion and the southernmost part of the study area. Portions of Lemay Street, 13th Street East and Ontario Street have been built between 1957 and 1972. Rows of houses are situated in the central part of the Lemay Street segment. Several structures, likely garages, and an unpaved parking lot have been built in the southernmost area. Some superficial soil disturbance may have occurred under the location of Gallinger's dwelling (Belden & Co. 1879). Part of the former fairground area is disturbed by 13th Street East. No development has occurred on Lot 7.

The last aerial photograph shows the study area in 1986 (NAPL: A86109-133) (**Figure 6**). Housing development extends to most parts of Lemay Street and 13th Street East. More of the fairground area has been impacted by houses construction; only the area south of 13th Street East remains undisturbed. The garages and the parking lot located in the southernmost area are still standing and some structures have been replaced by bigger construction. The location of Gallinger's dwelling remains undisturbed. No development has occurred on Lot 7.

Today, few more disturbances have occurred as part of the east half of Lot 7 has been disturbed by housing development and by the construction of a street segment (Lemay Street) (**Figure 7**).

1.3 ARCHAEOLOGICAL CONTEXT

Description of the Study Area

As noted, the study area consists of an interrupted street segment that is 1,182 metre long in addition to the Municipal Works yard area. The area of interest covers approximately 7.38 hectares in size. It is bounded to the east by McConnell Avenue and to the west by Pitt Street. Overall, the study area is comprised of modern houses, part of the Municipal Works yard which includes garages and paved parking lot, and undeveloped lands (**Figure 7**).

Determining Archaeological Potential

Based on past archaeological findings in the province, the MTCS has identified criteria that can be used to evaluate a property's archaeological potential. These criteria are related to various geographic and cultural-historic features which would have influenced land / resource use and settlement by past peoples (Ministry of Tourism, Culture, and Sport, 2011) and include such characteristics as:

- previously known archaeological sites within 300 metres of the subject property
- water sources within 300 metres of the subject property, including primary (lakes, rivers, streams, creeks), secondary (springs, marshes, seasonal creeks and streams) and past (glacial shorelines or relic stream channels) water sources
- elevated topography (drumlins, knolls, plateaux)
- areas of well-drained, sandy soils
- distinctive land formations that might have been special or spiritual places (waterfalls, rock outcrops, caves, mounds and promontories and their bases)
- resource areas (animal migratory routes, spawning areas, raw material or plant procurement locations) and early Euro-Canadian industry (fur trade, logging and mining)
- areas of early Euro-Canadian pioneer settlement and / or transportation routes (trails, roads, railways, portage routes, wharf or dock complexes)
- properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations

By determining if one (or any) of these criteria are present, archaeologists are able to estimate whether a property has low, moderate or high potential for containing archaeological remains.

Physiography of the Study Area

The Proposed Lemay Street and Municipal Works Yard Project study area is located in the Lancaster Flats Physiographic Region of Ontario (**Figure 8**).

The Lancaster Flats is a small area found in the vicinity of the St-Lawrence River composed of clayish and fine sand deposits buried under till plain (Chapman and Putnam 1984:205). The relief is generally flat with exposed stony crests, few drumlins and ridges (Chapman and Putnam 1984:205). There are only a few streams and rivers to help drain the region toward the St-Lawrence River, however, the area is still poorly drained because of its topography (Chapman and Putnam 1984:205). Podzolic horizons consisting of deep black upper stratum overlaying mottled ferrous sandy subsoil are to be found in the area (Chapman and Putnam 1984:205). The original forest cover consisted of American elm, white ash and red maple (Chapman and Putnam 1984:205).

The study area is in close proximity to several sources of potable water. A small stream traversed the southernmost portion of Municipal Works yard (**Figure 9**). The general topography of the study area is flat with elevations ranging from 50 to 60 metre above sea level (**Figure 9**).

Registered Archaeological Sites

Archaeological potential is increased by the proximity of other known archaeological sites. In order to compile an inventory of archaeology resources for the study area, three sources of information were requested and/or accessed: the site record forms for registered sites housed at the MTCS, published and unpublished documentary sources.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological registered sites within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on longitude and latitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referred by a four letter designation and sites located within the block are numbered sequentially as they are found.

Site record forms from the OASD indicate there is no previously registered site located within a 1 kilometer radius of the study area (MTCS 2015b).

There is no archaeological fieldwork conducted within 50 metres from the study area (MTCS 2015b).

There is no provincially or federally designated property within or in the vicinity of the study area (CRHP 2015; MTCS 2015a).

2.0 RESULTS AND ANALYSIS

The results of the Stage 1 assessment indicate that, while some of the lands within the existing study area have been disturbed by past development, there remains high archaeological potential for both Euro-Canadian and Aboriginal resources.

No optional property inspection was undertaken. Instead, detailed mapping, satellite imagery, and current and archival aerial photographs were used in order to evaluate the property's archaeological potential.

The physiography of the study area, consisting of sandy soil and with a stream traversing the study area, demonstrates features of potential for the recovery of Pre-Contact sites. The study area proximity to the Cornwall cluster of Iroquoian villages also indicates that the area has supported Pre-Contact settlement and land-uses during the Woodland period.

The background study demonstrates that some historic structures such as a dwelling and building associated with a fairground and historic roadways are potentially situated within or in the vicinity of the study area.

However, information retrieved from the aerial photographs indicates that disturbances related to the housing development and the construction of the Municipal Works yard have occurred during the second half of the twentieth century in most parts of the study area. Nevertheless, some areas of potential including the southernmost portion of the Municipal Works yard and the undeveloped portion of Lot 7 remain undisturbed.

At the time of writing, the design phase for the Lemay Street and Municipal Works Yard Project had not been finalized, and therefore, areas of impact were unknown.

Consequently, only areas to be impacted by the future development that have not been previously assessed or have not been identified as disturbed will require Stage 2 Archaeological Assessment.

3.0 RECOMMENDATIONS

For lands within the study area that will be impacted by the Proposed Lemay Street and Municipal Works Yard Project, AECOM makes the following recommendations:

- 1) A Stage 2 Archaeological Assessment should be conducted by a licenced consultant archaeologist using the test pit survey method at 5m intervals only in areas to be impacted by the proposed development which have not recently been ploughed or do not have appropriate conditions for pedestrian survey at the time of the Stage 2 assessment. The Stage 2 Archaeological Assessment will follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Ministry of Tourism, Culture and Sport, 2011).
- 2) No further archaeological assessments are recommended for areas that are marked in red in **Appendix A, Figure 10**, as these areas are disturbed.

The above recommendations are subject to *Ministry of Tourism, Culture and Sport approval*, and it is an offence to alter any archaeological site without Ministry of Tourism, Culture and Sport concurrence. No grading or other activities that may result in the destruction or disturbance of an archaeological site are permitted until notice of Ministry of Tourism, Culture and Sport approval has been received.

4.0 STANDARD CLAUSES

a) This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licencing in accordance with Part IV of the *Ontario Heritage Act, R.S.O. 1990, c O.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, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

b) It is an offence 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 a 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 Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

c) 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*.

d) The *Cemeteries Act, R.S.O. 1990, c.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.

e) Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

Documentation related to the archaeological assessment of this project will be curated by URS Canada until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner, the Ontario Ministry of Tourism, Culture and Sport and any other legitimate interest groups.

