



NOTICE OF COMMENCEMENT & PUBLIC INFORMATION CENTRE #1 TALBOTVILLE WWTP CLASS EA

The Township of Southwold is a small, rural municipality immediately west of the City of St. Thomas. The Township recently completed a Master Servicing Plan for Talbotville and Ferndale to improve development opportunities within its settlement areas. This study was conducted as a Master Plan (Phases 1 and 2) under the Municipal Class Environmental Assessment process (Municipal Engineer's Association, October 2000, as amended in 2007 and 2011).

Currently, no municipal wastewater collection or treatment infrastructure exists within Talbotville. Existing development within the settlement area is serviced by private on-site septic systems. A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicing Plan. Through the completion of the Master Servicing Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative.

A new wastewater treatment plant would prompt the completion of a Schedule C Class Environmental Assessment (EA). The Schedule C Class EA would build upon the findings of the Master Servicing Plan and would complete Phase 3 (Alternate Design Concepts) and Phase 4 (Environmental Study Report) of the Municipal Class EA process. The Schedule C Class EA will provide the basis for the selection of the preferred treatment technologies and will undertake further determination of the preferred plant location.

A Public Information Centre to review technical alternatives will be held on:

Date: Wednesday, December 16, 2015

Time: 6:00pm to 8:00pm (open house format)

Location: Keystone Complex, 35921 Talbot Line, Shedden ON

If you have any questions, comments or concerns, please contact:

Ken LovelandCameron Gorrie, P.Eng.CAO/ClerkProject Manager, WaterTownship of SouthwoldStantec Consulting Ltd.

35663 Fingal Line 171 Queens Avenue, Suite 600

Fingal ON NOL 1KO London ON N6A 5J7

Email: cao@southwold.ca Email: cameron.gorrie@stantec.com

Interested parties wishing to be added to the project mailing list should also contact one of the above. Following the Public Information Centre, further comments are invited for incorporation into the planning and design of this project and will be received until January 6, 2016.

Personal information collected and recorded at the Public Information Centre or submitted in writing on this subject is collected under the authority of the Municipal Act, 2001 and will be used by members of Council and Township staff in their review of this study.

If you <u>do not</u> require further correspondence with respect to this project, if you would prefer to receive future correspondence by <u>email only</u>, or if your <u>current contact information requires updating</u>, please contact Cameron Gorrie at the email address listed above.

rob dotzert

Feeding the hungry one box at a time

WHITNEY SOUTH

The Weekly News

presents.

And though the younger good meal.

holiday cheer to local fami- awesome." lies in need for 28 years.

"How said co-Andre-

ana Col- families," said Al Mintz, lins. "It's food co-ordinator. "What Christmas Care has been a This year, organizers helps bring him to the job wondersay here's a stuffy to share the wealth."

not so great if there's no

The food aspect is really When it comes to cel- how the organization beebrating the season, there's gan, making sure families a lot more to it than just were fed. Toys and gifts came second.

"The toy may not be secgeneration may argue that ondary to the child, but it fact, the folks at Christmas is secondary to the par-Care know that nothing can ent if they can't feed their warm a heart better than a child," Collins explained. "The food is extremely im-The organization has been portant and the donations working hard to bring some from the community are

> Sometimes though, recieving all that food at the good is end can be a little overit to get a whelming. Volunteers are present if always appreciative to get you can't those donations, but the sooner the better.

"In the past, if we haven't ordinator gotten enough, I go out shopping for about 800 we get in after Dec. 15 goes passion for over 20 years. are looking for everything everyday. to to Caring Cupboard, Sal-

bear, but For Mintz, working with love to do."

Volunteers (from bottom left) Linda Jackson, Bill Robinson, Al Mintz and Tom Jackson display just some of the items needed by Christmas Care to help feed local families.

other organizations. We like that's my service," he said. nut butter and jam.

"I'm a Christian and I from soup and canned

fed families are what worth doing."

"The people who really vation Army and a couple believe I should give back, vegetables, to pasta, pea- appreciate what we do here, the ones who are to thank-"It's just something I really For Mintz, happy and ful, that's what makes it all



ROSS ST., ST. THOMAS

OPEN HOUSE SATURDAY 2-4 PM

Totally remodeled from top to bottom, new eat-in kitchen, bathroom, flooring, doors

furnace, rear deck, siding and much more. Great room with fireplace, main floor

519-495-0789 www.haddowstthomas.ca

Residential or Commercial Use

Richard Haddow*

laundry and usable basement. Nicely landscaped and rear parking. Move in ready.

\$124,900 OR P.I.

NOTICE OF COMMENCEMENT & PUBLIC INFORMATION CENTRE #1 TALBOTVILLE WWTP CLASS EA

The Township of Southwold is a small, rural municipality immediately west of the City of St. Thomas The Township recently completed a Master Servicina Plan for Talbotville and Ferndale to improve development opportunities within its settlement areas. This study was conducted as a Master Plan (Phases 1 and 2) under the Municipal Class Environmental Assessment process (Municipal Engineer's Association, October 2000, as amended in 2007 and 2011).

Currently, no municipal wastewater collection or treatment infrastructure exists within Talbotville. Existing development within the settlement area is serviced by private on-site septic systems. A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicina Plan. Through the completion of the Master Servicina Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative

A new wastewater treatment plant would prompt the completion of a Schedule C Class Environmental Assessment (EA). The Schedule C Class EA would build upon the findings of the Master Servicing Plan and would complete Phase 3 (Alternate Design Concepts) and Phase 4 (Environmental Study Report) of the Municipal Class EA process. The Schedule C Class EA will provide the basis for the selection of the preferred treatment technologies and will undertake further determination of the preferred plant location.

A Public Information Centre to review technical alternatives will be held on:

Date: Wednesday, December 16, 2015 Time: 6:00pm to 8:00pm (open house format)

Keystone Complex, 35921 Talbot Line, Shedden ON Location:

If you have any questions, comments or concerns, please contact:

Ken Loveland CAO/Clerk Township of Southwold 35663 Fingal Line Finaal ON NOL 1KO Email: cao@southwold.ca

Cameron Gorrie, P.Ena Project Manager, Water

Stantec Consulting Ltd. 171 Queens Avenue, Suite 600 London ON N6A 5J7

Email: cameron.gorrie@stantec.com

Interested parties wishing to be added to the project mailing list should also contact one of the above. Following the Public Information Centre, further comments are invited for incorporation into the planning and design of this project and will be received until January 6, 2016.

Personal information collected and recorded at the Public Information Centre or submitted in writing on this subject is collected under the authority of the Municipal Act, 2001 and will be used by members of Council and Township staff in their review of this study.



AUTO REGYCLERS with a ENVINE CANDINE

TOWING SERVICE AVAILABLE

ERY COMPETITIVE RATES!



SAFETY CHECKS • AIR CONDITIONING

ENGINE and TRANSMISSION

BRAKE REPAIRS and INSTALLATION

NEW AND USED PARTS AND MODELS



44267 Elm Line, St. Thomas www.McGregorAutoParts.com 519-631-4801

Your Home is your Biggest Investment



Schedule your own estimate at: www.hdpainting.ca

TRUST THE CARE TO THE EXPERTS!

519-637-0606

800 WE PAINT



Painting



Getting into the family Christmas spirit

SEAN MEYER

The Weekly News

Just like any group of relations, the Big Brothers Big Sisters of St. Thomas-Elgin brought their family together to celebrate Christmas, have some fun, and thank the volunteers who make the whole thing

Barb Matthews, executive director Big Brothers Big Sisters of St. Thomas-Elgin, said the group's annual Christmas Party included about "60 of our bigs and littles," who gathered at Cy's Lanes and Lounge on Dec. 5 to celebrate and have some fun on the bowling lanes, at the craft table, and even in the kitchen.

"It was a way to bring our kids together, bring our matches together. We had board members there to interact with the volunteers who are giving their time to be with the kids," Matthews said. "It is also a way for those kids who aren't matched to be part of the party and feel more a sense of being part of the Big Brothers Big Sisters program."

Matthews thanked the Talbot Trail Optimists for assisting with the party as they provided all the craft supplies for the kids to make their own personalized Christmas tree ornaments for their trees.

Cy's is a big supporter of the agency, Matthews said, adding many of the kids enjoyed the opportunity to venture into the kitchen to make their own pizzas.



MARK SPOWART PHOTO

The Big Brothers and Big Sisters of St. Thomas Elgin held their annual Christmas party on Dec 5, and once again Cy's Lounge and Lanes in Aylmer played host. In addition to bowling, those in attendance had a chance to make their own pizza's and complete a number of craft activities.