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1861 Census

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APPENDIX A: FIGURES

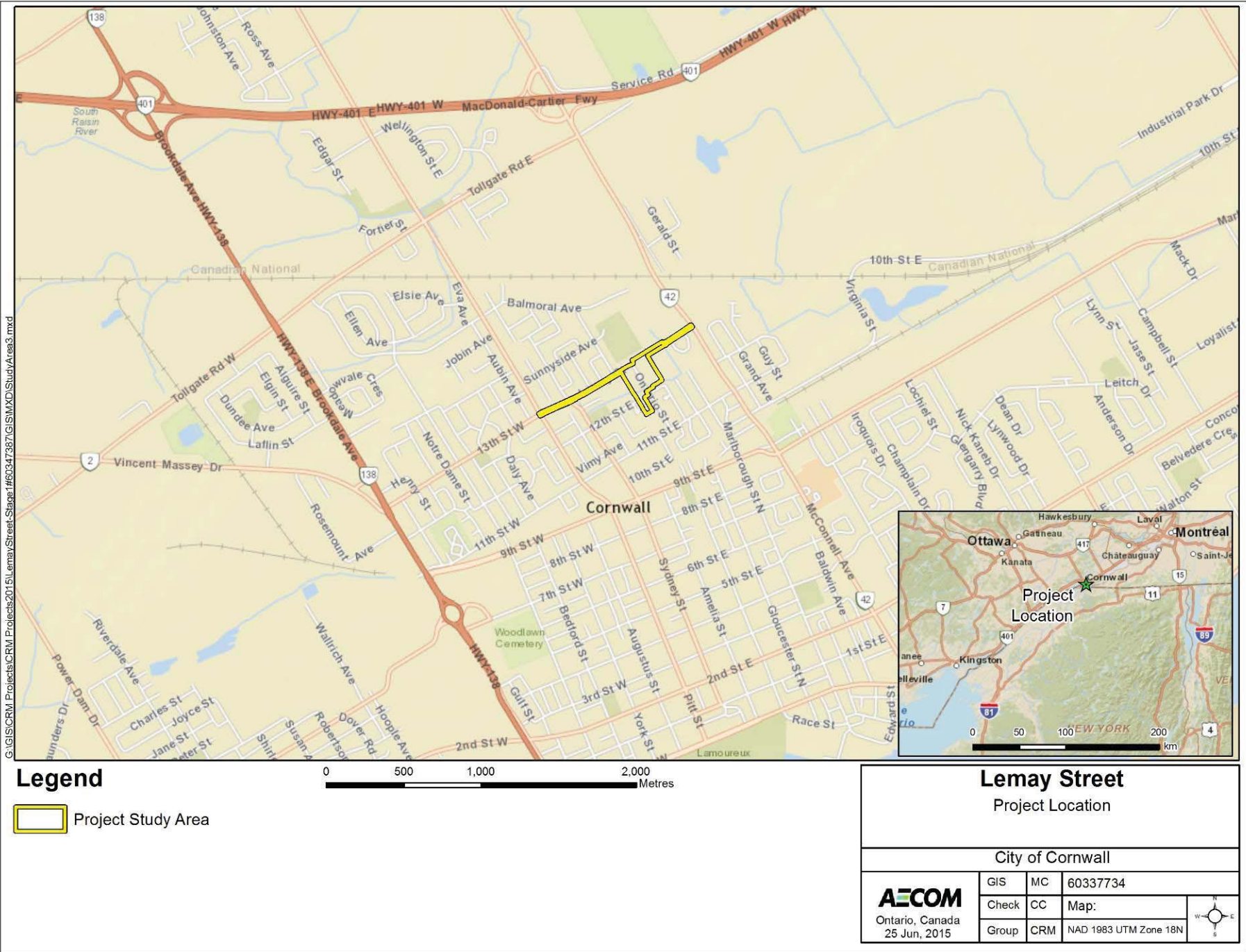


FIGURE 1: LOCATION OF STUDY AREA

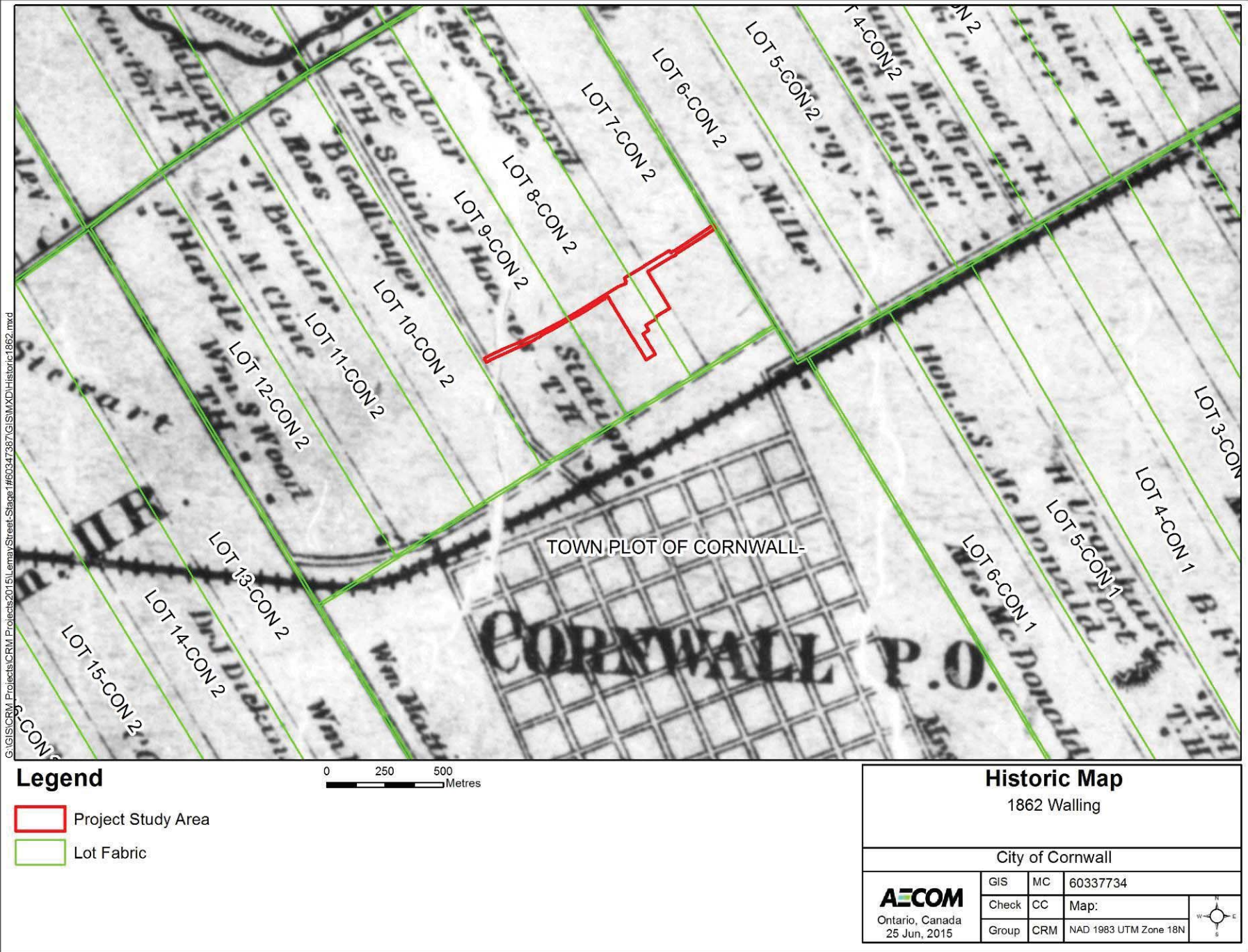


FIGURE 2: SEGMENT OF THE MAP OF THE COUNTIES OF STORMONT, DUNDAS, GLENGARRY, PRESCOTT & RUSSEL, CANADA WEST, (WALLING 1862).

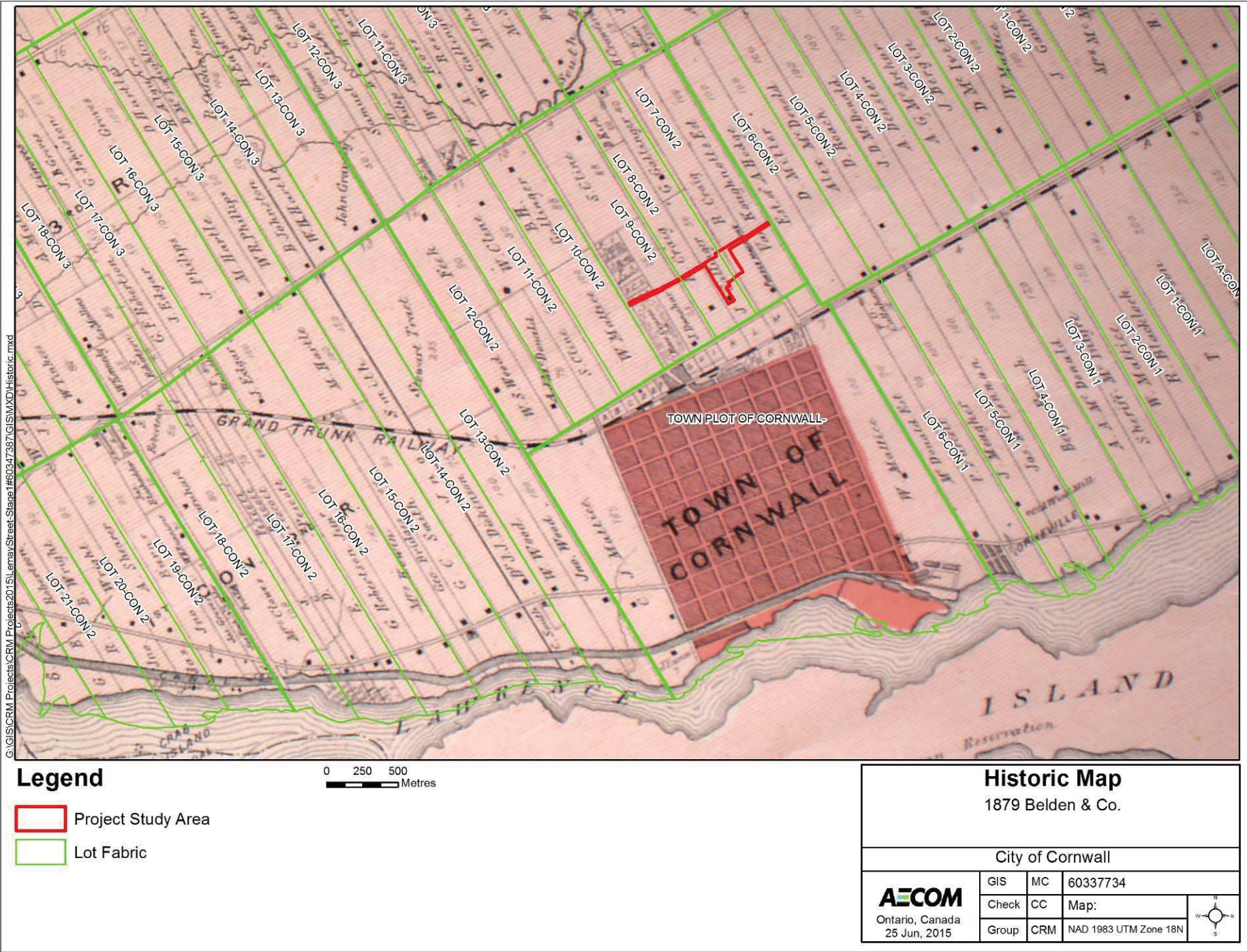


FIGURE 3: SEGMENT OF THE ILLUSTRATED HISTORICAL ATLAS OF THE COUNTIES OF STORMONT, DUNDAS & GLENGARRY (BELDEN & CO. 1879)

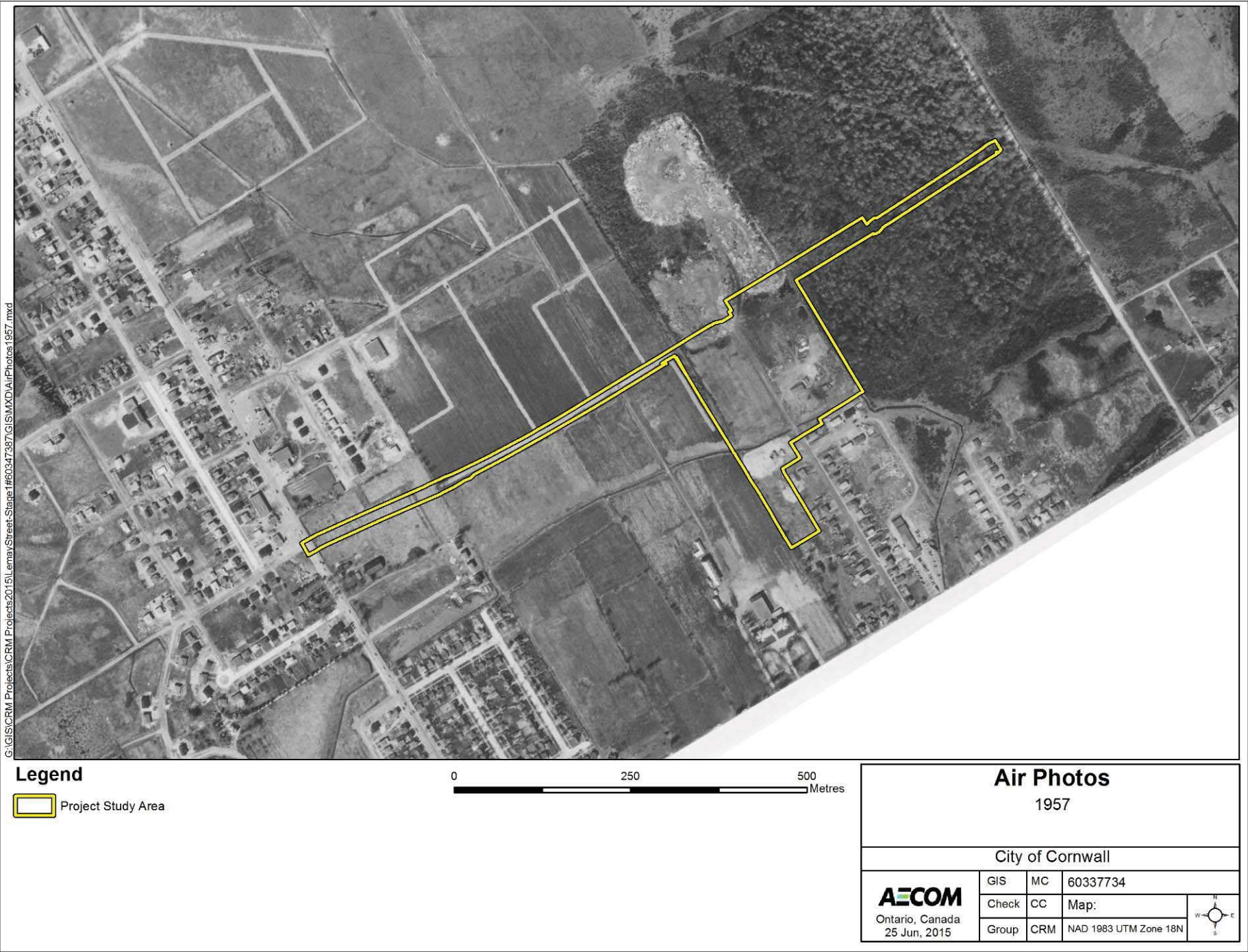


FIGURE 4: SEGMENT OF AN AERIAL PHOTOGRAPH DATED TO 1957 (NAPL: A1096-312-18)