Big Brothers Big Sisters of St. Thom- tion is serving around 200 kids throughas-Elgin, Matthews said, is currently out Elgin County. serving about 40 Big Brothers and Big Sisters matches.

mentoring, Matthews said the organiza- p.m.

Big Brothers Big Sisters is continuing the holiday cheer by hosting a festive With all of the agency's program- open house at the agency (146 Centre ming, which includes its school-based St.) on Thursday, Dec. 10, from 3-7



NOTICE OF COMMENCEMENT & PUBLIC INFORMATION CENTRE #1 TALBOTVILLE WWTP CLASS EA

The Township of Southwold is a small, rural municipality immediately west of the City of St. Thomas The Township recently completed a Master Servicina Plan for Talbotville and Ferndale to improve development apportunities within its settlement areas. This study was conducted as a Master Plan (Phases 1 and 2) under the Municipal Class Environmental Assessment process (Municipal Engineer's Association, October 2000, as amended in 2007 and 2011).

Currently, no municipal wastewater collection or treatment infrastructure exists within Talbotville. Existing development within the settlement area is serviced by private on-site septic systems. A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicina Plan. Through the completion of the Master Servicina Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative

A new wastewater treatment plant would prompt the completion of a Schedule C Class Environmental Assessment (EA). The Schedule C Class EA would build upon the findings of the Master Servicing Plan and would complete Phase 3 (Alternate Design Concepts) and Phase 4 (Environmental Study Report) of the Municipal Class EA process. The Schedule C Class EA will provide the basis for the selection of the preferred treatment technologies and will undertake further determination of the preferred plant location.

A Public Information Centre to review technical alternatives will be held on

Date: Wednesday, December 16, 2015 Time: 6:00pm to 8:00pm (open house format)

Location: Keystone Complex, 35921 Talbot Line, Shedden ON

If you have any questions, comments or concerns, please contact:

Ken Loveland CAO/Clerk Township of Southwold 35663 Fingal Line Finaal ON NOL 1KO Email: cao@southwold.ca Cameron Gorrie, P.Ena Project Manager, Wate

Stantec Consulting Ltd. 171 Queens Avenue, Suite 600 London ON N6A 5J7

Email: cameron.gorrie@stantec.com

Interested parties wishing to be added to the project mailing list should also contact one of the above. Following the Public Information Centre, further comments are invited for incorporation into the planning and design of this project and will be received until January 6, 2016.

Personal information collected and recorded at the Public Information Centre or submitted in writing on this subject is collected under the authority of the Municipal Act, 2001 and will be used by members of Council and Township staff in their review of this study.







NOTICE OF STUDY COMPLETION TALBOTVILLE WWTP CLASS EA

The Township of Southwold is a small, rural municipality immediately west of the City of St. Thomas. The Township recently completed a Master Servicing Plan for Talbotville and Ferndale to improve development opportunities within its settlement areas. This study was conducted as a Master Plan (Phases 1 and 2) under the Municipal Class Environmental Assessment process (Municipal Engineer's Association, October 2000, as amended in 2007 and 2011).

Currently, no municipal wastewater collection or treatment infrastructure exists within Talbotville. Existing development within the settlement area is serviced by private on-site septic systems. A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicing Plan. Through the completion of the Master Servicing Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative.

A new wastewater treatment plant prompted the completion of a Schedule C Class Environmental Assessment (EA). The Talbotville WWTP Class EA built upon the findings of the Master Servicing Plan and completed Phase 3 (Alternate Design Concepts) and Phase 4 (Environmental Study Report) of the Municipal Class EA process. The Talbotville WWTP Class EA provided the basis for the selection of the preferred treatment technologies and preferred plant location.

The Talbotville & Ferndale Master Servicing Plan included two public information centres (PICs) where stakeholders could provide comments on project details and various impacts. A third PIC was held as part of the Talbotville WWTP Class EA. Public, agency and First Nation comments have been received and considered in the finalization of the Class EA.