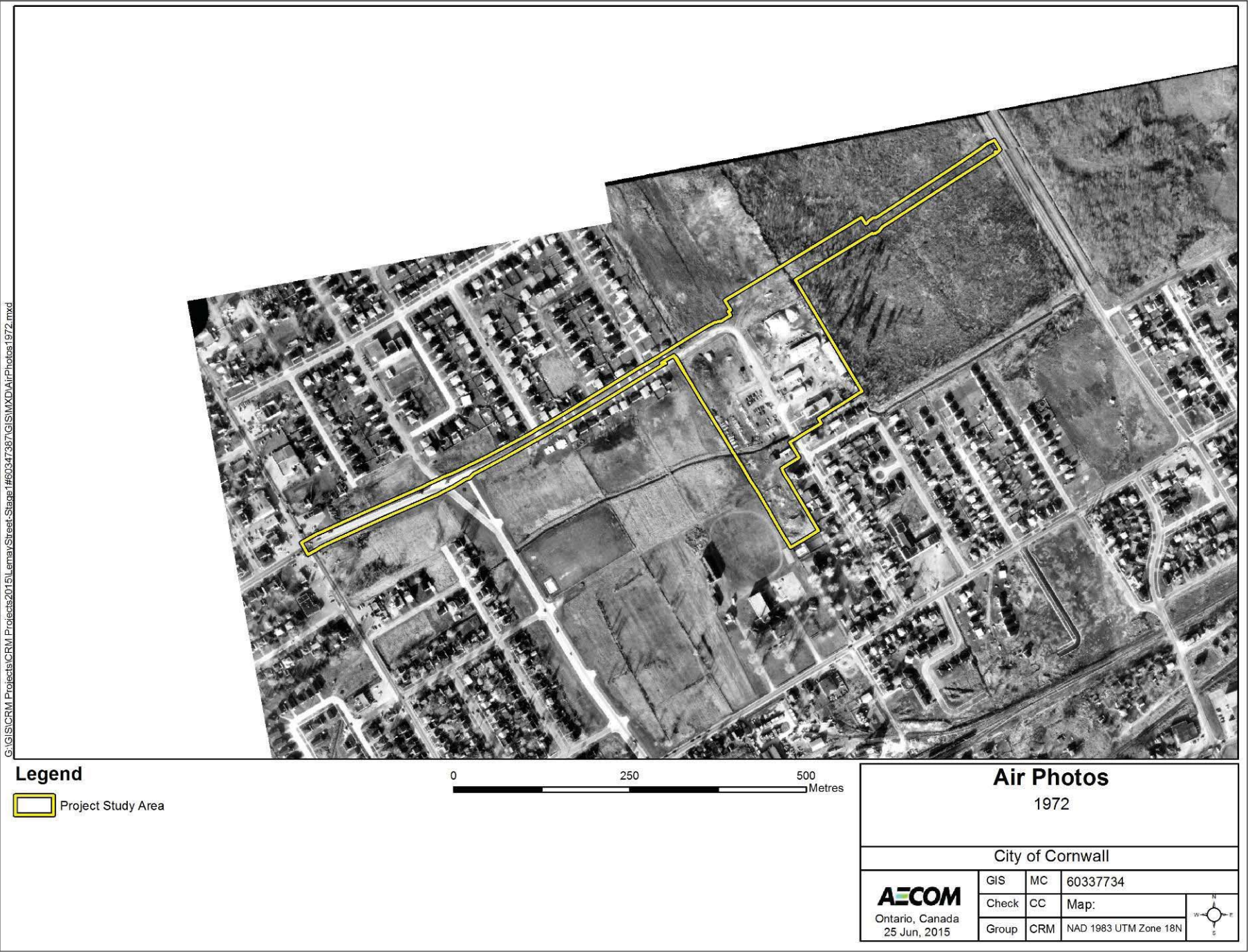


FIGURE 5: SEGMENT OF AN AERIAL PHOTOGRAPH DATED TO 1972 (NAPL: A72363-56 & A72363-57)

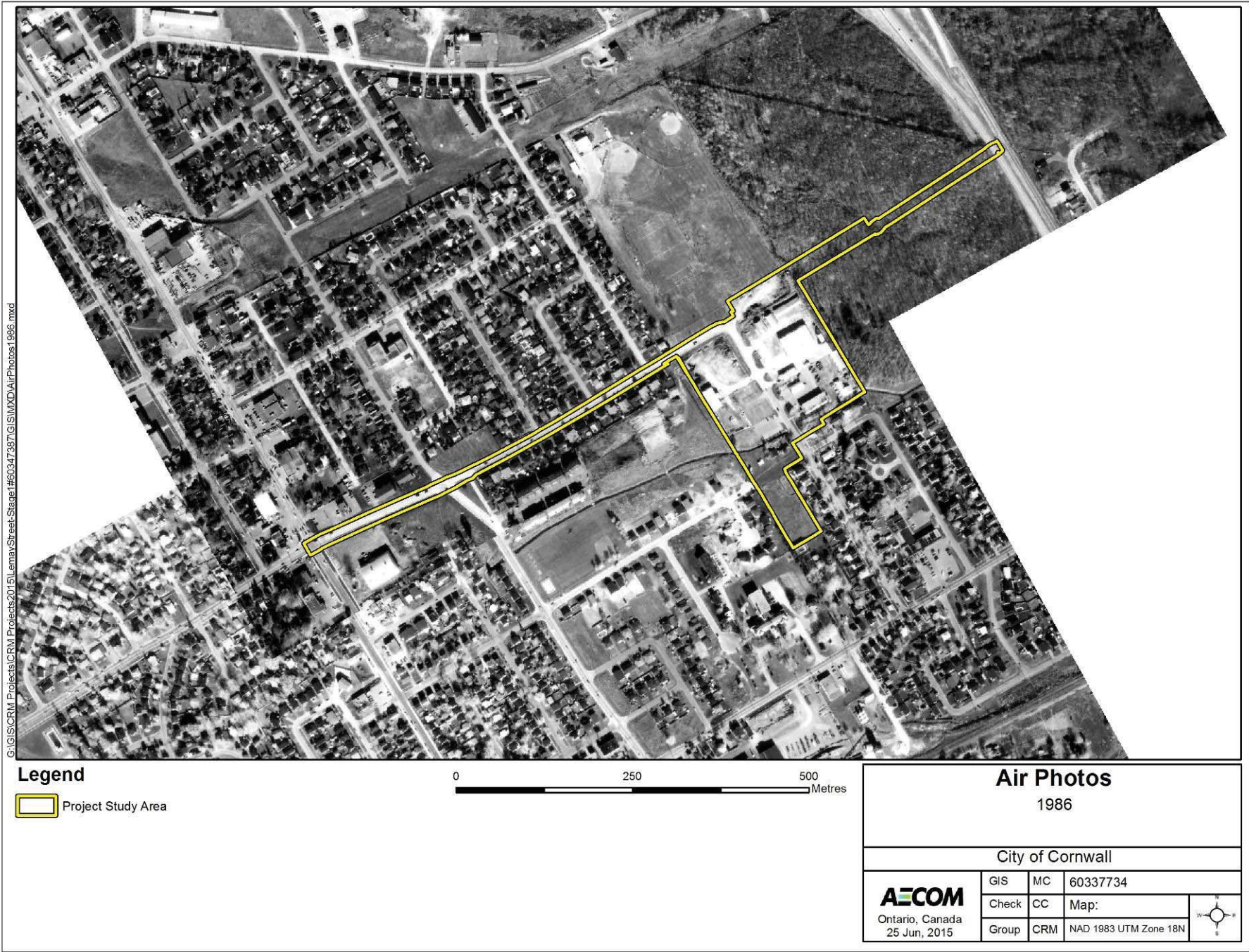


FIGURE 6: SEGMENT OF AN AERIAL PHOTOGRAPH DATED TO 1986 (NAPL: A86109-133)

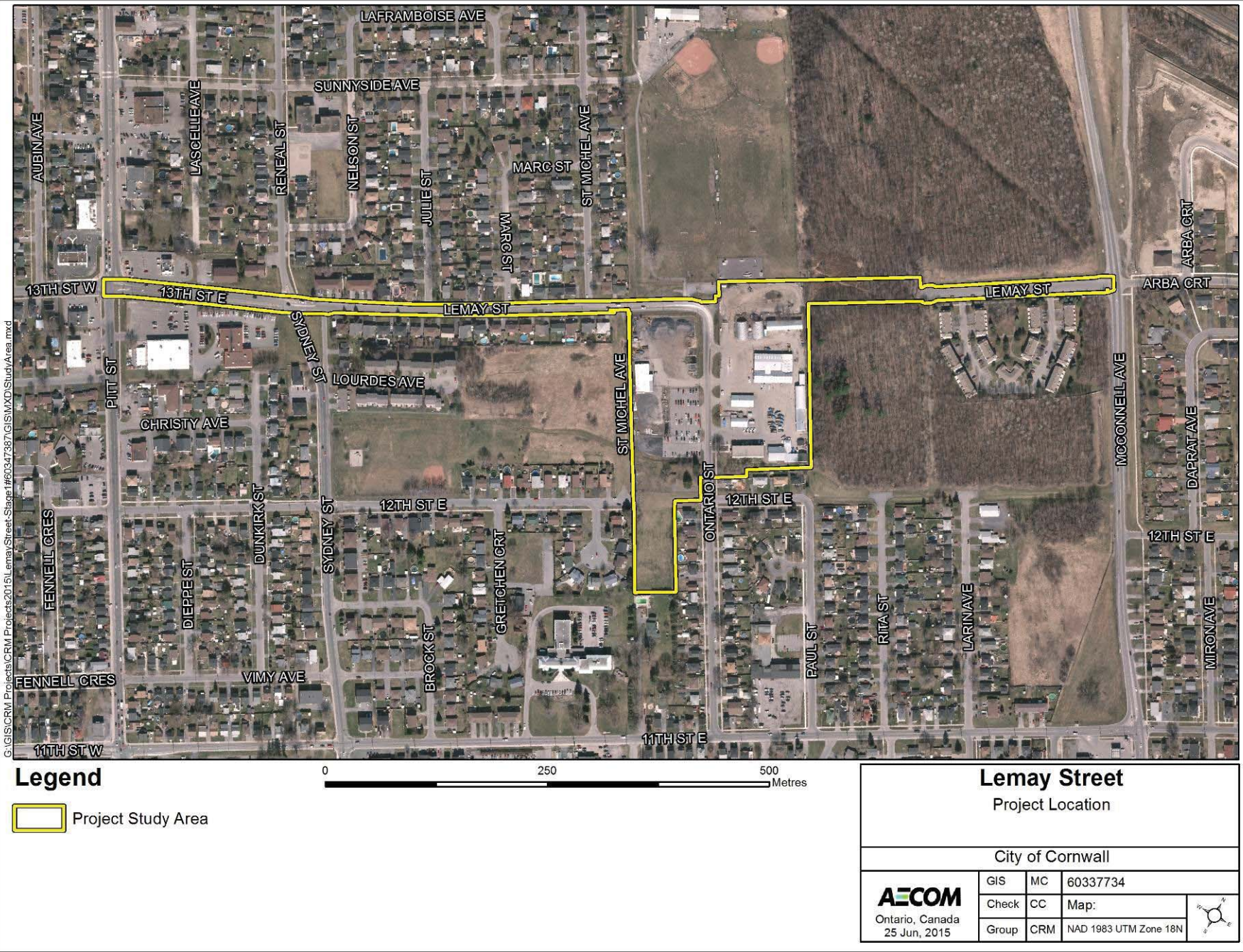


FIGURE 7: AERIAL VIEW OF THE STUDY AREA

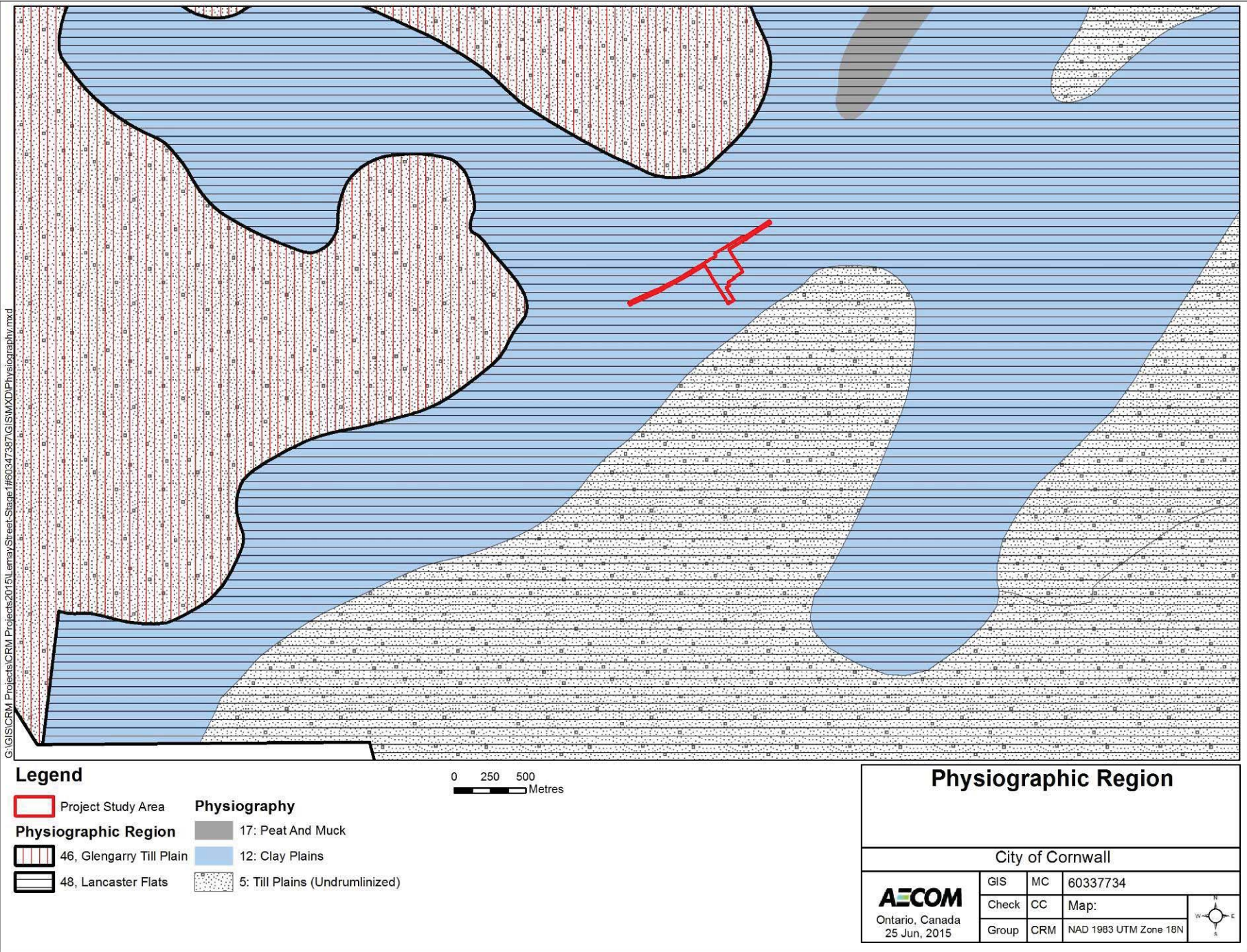


FIGURE 8: PHYSIOGRAPHY OF THE STUDY AREA

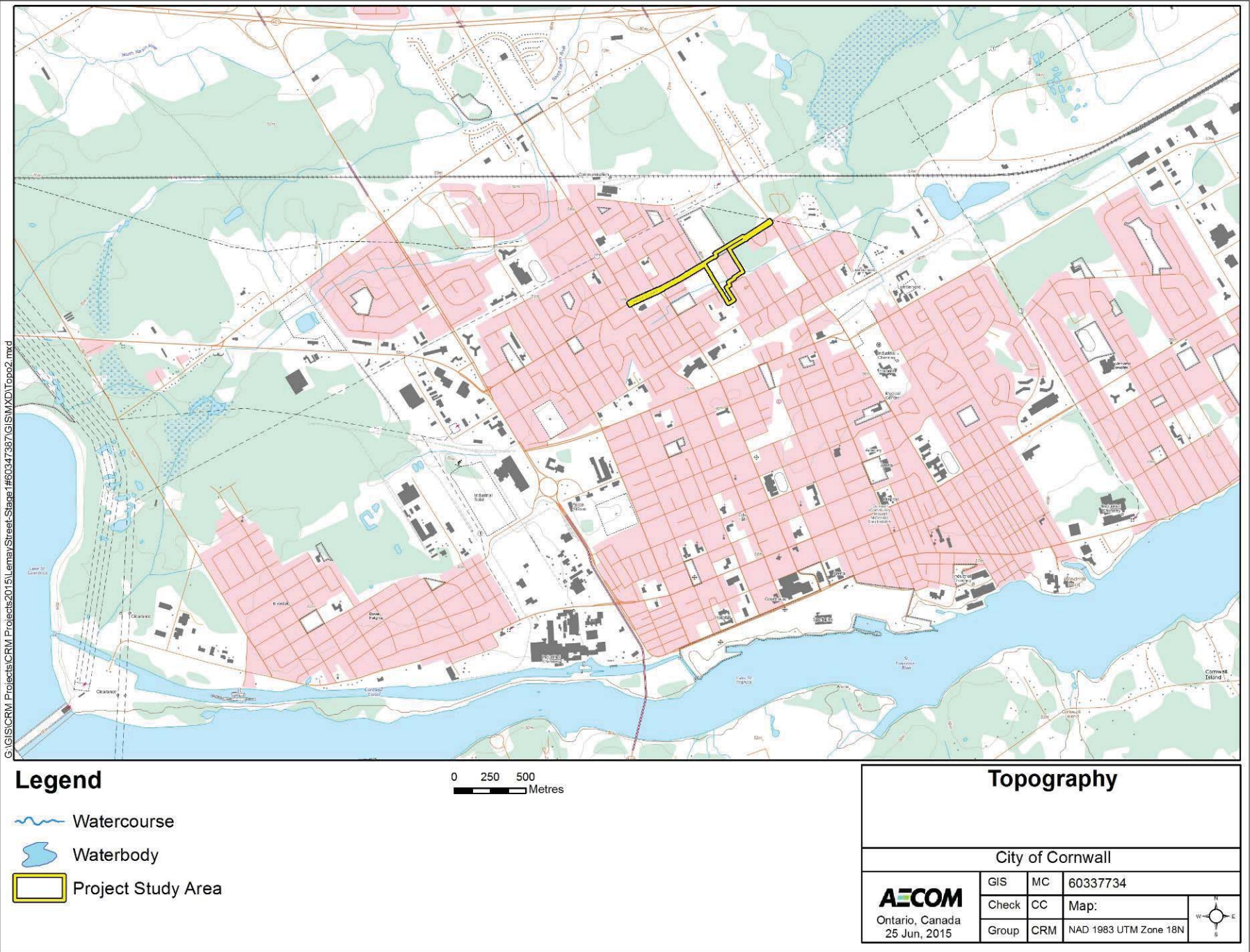


FIGURE 9: TOPOGRAPHY OF THE STUDY AREA

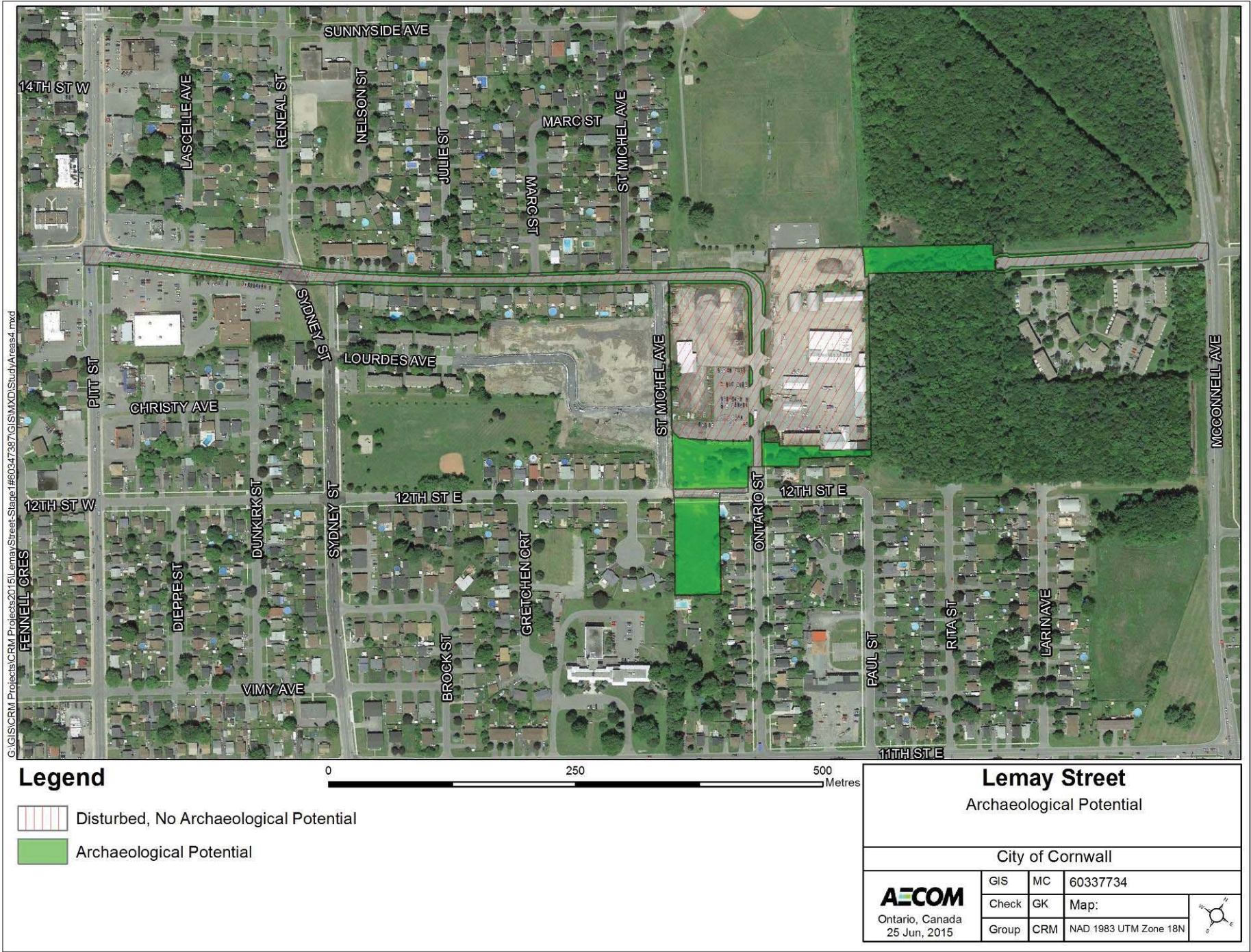


FIGURE 10: ARCHAEOLOGICAL POTENTIAL MAP

- **Stage 2 Archaeological Assessment**

City of Cornwall

Stage 2 Archaeological Assessment

Improvements and Extension of Lemay Street Project

**Part of Lots 7, 8, and 9, Concession 2, Township of Cornwall, in the United
Counties of Stormont, Dundas and Glengarry, Ontario**

Licensee: Catherine Dupont

License: P395

PIF Number: P395-0010-2015

Associated PIF: P395-0008-2015

Prepared by:

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Date:

January, 2016

ORIGINAL REPORT

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Revision Log

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0	C. Dupont	January 2016	Final

AECOM Signatures

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**Report Reviewed
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Melissa Wallace, MA
Archaeological Field Director

Executive Summary

AECOM was retained by the City of Cornwall to conduct a Stage 2 Archaeological Assessment of the Improvements and Extension of the Lemay Street Project on part of Lots 7, 8, 9 and 10, Concession 2, Township of Cornwall, in the United Counties of Stormont, Dundas and Glengarry.

The study area is approximately 3.22 hectares in size. It consists of a street corridor that spans a portion of 13th Street East, two segments of Lemay Street separated by a forested lot, and a small strip of land that corresponds to a future ramp connecting a parking lot to Sydney Street. This Stage 2 assessment is being done as part of a Schedule “C” Municipal Class Environmental Assessment (MCEA).

A Stage 1 Archaeological Assessment was conducted by AECOM in 2015 for the Proposed Lemay Street and Works Yard Project (AECOM 2015). The results of the Stage 1 assessment indicated that, while some of the lands within the existing study area have been disturbed by past development, there remained high archaeological potential for both Euro-Canadian and Aboriginal resources. Therefore, Stage 2 Archaeological Assessment was recommended in order to determine if archaeological resources are present within the study area.

In order to address this recommendation, a Stage 2 Archaeological Assessment was performed on November 4th, 2015 for the Improvements and Extension of Lemay Street Project. The wooded lot was test pitted at 5 metre intervals, while areas of steep slope and low and wet areas were not assessed. Given the apparent disturbance related to utilities, the right-of-way (ROW) of all street segments was visually inspected and test pits were dug to document the extent of the disturbance. No evidence of cultural features or artifacts was found during the Stage 2 Archaeological Assessment.

Based on the results of this assessment, AECOM makes the following recommendation:

- 1) That this study area be cleared of further archaeological concern, as no archaeological materials were found as a result of this Stage 2 Archaeological Assessment.

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any archaeological site without Ministry of Tourism, Culture and Sport concurrence. No grading or other activities that may result in the destruction or disturbance of an archaeological site are permitted until notice of Ministry of Tourism, Culture and Sport approval has been received.

Project Personnel

Project Administrator	Catherine Dupont, M.A. [P395]
Field Director	Catherine Dupont, M.A. [P395]
Field Technician	Eric Millette
Report Production	Catherine Dupont, M.A. [P395]
Senior Review	Charlton Carscallen [P088]
GIS Analyst	Michael Collins, B.Sc.