The Environmental Study Report for the Talbotville WWTP Class EA has been completed and is available for review at the following location during regular business hours from February 25, 2016 until March 29, 2016:

Township Office for the Township of Southwold 35663 Fingal Line Fingal ON NOL 1K0

The Environmental Study Report is available online at:

http://southwold.ca/sites/default/files/Talbotville_WWTP_Class_EA

Interested persons may provide written comment to the undersigned within the public review period from February 25, 2016 to March 29, 2016:

Ken Loveland

CAO/Clerk Township of Southwold 35663 Fingal Line Fingal ON NOL 1KO

Email: cao@southwold.ca

Cameron Gorrie, P.Eng.

Project Manager, Water Stantec Consulting Ltd. 171 Queens Avenue, Suite 600 London ON N6A 5J7

Email: cameron.gorrie@stantec.com

If concerns arise regarding this project which cannot be resolved in discussion the Township of Southwold, a person or party may request that the Minister of the Environment and Climate Change make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order). Requests must be received by the Minister at the address below by March 29, 2016.

Minister of the Environment and Climate Change 77 Wellesley Street West, 11th Floor, Ferguson Block Toronto ON M7A 2T5

A copy of the request must also be sent to the project team listed above. Subject to comments received as a result of this Notice and the receipt of necessary approvals, design and construction of the Talbotville WWTP may proceed.

Personal information submitted in writing on this subject is collected under the authority of the Municipal Freedom of Information and Protection of Privacy Act and will be used by members of Council and Township staff in their review of this study. Any written submission, including names and contact information will be made available to the public through the publication of the Talbotville WWTP Class EA.



Appendix 6.1
Archaeological Assessment Report

Original Report on Archaeological Assessment (Stages 1 & 2) 10065 Gore Road, Talbotville, Lot 40, Concession SENTBR

Township of Southwold, Elgin County, Ontario Talbotville Royal Study CANADA SOU kilometre

Mayer Archaeological Consultants

Archaeological Assessments and Mitigative Excavations

Original Report on Archaeological Assessment (Stages 1 & 2) 10065 Gore Road, Talbotville, Lot 40, Concession SENBTR, Township of Southwold, Elgin County, Ontario

submitted to

Ricor Engineering Ltd. 531 Talbot St. London, Ontario N6A 2S5 Tel: (519)963-0531

and

The Ontario Ministry of Tourism, Culture and Sport

Prepared by
Mayer Archaeological Consultants
90 Curtis Street, St. Thomas, Ontario, N5P 1J2
Office: (519) 637-6200 Fax: (519) 637-8995
Toll Free: (800) 465-9990
E-Mail: mayerheritage@bellnet.ca
Web Page: www.archaeologicalconsultants.com

Archaeological Licensee Paul O'Neal Archaeological Licence Number P040 Project Information Form Number P040-360-2013 Corporate Project Number 13-004

© July 18th, 2013

All rights reserved. No part of this report may be reproduced in any form or by any means without the prior written consent of Mayer Heritage Consultants Inc.

Executive Summary

As part of the development approval process, an archaeological assessment (Stages 1 and 2) was conducted as a condition of approval for a subdivision development. The property is located 10065 Gore Road, Talbotville, Lot 40, Concession SENBTR, Township of Southwold, Elgin County, Ontario

Stage 1 background research determined that there three archaeological sites registered near the study area. The study area is transected by Dodds Creek. Based upon the topography suitable for human habitation and the proximity to water, the land within the proposed development exhibits high potential for the discovery of pre-contact Aboriginal and Euro-Canadian archaeological resources.

The proposed development is 20.2 hectares in size. The study area consists of agricultural fields and wooded areas surrounding steep ravines. The agricultural fields had been ploughed and well-weathered by numerous rains, and were assessed using the standard pedestrian transect method. Some fields were in crops and were surveyed at a reduced interval to achieve appropriate visibility. The woodlot was assessed using the standard test pit method. The survey was conducted at a five-metre interval. Two watercourses and steep ravines are on portions of the property. These areas were not assessed due to low archaeological potential.

Two locations containing archaeological resources were recovered as a result of the stage 2 survey, one Euro-Canadian site and one Aboriginal site. Based upon the Ministry of Tourism, Culture and Sport *Standards and Guidelines for Consultant Archaeologists*, neither of these locations warrants further fieldwork and the property has now been completely documented.

Every reasonable effort was made to define all locations with archaeological resources on the property. However, if deeply buried archaeological material is found during construction, the Ontario Ministry of Tourism, Culture and Sport and Mayer Heritage Consultants Inc. (519-637-6200) should be notified immediately.

In the event that human remains are encountered during construction, the proponent should immediately contact the Ontario Ministry of Tourism, Culture and Sport, the Cemeteries Regulation Unit of the Ontario Ministry of Consumer and Commercial Relations in Toronto (416-326-8392), as well as the appropriate municipal police, the local coroner, and Mayer Heritage Consultants Inc.

This archaeological assessment was conducted in order to fulfill a standard condition of development approval. Subject to acceptance of the results and approval of the recommendations, the Ontario Ministry of Tourism, Culture and Sport is requested to issue a letter recommending that no further archaeological assessment of the property be required. The Ontario Ministry of Tourism, Culture and Sport is also requested to issue a letter accepting this report into the Provincial Registry.

Table of Contents

	Executive Summary Project Personnel	2 4
	Acknowledgements	4
	Project Context Development Context Historical Context Background Research Cultural Chronology for Southwestern Ontario Archaeological Context Natural Environment Previous Archaeological Investigations Potential for Archaeological Resources	5 5 5 6 7 7 7 8
	Field Methods Record of Finds Analysis and Conclusions	9 9 10
	RECOMMENDATIONS ADVICE ON COMPLIANCE WITH LEGISLATION	11 11
	Bibliography and Sources	12
Table 1. 2. 3. 4.	General Cultural Chronology for Southern Ontario. Registered Archaeological Sites within 1,000 metres of the Study Area. Artifact Catalogue Documentary Record	6 8 10 10
Image 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	View of Ploughed Field, Facing North from Southwest Corner Crew at Work, Pedestrian Survey, Facing East Ground Visibility Conditions Typical Test Pit General View of Wooded Area, Facing North Crew at Work, Test Pit Survey, Facing Southeast Ravine, Centre of Property, Facing Southeast Ravine, East Edge of Study Area, Facing Southwest Ravine, Facing Southwest Crew at Work, Reduced Interval Pedestrian Survey, Facing North Reduced Interval Ground Visibility Conditions Dodds Creek, Facing Southeast	13 13 14 14 15 15 16 16 17 17 18 18

Maps

1.	Location of Study Area on 1:50,000 Scale Topographic Map	20
2.	Site Location on 1877 Historic Atlas Map of Southwold Township	21
3.	Development Plan with Results of Stage 2 Survey	2.2

Project Personnel

Project Manager	Paul O'Neal, M.A. (Licence P040)
Report Preparation	Paul J.C. O'Neal
Field Director	Kristy O'Neal
Field Assistants	Caitlin McCarthy Murray Mitchell Siobhan O'Neal Danielle Quinney Ally Vouvalidis
Historic Research	Paul J.C. O'Neal

Paul J.C. O'Neal

Acknowledgments

Preparation of this report was facilitated by the assistance of the following individuals and their agencies:

• Julian Novick, Ricor Engineering Ltd

Graphics

Robert von Bitter, Archaeological Data Co-ordinator, Ontario Ministry of Tourism,
 Culture and Sport

Original Report on Archaeological Assessment (Stages 1 & 2) 10065 Gore Road, Talbotville, Lot 40, Concession SENBTR, Township of Southwold, Elgin County, Ontario

Project Context

Development Context

The *Planning Act, R.S.O. 1990*, establishes that the protection of features of archaeological interest is a matter of provincial concern. Mayer Heritage Consultants Inc. was contracted by Ricor Engineering Ltd. to conduct an archaeological resource assessment (Stage 1 background research and Stage 2 general survey). This survey was conducted as a condition of a draft plan application in advance of a 67 lot subdivision and proposed stormwater management area. An additional area owned by the client was also assessed. Our client supplied the latest plan available and confirmed the study area limits (see Map 3). The property is located at 10065 Gore Road, Talbotville, Lot 40, Concession SENBTR, Township of Southwold, Elgin County (Map 1).

The assessment was conducted under the project management of Paul O'Neal, under Archaeological Consulting License P040. The fieldwork was completed under the direction of Kristy O'Neal, Archaeological Consulting License P066. The assessment was conducted in order to determine if any direct and/or indirect impacts would occur by proposed construction activities on archaeological resources that might be present. Archaeological resources consist of artifacts (Aboriginal stone tools, pottery and subsistence remains as well as Euro-Canadian objects), subsurface settlement patterns and cultural features (post moulds, trash pits, privies, and wells), and sites (temporary camps and special purpose activity areas, plus more permanent settlements such as villages, homesteads, grist mills and industrial structures). Mayer Heritage received permission to enter the subject property and to remove artifacts as necessary during the survey conducted on May 28th and 29th, and July 8th, 2013.