Acknowledgements

Ministry of Tourism, Culture and Sport	Robert von Bitter, Archaeological Data Coordinator Archaeological Review Officer
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1. Project Context

1.1 Development Context

AECOM was retained by the City of Cornwall to conduct a Stage 2 Archaeological Assessment of the Improvements and Extension of Lemay Street Project on part of Lots 7, 8, and 9, Concession 2, in the Township of Cornwall, United Counties of Stormont, Dundas and Glengarry. The study area totals 3.22 hectares and consists of a street corridor that spans a portion of 13th Street, two segments of Lemay Street separated by a forested lot, and a small strip of land that corresponds to a future ramp connecting a parking lot to Sydney Street (**Figure 1** provided in Section 8).

This Stage 2 assessment is being done as part of a Schedule 'C' Municipal Class Environmental Assessment (MCEA). The Improvements and Extension of Lemay Street Project will include the extension of Lemay Street from Ontario Street to McConnell Avenue as well as roadway improvements for the street that spans 13th Street to Lemay Street at its intersection with Ontario Street. The improvements will include widening Lemay Street within the right-of-way (ROW) for the installation of bike lines and sidewalks, as well as reconfiguring two intersections (Sydney Street and 13th Street East, and, Lemay Street and McConnell Ave.) into roundabouts.

A Stage 1 Archaeological Assessment was undertaken in 2015 for the Proposed Lemay Street Project and Works Yard Project to provide background information and to evaluate the archaeological potential of the study area (AECOM 2015). The results of that study demonstrated that even if information retrieved from the aerial photographs indicated that disturbances related to the housing development had occurred during the second half of the twentieth century in most of the study area, some areas exhibited potential for the recovery of aboriginal resources as well as historic features and artifacts. Therefore, Stage 2 Archaeological Assessments were recommended for the study area.

At the time, the area under investigation consisted of the current study area in addition to portions of the municipal yard related to the Works Yard Project.

In order to address this recommendation a Stage 2 Archaeological Assessment was performed on November 4th, 2015. The Improvement of the Works Yard Project and related areas are not covered by this Stage 2 assessment since this project did not fall under the MCEA process. The assessment was carried out under the project direction of Charlton Carscallen [licence #P088] (AECOM) and under the archaeological licence #P395 issued to Catherine Dupont (AECOM) in accordance with the provisions of the Ontario Heritage Act (2005) and with the *Standards and Guidelines for Consultant Archaeologists* (2011), formulated by the Ministry of Tourism, Culture and Sport (MTCS).

Permission to access properties and to conduct all required archaeological fieldwork, including the recovery of artifacts, was granted by the land owner. No limits were placed on this access.

1.2 Historical Context

1.2.1 Pre-Contact Aboriginal Settlement

Although glaciers retreated from the Ottawa region of eastern Ontario some 13,000 years ago, the massive weight of these ice sheets left the earth's crust compressed, lowering the area below sea level and allowing sea water to flow inland forming the Champlain Sea. Over the next 3000 years, the Champlain Sea gradually receded as the earth's crust rebounded, eventually permitting the first inhabitants to move into the region in subsequent years. Paleo-Indian sites are concentrated in Ontario and southern New York State. Paleo-Indians were widely scattered, nomadic groups that occupied the sub-tundra-like environment that prevailed in Ontario at the end of the Pleistocene. Past research indicates that these groups likely followed big game (such as Caribou) across the landscape, preferring to camp on high ground, immediately adjacent to water sources, such as glacial lakes or spillways, where smaller game and plant foods would have been harvested. Relatively large fluted projectile points are the hallmark of the Paleo-Indian toolkit.

The barrier presented by the Champlain Sea explains why sites of Ontario's first occupants, Paleo-Indians, (ca. 11,000 – 9500 Before Present (B.P.) B.P.¹) are largely absent from the Ottawa valley. Areas of high potential for such sites would be ancient shorelines of the Champlain Sea. The geomorphology of the region, being rocky and elevated land, does not allow for retracing ancient shorelines (Pilon & Marois 2001: 24). The nearest evidence of a late Paleo-Indian occupation is to be found on Thompson Island in proximity to Cornwall where Lanceolate points dated to 8500 – 9500 B.P. have been recovered (Ritchie 1965).

The subsequent Archaic period (9500 – 2800 B.P.) is characterized by a warming climate and a temperate forest environment. An abundance of streams and rivers intersected the landscape and along with surrounding large fresh water lakes, would have supported many species of fish, shorebirds and mammals. Small hunting and gathering bands (20-50 people) utilized the lake shores during the spring and summer months, then broke into family groups and moved inland for the fall and winter to hunt and trap. Archaic tool assemblages consisted of both chipped and ground/polished stone implements indicating that a wider variety of activities, such as fishing, woodworking and food preparation/grinding, were now taking place.

In eastern Ontario and western Quebec a variant of the Archaic period, known as the Laurentian Archaic, appears around 6000 - 5500 B.P., lasting for a thousand years or more. The Laurentian Archaic is associated with the Canadian biotic province, a unique species community based in mixed deciduous-coniferous forest, the essential characteristics and modern geographical limits of which were established between 7000-5500 B.P. (Cleland 1966). Laurentian Archaic assemblages include broad bladed projectile points, various chipped stone artifacts, and a range of ground and polished stone tools such as semi-lunar knives, adzes, gouges, and un-grooved axes (Ellis et al. 1990). Bone tools such as barbed harpoons, fish hooks, and bi-pointed gorges indicated the exploitation of freshwater fish.

The Archaic period is followed by the Woodland period (ca. 800 B.C. to A.D. 1650), which is subdivided into three phases. The Early Woodland period (ca. 900 – 400 B.C.) is characterized by the introduction of pottery for storage and an increase in regional trade networks. Trading of exotic goods, such as obsidian, silver, copper and sea shells persists into the Middle Woodland period (ca. 300 B.C. to A.D. 900) when horticulture was introduced to Ontario. The adoption of food production brought on a more sedentary lifestyle in seasonal villages, and more elaborate burial ceremonies – including the construction of large, earthen mounds. The Late Woodland period (ca. A.D. 900 - 1650) is marked by the establishment of palisaded villages (often containing dozens of longhouse structures), intensified agriculture and an increase in regional warfare.

The late Woodland period occupancy in the region is well documented with several sites in the vicinity of the current study area. There is evidence dating to the early 1400's of the origins of Iroquoian nations with the appearance of very large and concentrated villages. An Iroquoian nation was distinguished by its position as either a large, single village or a cluster of village communities, with a distinct dialect and trade or alliances with other Iroquoian and Algonquian nations (Warrick 2013: 70). Archaeologists have identified two clusters of St. Lawrence Iroquoians in Eastern Ontario in the 1400's, which persisted into the 1500's (Warrick 2013:70). These include the Prescott and Cornwall village clusters. The Cornwall Cluster consists of the sites Summerstown Station, Glenbrook, Berry and Macdougald. Around 1450 A.D., a "cluster of sequentially occupied and contemporaneous large inland agriculture villages appears ... in the vicinity of Prescott" (Pendergast 1975: 48). The villages of the Prescott cluster include Beckstead, Bridge, Cardinal, Cleary, Crystal Rock, Driver, From, Kemptville, McIvor, Maynard-McKeown, Roebuck, Steward, 26/VI, and 27/VII (Jamieson 1990: 387). The Roebuck site is probably the most well-known and largest, measuring an impressive 3.2 hectares in size with multiple palisade fences surrounding it and an earthwork for protection (Wright 2004: 1261). An estimated 40 longhouses and 2,000 people would have been found at this village.

¹ B.P. refers to 'years before the present', with the year 1950 used as the present date as radiocarbon dating carbon was used in the 1940s, and atmospheric nuclear testing was begun around the same time, suggesting that radiocarbon dates after 1950 are unreliable

The Iroquoian peoples of the Cornwall and Prescott areas practiced a corn horticulture-based subsistence supplemented by hunting and fishing with smaller specialized campsites being found along the shores and tributaries of the St. Lawrence River (Jamieson 1990: 398). The St. Lawrence River was a major conduit and a key feature of the trade system, exploited by native populations (Wright 1994).

1.2.2 Euro-Canadian Settlement

The study area is located in the geographic Township of Cornwall, former Stormont County, and now part of the United Counties of Stormont, Dundas and Glengarry. In 1788, Cornwall Township was incorporated into the historical District of Lunenburg, which extended from the Ottawa River to Gananoque. In 1792, counties were created within the district for electoral and militia purpose and also to facilitate the survey of future townships and land registration (Archives of Ontario 2011). Districts were abolished in 1849 (Archives of Ontario 2011).

Settlement in the St-Lawrence River valley was, however, initiated before the creation of the Lunenburg District. Following the American Revolutionary War (1775-1783), waves of British Loyalists and disbanded soldiers crossed north of the St-Lawrence River seeking protection and lands under the British Crown (Walker & Walker 1968: 1-2). The British government was caught slightly off guard by the migration and quickly initiated negotiations with the Mississauga for land purchase (Walker & Walker 1968: 2). In 1783, the Indian Department conducted the negotiations, known as the "Crawford Purchase", for the acquisition of an extensive band of land north of the St. Lawrence River which included Stormont County (Walker & Walker 1968: 2). However, the former hunting territory ceded by the Mississauga to the British Crown was already occupied.

It seems that a small community had already been established in the Cornwall area around 1776 (Pringle 1890: 29). The original occupants were likely British subjects who had moved at an earlier time as a result of the war (Pringle 1890: 29). There are no records of their names nor the lands that they occupied. These scattered inhabitants were later integrated into the official 1874 settlement.

The official first settlers were mostly soldiers of Sir John Johnston's regiments stationed at the fortified post at Île aux Noix waiting to take possession of their land (Belden & Co. 1879). The first survey of Stormont County was undertaken in early 1784 by Major Holland, Patrick McNiff, Kettle and Sutherland (Pringle 1890: 33). Instead of names, numbers were assigned to the new townships. The future Cornwall Township was, thus, named Township No. 2 (Pringle 1890: 33). The town plot of a new settlement called New Johnstown, the future Cornwall, was set up and a government store was constructed near the river (Pringle 1890: 33).

In the summer of 1874, the first settlers arrived and lands were allotted on the basis of a lottery system (Belden & Co. 1879). Each man was granted 100 acres fronting the river, in addition to 200 acres inland (Belden & Co. 1879).

In 1788, New Johnstown became the district town of the Lunenburg District. Around the 1790's New Johnstown was renamed Cornwall (Pringle 1890: 38).

A map dated to 1792 suggests that the small settlement was already well established in the late eighteenth century with at least 30 land owners living within the town limits (City of Cornwall 2014). Several establishments such as a school house, the King's store, a doctor, a Presbyterian burying ground, and a Christian church are also illustrated on the map (City of Cornwall 2014).

During the 1812 war, Cornwall became a garrison town, as well as a supply and communications post (City of Cornwall 2014). The town being located on the St-Lawrence River, which was the main transportation corridor between Kingston and Montréal, boats full of supplies regularly passed through it.

The construction of the Cornwall Canal acted as a spring board for the industrial development of the town. The waterway provided water power to mills, tanneries, and textile plants and easy access to a transportation corridor that linked the town to the Montréal market (City of Cornwall 2014). The Cornwall Canal was the first of a series of canals built along the St-Lawrence River to facilitate steam boat navigation (Keefer 1887: 1). The construction started in 1834 and the canal was open to navigation in 1842 (Pringle 1890: 162). The original structure extended from Cornwall to Long-Sault (approximately 18 km) and bypassed the Long-Sault rapids with 7 locks (Pringle 1890: 163).

In 1846, Cornwall was an important town in Upper Canada with a population of approximately 1,600 habitants (Smith 1846: 38-39). Several commercial and community establishments such as a courthouse and jail, an Episcopal church, a Catholic church, a Presbyterian church, a Methodist church, a post-office, a newspaper office, various schools, tanneries, taverns, a forge, blacksmiths, tinsmiths, and banks were present (Smith 1846: 38-39).

Another catalyst of local development that occurred in the mid-nineteenth century was the construction of the Grand Trunk Railroad. At the time, Montréal and Toronto were the largest markets in the country (Andreae 1997: 116-117). The railroad was better than maritime transport in winter and, therefore, supported trades and exchanges between Montréal and Cornwall all year long (Andreae 1997: 116-117). The Grand Trunk Railroad was completed in 1855.

Study Area Specific Land Use

The area of interest spans several lots including part of Lot 7, Lot 8, Lot 9 and Lot 10, Concession 2 in the City of Cornwall and is located north of the original town plot, and therefore, was most likely not occupied during the eighteenth century.

Historical atlases such as the *Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russel, Canada West* (Walling 1862) and the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) were consulted to collate information on the past historical development of the study area. Aerial photographs dated to the twentieth century (NAPL) were also collected to evaluate modern disturbances.

A segment of the *Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell, Canada West* (Walling 1862) provides the earliest illustration of the area (**Figure 2**). The study area is bounded by a road at the east (now McConnell Avenue). Lot 7 seems to be vacant. Residents are listed on Lots 8, 9 and 10. Mrs. Crites (?) is living on the west half of Lot 8 and Crawford resided on the eastern half. Henry Crawford is listed in the 1851 personal census (LAC: 1851 Census, Stormont County, Cornwall Township, pp. 55-56). Crawford was a 42 year-old blacksmith living in a one story log house with his wife Elizabeth. His name with identical information reappeared in the 1861 personal census (LAC: 1861 Census, Stormont County, Cornwall Township, pp. 37-38). S. Cline occupied the western half of Lot 9. Samuel Cline, a 44 year-old merchant, is listed in the 1861 personal census (LAC: 1861 Census, Stormont County, Cornwall Township, pp.2-3). He was living in a two and a half storey brick house with his wife Margaret (?) and his children. The dwelling illustrated on the Walling map adjacent to the street could potentially correspond to the brick house listed in the census. However, this building is located outside the study area. The east half of the lot could be vacant as no residents are listed. B Gallinger occupied Lot 10.

A segment of the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) depicts the study area two decades later (**Figure 3**). The map indicates that several changes have occurred within the study area. Between 1862 and 1879, a fairground has been established on the west half of Lot 9. A race track is shown on the southern part of the fairground and several structures, most likely barns, are illustrated north of the track. One of those buildings is situated in the vicinity of the study area. The east half of the Lot has been divided. S. Cline still occupied the northern portion and J. Danahar resided on the southern part. On Lot 8, R. Craig occupied the west half and J. Gallinger resided on the east half. Regarding Lot 7, R. Craig occupied the west half and Van Koughnolls resided on the east half. Lastly, W. Mattice (?) occupied the southern portion of the Lot 10.

The 1871 and the 1881 censuses of the Township of Cornwall are not available as they were most likely destroyed during the 1897 West Block fire.

Table 1: Historic Land Owners and Features Located Within the Study Area

Con.	Lot	1861 Census	1862 Walling Map	1879 Belden Map
2	7	-	possibly vacant	Van Koughnolls (east half) R. Craig (west half)
2	8	Henry Crawford, blacksmith, log house -	H. Crawford (east half) Mrs. Crites (?) (west half)	J. Gallinger, one structure (east half) R. Craig (west half)
2	9	Samuel Cline, merchant, brick house	S. Cline (west half)	S. Cline & J. Danahar (east half) Fairground, several structures, (west half)
2	10	-	B. Gallinger	W. Mattice (?)

An aerial photograph (NAPL: A1096-312-18) captures the study area in 1957 (**Figure 4**). Very few disturbances have occurred. Most of the area consists of cultivated lands divided by tamped earth laneways. None of the structures depicted on the *Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry* (Belden & Co. 1879) has survived. Ground disturbance has occurred in the central portion of Lot 8. In the southernmost portion of the study area, a few structures, likely houses and farm related buildings, have been erected. The area of the fairground (Belden & Co. 1879) remains undisturbed. Housing developments have impacted 13th Street (Lot 10). No development has occurred on Lot 7.

A second aerial photograph dated to 1972 (NAPL: A72363-56 & A72363-57) shows disturbances that have occurred within the study area (**Figure 5**). Housing developments bounded the north-west portion and the southernmost part of the study area. Portions of Lemay Street, 13th Street and Ontario Street have been built between 1957 and 1972. Rows of houses are situated in the central part of the Lemay Street segment. Several structures, likely garages, and an unpaved parking lot have been built in the southernmost area. Part of the former fairground area is disturbed by 13th Street East. No development has occurred on Lot 7.

The last aerial photograph shows the study area in 1986 (NAPL: A86109-133) (**Figure 6**). Housing development extends to most parts of Lemay Street and 13th Street East. More of the fairground area has been impacted by houses construction; only the area south of 13th Street East remains undisturbed. The garages and the parking lot located in the southernmost area are still standing and some structures have been replaced by bigger construction. No development has occurred on Lot 7.

Today, few more disturbances have occurred as part of the east half of Lot 7 has been disturbed by housing development and by the construction of a street segment (Lemay Street).

1.2.3 Reports with Relevant Background Information

Previously conducted archaeological research projects and assessments in the vicinity of the Project study area have informed the current Stage 2 Archaeological Assessment. **Table 2** provides a list of the reports referenced as part of the background research conducted for this study.

Table 2: Related Archaeological Assessment Reports

Year	Title	Author	PIF/File #
2015	<i>STAGE 1 ARCHAEOLOGICAL ASSESSMENT Proposed Lemay Street and Municipal Works Yard Project Part of Lots 7, 8, and 9, Concession 2, Township of Cornwall United Counties of Stormont, Dundas and Glengarry</i>	AECOM	PIF# P395-0008-2015

1.3 Archaeological Context

1.3.1 Natural Environment

The Improvement and Extension of Lemay Street Project study area is located in the Lancaster Flats Physiographic Region of Ontario. The Lancaster Flats is a small area found in the vicinity of the St-Lawrence River composed of clayish and fine sand deposits buried under till plain (Chapman and Putnam 1984:205). The relief is generally flat with exposed stony crests, few drumlins and ridges (Chapman and Putnam 1984:205). There are only a few streams and rivers to help drain the region toward the St-Lawrence River and the area is poorly drained because of its topography (Chapman and Putnam 1984:205). Podzolic horizons consisting of deep black upper stratum overlaying mottled ferrous sandy subsoil are to be found in the area (Chapman and Putnam 1984:205). The original forest cover consisted of American elm, white ash and red maple (Chapman and Putnam 1984:205).

The general topography of the study area is flat with elevations ranging from 50 to 60 metre above sea level.

1.3.2 Known Archaeological Sites and Surveys

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological registered sites within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on longitude and latitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referred by a four letter designation and sites located within the block are numbered sequentially as they are found. The study area is located in Borden Block BeGc.

According to the OASD, there is no previously registered site located within a 1 kilometer radius of the study area (MTCS 2015b).

There is no archaeological fieldwork conducted within 50 metres from the study area (MTCS 2015b).

There is no provincially or federally designated property within or in the vicinity of the study area (CRHP 2015; MTCS 2015a).

1.3.3 Existing Conditions

As noted, the study area consists of an interrupted street corridor that is 1,182 metre long. The area of interest covers 3.22 hectares in size. It is bounded to the east by McConnell Avenue and to the west by Pitt Street. Overall, the study area is comprised of both modern residential and undeveloped lands.

2. Stage 2 Field Methodology

Fieldwork for the Improvements and Extension of Lemay Street Project was conducted under the field direction of Catherine Dupont [P395] on November 4th, 2015. Weather conditions during the survey were sunny and warm at 15 degrees Celsius with very good lighting conditions permitting excellent visibility for the identification of artifacts and cultural features.

All fieldwork activities were performed as per as **Section 2.1.2** of the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011: 31).

As mentioned above, the study area consists of a street corridor that includes a portion of 13th Street East, two segments of Lemay Street separated by a forested lot, and a small strip of land that corresponds to a future ramp connecting a parking lot to Sydney Street. The assessment consisted primarily of visual inspection and a test pit survey at 5m intervals was completed with additional test pits dug as required. All test pits were 30 cm in diameter and excavated by hand at least 5cm into subsoil. The soil was screened through a 6 mm (¼") mesh to facilitate artifact recovery (**Plate 4** in Section 7). Each test pit was examined for stratigraphy, cultural features or evidence of disturbance. Tarps were placed on the ground when screening the soil to protect the lawn and test pits were backfilled following their completion.

As ploughing was not possible in the wooded area, the forested lot was assessed using test pit survey in order to determine if archaeological resources were present. Test pits were excavated at 5 metre intervals, with the exception of areas of steep slope (greater than 20%) and permanently low and wet areas such as a marsh (**Plate 1** and **Plate 2**). The area surrounding the marsh was found to be wet, and therefore, not surveyed (**Plate 3**).

The stratigraphy encountered consists of a layer of ca. 20cm in depth comprised of loose blackish clayish loam, with roots and occasional pebbles followed by a layer ca. 10-15cm comprised of loose whitish-grey sandy clayish soil, with roots, charcoal nodules (0.5cm) and occasional pebbles. Lastly, a reddish compact sandy soil interpreted as subsoil was uncovered (**Plate 5**). No evidence of features or artifacts was found during the test pit survey.

Within the ROW, evidence of below grade alteration in the form of excavated ditches is present (**Plate 6**). Disturbance related to the underground sewer and water utilities was also encountered in the residential areas (**Plate 7** and **Plate 8**). The ROW and the small strip of land west of Sydney Street were visually inspected and judgementally test pitted in areas that appear to be undisturbed such as lawns that presented no evidence of excavated ditches or underground utilities. These areas were found to have been heavily disturbed, as demonstrated by the presence of sand, gravel, or a mixture of the two within all excavated pits (**Plate 9**, **Plate 10** and **Plate 11**).

Documentation generated during the fieldwork assessment includes 3 pages of notes and observation, maps and photographs. **Table 3** below is an inventory of the documentary record. **Section 8: Figure 8** and **Section 7: Images** illustrate the results of the Stage 2 Archaeological Assessment.

Table 3: Inventory of Field Documentary Record

Maps	Field notes	Number of photos
8	3 page General Field Notes, 1 page of photo logs	53

Table 4 below shows the methods of assessment and a summary of investigated land.

Table 4: Results of the Stage 2 Archaeological Assessment

Survey Method	Hectares	%
Disturbed	1.74	54%

Visual inspection and judgementally test pitted	1.06	33%
Slope (greater than 20%)	0.06	1.8%
Wetland	0.09	2.7%
Test Pitted at 5 m Intervals	0.27	8.4%
Totals	3.22	100

3. Analysis and Conclusions

In 2015, AECOM was retained on behalf of the City of Cornwall for the Improvements and Extensions of Lemay Street Project, on part of Lots 7, 8, and 9, Concession 2, in the Township of Cornwall, United Counties of Stormont, Dundas and Glengarry. The investigated area totals 3.22 hectares in size.

The results of the Stage 2 Archaeological Assessment demonstrated that the ROW of all residential areas has been heavily disturbed by the excavation of ditches and the installation of utility lines. Therefore, any archaeological resources that may have been present within the ROW have been removed. Additionally, no evidence of cultural features or artifacts was found within the forested area subject to the test pit survey at 5 metre intervals. Therefore, the study area does not exhibit any cultural value.

4. Recommendations

Based on the results of the survey, AECOM makes the following recommendation:

- 1) That this study area be cleared of further archaeological concern, as no archaeological materials were found as a result of this Stage 2 Archaeological Assessment.

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any archaeological site without Ministry of Tourism, Culture and Sport concurrence. No grading or other activities that may result in the destruction or disturbance of an archaeological site are permitted until notice of Ministry of Tourism, Culture and Sport approval has been received.

5. Advice on Compliance with Legislation

a) This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licencing in accordance with Part IV 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, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

b) It is an offence 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 a 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 Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

c) 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*.

d) The *Cemeteries Act*, R.S.O. 1990, c.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.

Documentation related to the archaeological assessment of this project will be curated by AECOM until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner, the Ontario Ministry of Tourism, Culture and Sport and any other legitimate interest groups.

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7. Images



Plate 1: Steep slope, facing north.



Plate 2: Marshy land, facing south-east.



Plate 3: Permanently wet areas in the vicinity of the marsh, facing east.



Plate 4: Test Pitting at 5 metre intervals, facing north-east



Plate 5: Example of stratigraphy encountered, facing north.



Plate 6: Ditch in the ROW, facing west.



Plate 7: Evidence of sewer line within the ROW, facing west.