All fieldwork was completed using the 2011 Ontario Ministry of Tourism, Culture and Sport *Standards and Guidelines for Consultant Archaeologists*. This report documents the preliminary research, the field methods and results, and the conclusions and recommendations based on the Stage 1 and 2 archaeological assessment. All documents, records, and artifacts recovered will be curated at the offices of Mayer Heritage Consultants Inc., in accordance with subsection 66(1) of the Heritage Act.

Historical Context

Background Research

Stage 1 background research was conducted in order to determine the potential for finding and identifying archaeological sites within the current study area and to determine the necessity of conducting a Stage 2 survey. This is done by reviewing geographic, archaeological and historical data for the property and the surrounding area. The background research was conducted in order to:

 amass all of the readily available information on any previous archaeological surveys in the area;

- determine the locations of any registered and unregistered sites within and around the study area; and
- develop an historical framework for assigning levels of potential significance to any new sites discovered during fieldwork.

A Cultural Chronology for Southwestern Ontario

Over their thousands of years of occupation in the general region, Aboriginal people have left behind, to a greater or lesser degree, physical evidence of their lifeway activities and settlements at many locations. Based upon a published synthesis of Aboriginal cultural occupations (Wright 1968), Table 1 is a general outline of the cultural history of southwestern Ontario that is applicable to the study area. Ellis and Ferris (1990) provide greater detail of the distinctive characteristics of each time period and cultural group.

It is likely that Ontario was occupied soon after the retreat of the Ice Age glaciers. The earliest known human occupation in the area was during the Paleo-Indian period (*circa* 9,000 to 7500 B.C.) wherein small groups of nomadic peoples hunted big game such as caribou in a cool sub-arctic climate. Sites are typically found near glacial features such as the shorelines of glacial lakes or kettle ponds. These people were few in number and their small, temporary campsites are relatively rare. Paleo-Indian sites are recognized by the presence of distinctive artifacts such as fluted projectile points, beaked scrapers and gravers and by the preference for light coloured cherts, such as Collingwood chert. The Paleo-Indian Period is divided into two sub-periods, Early Paleo-Indian and Late-Paleo-Indian.

Table 1: General Cultural Chronology for Southwestern Ontario.

Table 1. General Cultural Chronology for Southwestern Ontario.				
PERIOD GROUP		TIME RANGE	COMMENTS	
Early Paleo-Indian	Fluted Projectiles	9500 - 8500 B.C.	big game hunters	
Late Paleo-Indian	Hi-Lo Projectiles	8500 - 7500 B.C.	small nomadic groups	
Early Archaic		7800 - 6000 B.C.	nomadic hunters and gatherers	
Middle Archaic	Laurentian	6000 - 2000 B.C.	territorial settlements	
Late Archaic	Lamoka	2500 - 1700 B.C.	polished ground stone tools	
"	Broadpoint	1800 - 1400 B.C.		
"	Crawford Knoll	1500 - 500 B.C.		
"	Glacial Kame	circa 1000 B.C.	burial ceremonialism	
Early Woodland	Meadowood	1000 - 400 B.C.	introduction of pottery	
"	Red Ochre	1000 - 500 B.C.		
Middle Woodland	Western Basin/Saugeen	400 B.C A.D. 500	long distance trade networks	
"	Princess Point	A.D. 500 - 800	incipient agriculture	
Late Woodland	Glen Meyer	A.D. 800 - 1300	transition to village life	
"	Uren	A.D. 1300 - 1350	large villages with palisades	
"	Middleport	A.D. 1300 - 1400	wide distribution of ceramic styles	
"	Neutral/Huron	A.D. 1400 - 1650	tribal warfare	
Early Contact	Mississauga plus others	A.D. 1700 - 1875	tribal displacement	
Late Contact	Euro-Canadian	A.D. 1800 - present	European settlement	

People during the Archaic period (*circa* 7800 to 500 B.C.) were still primarily nomadic hunters but they adapted to a more temperate climate. The Archaic period is characterized by the appearance of ground stone tools, notched or stemmed projectile points. The Archaic Period is divided into three sub-periods, Early, Middle and Late Archaic. During the Archaic Period, groups began to establish territorial settlements and introduce burial ceremonialism. There is a marked increase in the number and size of sites, especially during the Late Archaic period.

The Woodland period is distinguished by the introduction of pottery vessels for storage and cooking. Sites of the Woodland period (*circa* 1000 B.C. to A.D. 1650) are usually the most numerous because the population levels in southwestern Ontario had significantly increased. The Woodland Period is also marked by the establishment of complex long distance trading networks. The Woodland Period is divided into three sub-periods, Early, Middle and Late Woodland.

During the Late Woodland Period, there is increasing sedentarism and the establishment of horticulture, a reliance on tribal warfare, and the introduction of semi-permanent villages with large protective palisades. The Late Woodland period also envelops the emergence of Iroquoian tribes and confederacies.

The historic period (A.D. 1650 to 1900) begins with the arrival of Euro-Canadian groups. While North America had been visited by Europeans on an increasing scale since the end of the 15th century, it was not until the voyages of Jacques Cartier in the 1530s that Europeans visited Ontario Iroquoians in their home territories. Sites of this period document European exploration, trade, and the displacement and devastation of native groups caused by warfare and infectious disease. The most common sites of this period include Euro-Canadian homesteads, industries, churches, schools and cemeteries.

Map 2 represents the Euro-Canadian settlement in and around the current study area. Page's 1877 Illustrated Historical Atlas of Elgin County identifies the property as belonging to the "Nicoll Estate". No structures are indicated on the lot within the current study area. The absence of structures on this map, however, does not necessarily mean that one or more structures were not present at that time, earlier or later.

Archaeological Context

Natural Environment

The study area is within the Mount Elgin Ridges physiographic region (Chapman and Putnam 1984), made up of a succession of ridges and vales. The Soils of Elgin County (Schut 1992) indicates that the dominant surface soil type over much of the subject area is Gobles clay loam. This soil is fine glacial till with and imperfect drainage and gentle slopes. The steep ravines consist of variable Valley Complex soils with steep slopes and rapid drainage. The nearest water sources are Dodds Creek and a tributary of Dodds Creek, which transect the study area.

Map 1 provides the location of the study area on a 1:50000-scale topographic map. As of May 28th, 2013, the at the start of the Stage 2 survey, the study area was made up largely of ploughed fields, with woodlots surrounds steep ravines that transect the property.

Previous Archaeological Investigations

To determine if any previous assessments have yielded archaeological sites, either within or surrounding the current study area, two main sources were consulted. These include the Archaeological Database of Registered Sites, which is maintained by the Ontario Ministry of Tourism, Culture and Sport. The collection of reports and archives at Mayer Heritage Consultants Inc. was also utilized.

The Ministry of Tourism and Culture Archaeological Database Coordinator (von Bitter 2013) indicated that there are 3 previously registered site located within 1,000 metres of the study area, a Euro-Canadian homestead, and two aboriginal findspots.

Table 2: Registered Archaeological Sites within 1,000 metres of the Study Area.

REGISTRATION #	NAME	TYPE	CULTURAL AFFILIATION
AeHh-45		homestead	Euro-Canadian
AeHh-46		findspot	Middle Archaic
AeHh-59	Talbotville 7	findspot	undetermined

Potential for Archaeological Resources

Archaeological potential is defined as the likelihood of finding archaeological sites within a study area. For planning purposes, determining archaeological potential provides a preliminary indication that significant sites might be found within the study area, and consequently, that it may be necessary to allocate time and resources for archaeological survey and mitigation.

The framework for assigning levels of potential archaeological significance is drawn from provincial guidelines found in the *Primer on Archaeology, Land Use Planning and Development in Ontario* (Ministry of Tourism, Culture and Sport 1997:12-13). The necessary information includes the identification and evaluation of any feature that has one or more of the following attributes:

- the presence of known archaeological sites within 250 metres of the property
- the presence of a water source (primary, secondary, ancient) within 300 metres of the property
- elevated topography (e.g., knolls, drumlins, eskers, plateaux)
- pockets of sandy soil in a clay or rocky area
- unusual land formations (e.g., mounds, caverns, waterfalls)
- proximity to a resource-rich area (concentrations of animal, vegetable or mineral resources)
- evidence of non-Aboriginal settlement (e.g., monuments, cemeteries) on the property
- proximity to historic transportation routes (e.g., road, rail, portage)
- protection of the property under the Ontario Heritage Act
- local knowledge of archaeological sites on the property or of the property's heritage value
- modern disturbance (extensive and intensive) of the soils on the property.