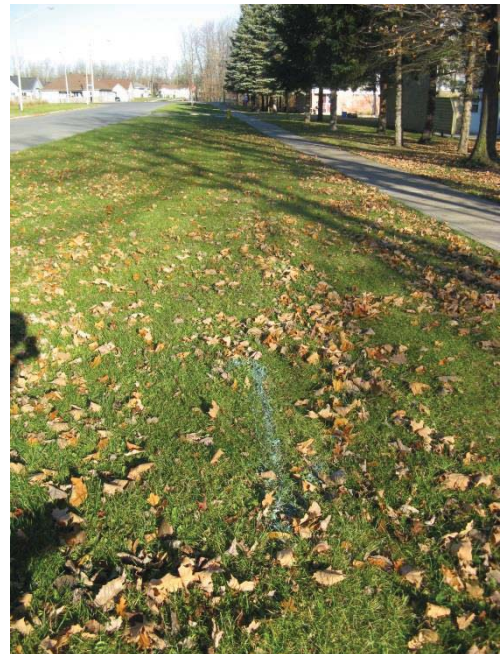


Plate 8: Evidence of a water line within the ROW, facing east



Plate 9: Test pit filled with gravel



Plate 10: Test pit filled with a mixture of compacted sand and clay



Plate 11: Test pit filled with a mixture of compacted sand, gravel and clay.

8. Figures

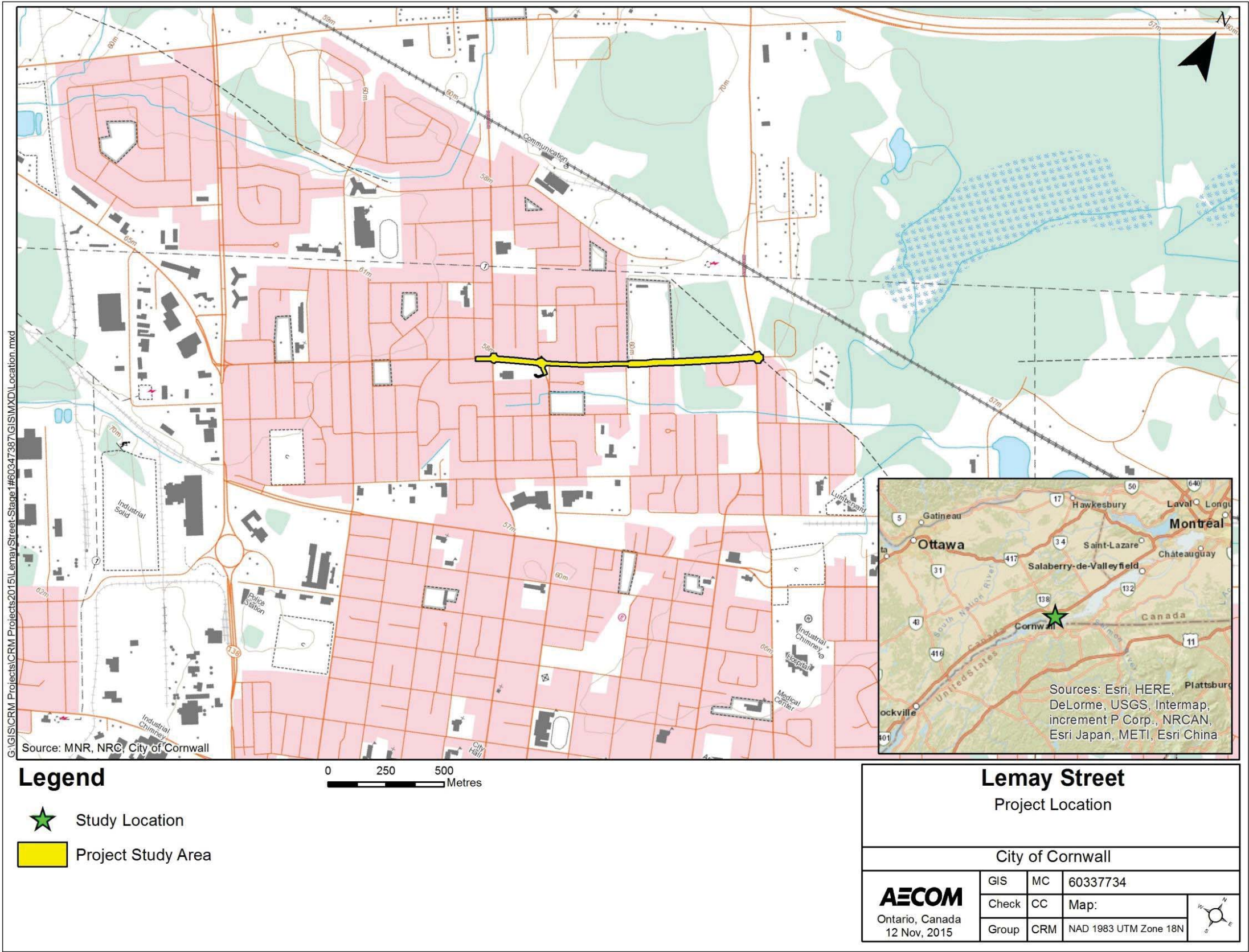


Figure 1: Location of Study Area

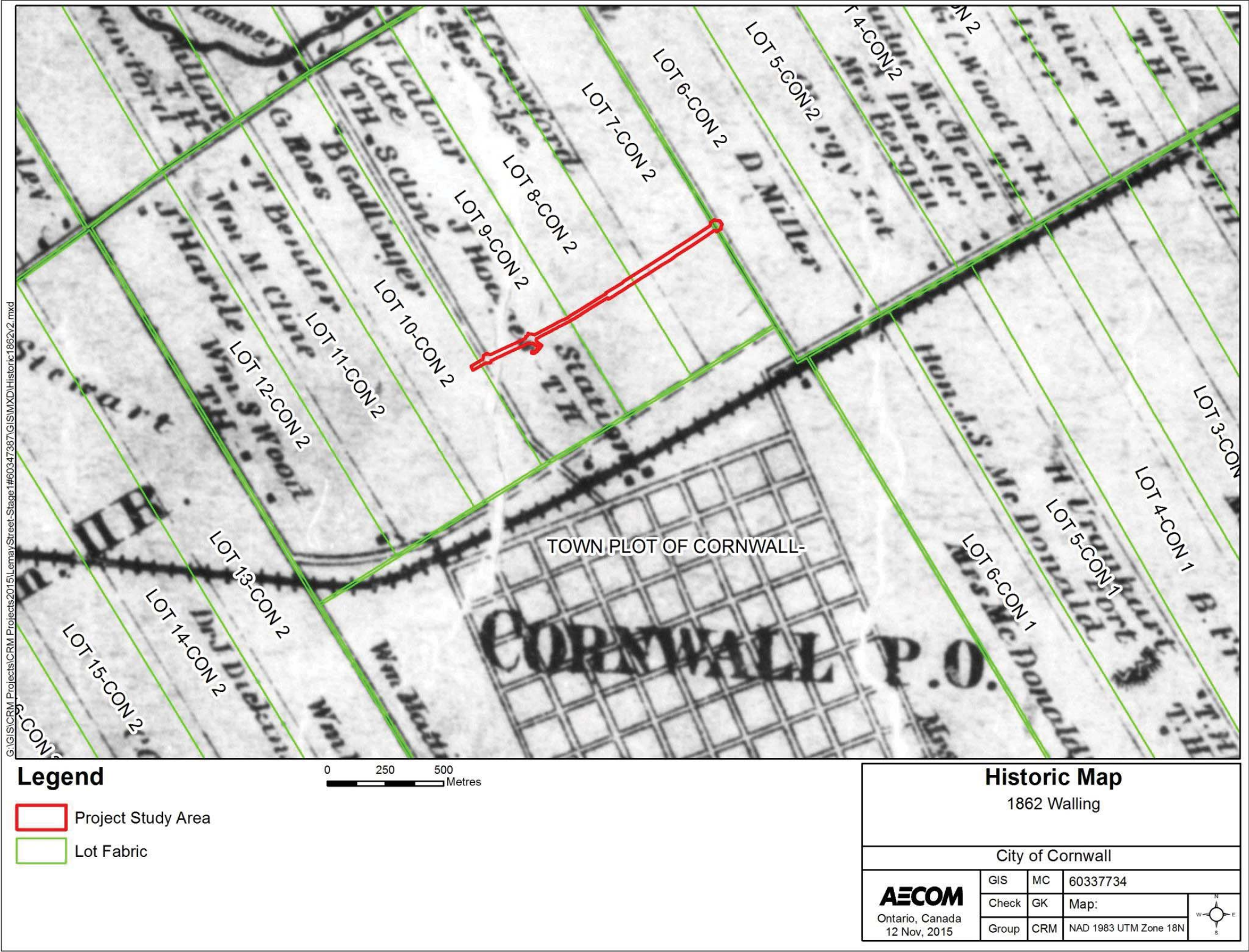


Figure 2: Segment of the Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russel, Canada West, (Walling 1862).

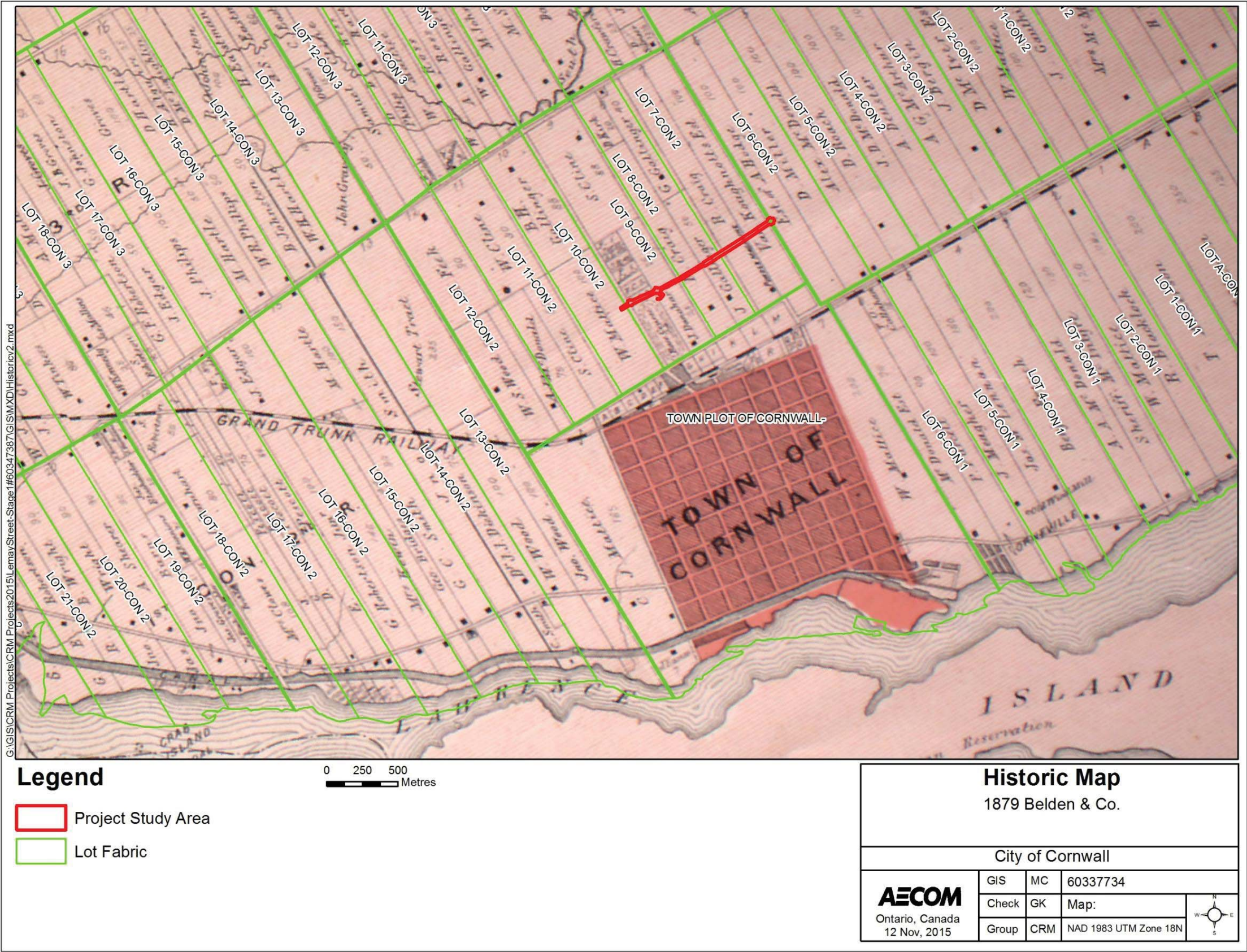


Figure 3: Segment of the Illustrated Historical Atlas of the counties of Stormont, Dundas & Glengarry (Belden & Co. 1879)

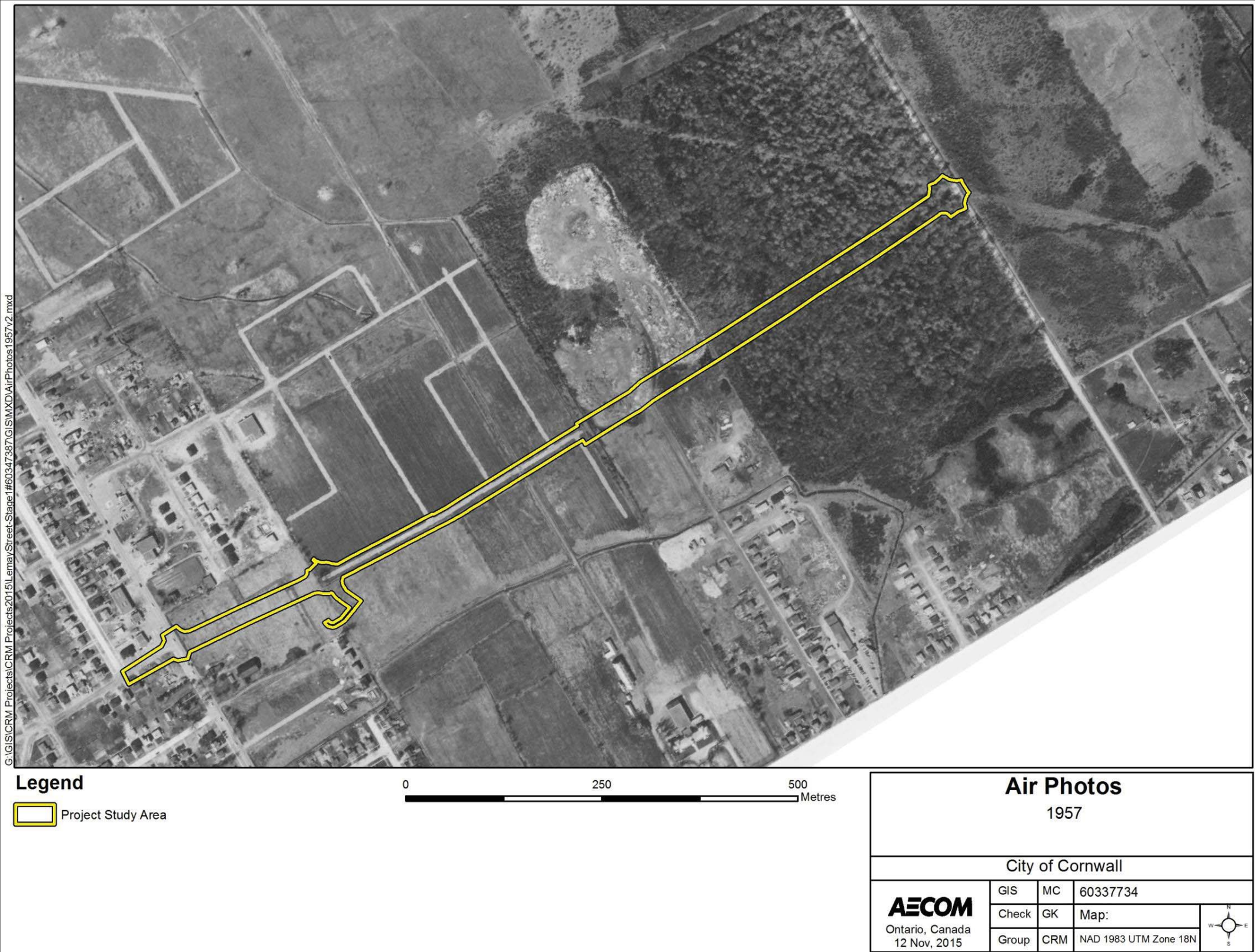


Figure 4: Segment of an Aerial Photograph dated to 1957 (NAPL: A1096-312-18)



Figure 5: Segment of an Aerial Photograph dated to 1972 (NAPL: A72363-56 & A72363-57)

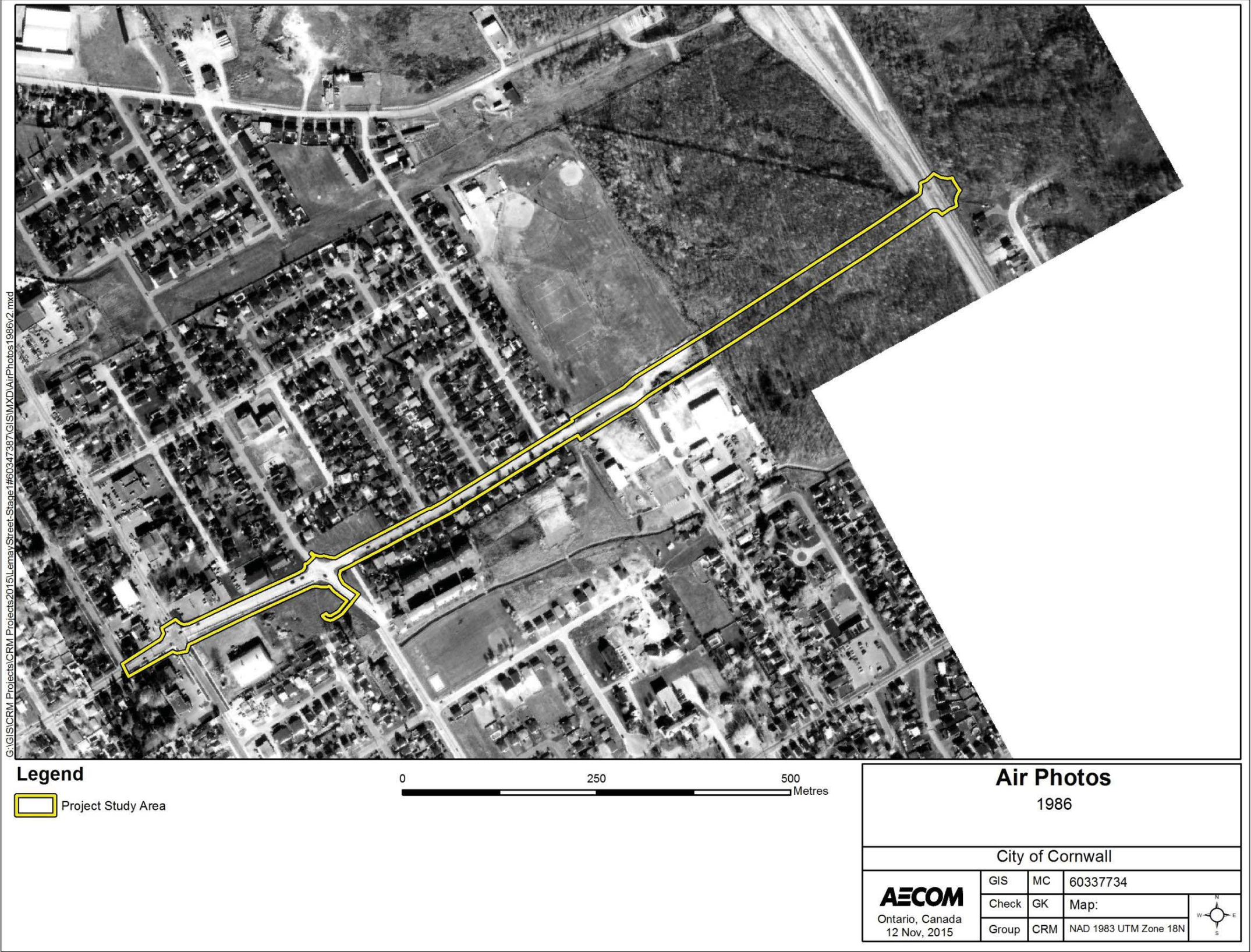


Figure 6: Segment of an Aerial Photograph dated to 1986 (NAPL: A86109-133)



Figure 7: Stage 2 Archaeological Assessment with Photo Locations

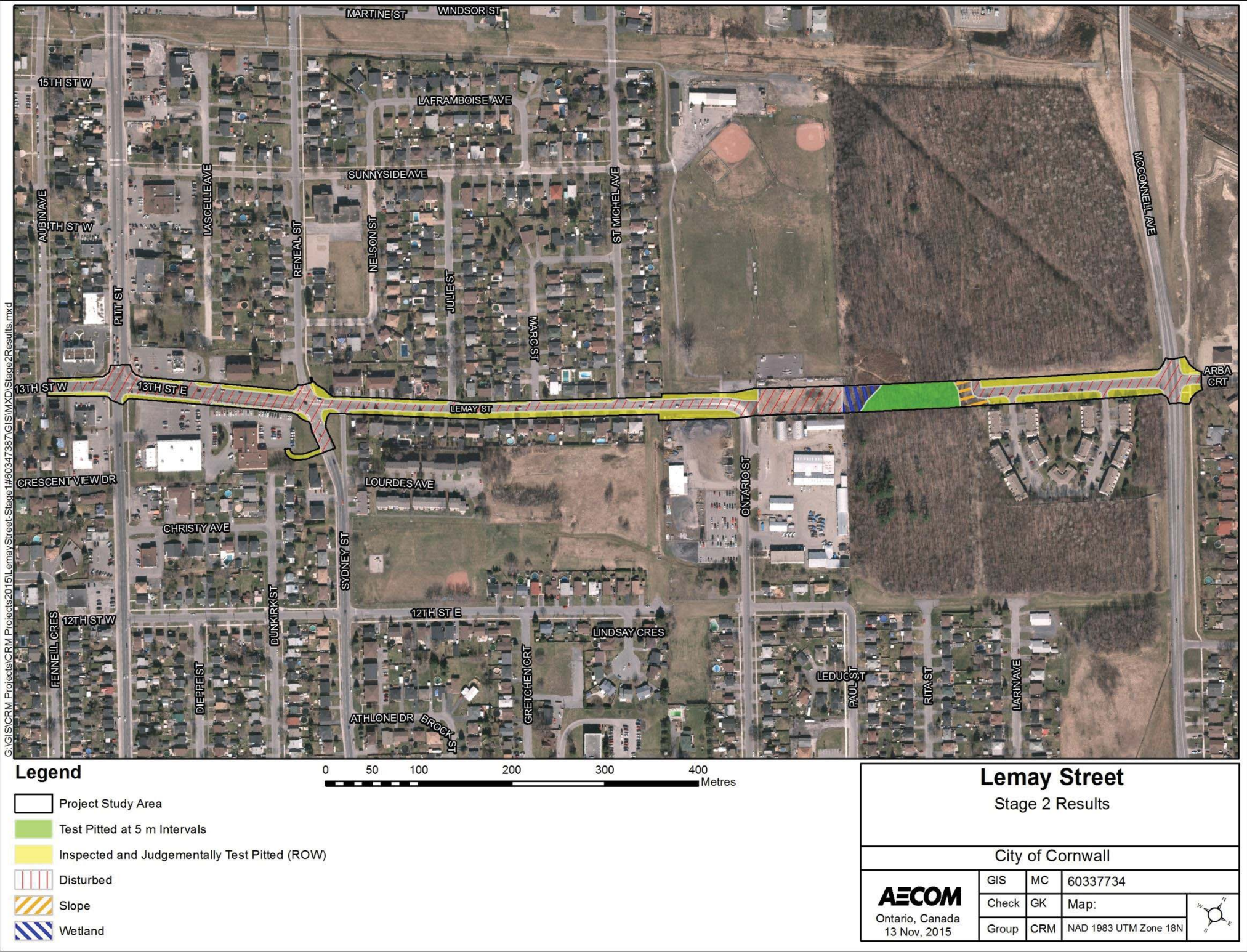


Figure 8: Results of the Stage 2 Archaeological Assessment for the Improvements and Extension of Lemay Street Project

About AECOM

AECOM (NYSE: ACM) is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries.

As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges.

From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM companies had revenue of approximately US\$19 billion during the 12 months ended June 30, 2015.

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