The study area meets several of the above criteria. Two water sources, Dodds Creek, and a tributary of Dodd Creek, are situated within the limits of the study area and the study area is largely comprised of well-drained land that is suitable for human habitation. The historic Great Western Railway is situated to the south of the study area. There are also three previously

registered archaeological sites on nearby lands, although none are within 250 metres of the study area.

Given the above, the property exhibits high potential for the discovery of pre-contact Aboriginal and Euro-Canadian archaeological resources.

Field Methods

The study area is 20.2 hectares in size. The Stage 2 general survey employed both the standard pedestrian transect method and the standard shovel test pit method since portions of the study area are wooded and could not be ploughed (see Map 3). Weather conditions ranged from sunny to overcast with warm conditions. There were no conditions detrimental to the recovery of artifacts. The survey was conducted on May 28th and 29th, and July 8th, 2013.

Approximately 30 percent of the study area could be ploughed and it was surveyed using the pedestrian transect method. The ploughed portions of the study area had been had been well-weathered by several light to heavy rains. Two northern fields were surveyed at a five-metre interval (see Images 1 & 2, Map 3). Ground visibility conditions were excellent, with at least 90 percent visibility (see Image 3). The southern field, accounting for 30 percent of the study area, was planted in a bean crop at the time of the survey. Because visibility was reduced by crop growth, this field was surveyed at a 1.5 to 2 metre interval in order to achieve at least 80 percent visibility (see Images 10 & 11).

Approximately 10 percent of the study area is forested or scrub and could not be ploughed. These areas were surveyed using the standard shovel test pit method at a five-metre interval (see Images 5 to 6). Each test pit was 30 centimetres in diameter and was dug to at least five centimetres into the subsoil, which varied from 20 to 20centimetres below the surface (see Image 5). Test pits were examined for stratigraphy, cultural features and fill. All soil was screened through 6 millimetre mesh to maximize the potential for artifact recovery. All test pits were backfilled upon completion.

Approximately 25 percent of land within the study area is steeply sloping. These sloped areas are adjacent to Dodds Creek and the tributary of Dodds Creek within the study area. The slopes were not assessed due to low potential for the recovery of archaeological resources (see Images 7 to 9). Dodds Creek makes up 5percent of the study area (see Image 12). The creek was not assessed due to low archaeological potential.

Any artifacts recovered triggered an intensified survey at a reduced one-metre interval within a 20 metre radius surrounding any findspots. Each site location was mapped and its position was recorded using a Global Positioning System (Garmin Etrex) with an accuracy of better than 5 metres.

Record of Finds

Two locations containing archaeological resources were observed during the Stage 2 survey of the property. All artifacts found during the survey were collected and are presented in Table 3.

Location 1

Location 1 consists of two Onondaga chert flakes found 8 metres apart. One flake is a tool thinning flake and the other is a flake fragment. Neither flake shows any evidence of heating.

Location 2

Location 2 is a Euro-Canadian findspot consisting of a single piece of blue transfer printed white earthenware. Despite intensive survey within a 20-metre radius of the findspot, no additional artifacts were recovered. Blue transfer printed table wares are commonly found on nineteenth century sites and often comprise the majority of decorated sherds recovered. Blue printing became popular in the late 1700's and was used throughout the nineteenth century and is still produced today (Barclay 1977).

Table 3: Artifact Catalogue

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	FREQ.	COMMENTS	STORAGE BOX
1000	Location 1 CSC 1	surface	chipping detritus	1	Onondaga	13-004:1
1001	Location 1 CSC 2	surface	chipping detritus	1	Onondaga	13-004:1
1002	Location 2 CSC 1	surface	white earthenware,	1	blue	13-004:1
			transfer printed			

All artifacts recovered from this project are stored in the corporate office of Mayer Archaeological Consultants. The collection has been packed in a box identified as 13-004:1. The packed collection measures 8 centimetres by 16 centimetres by 2 centimetres.

Records and documents kept or created for this project include photos, maps and field notes. A detailed list of these items is presented in Table 4. All digital items have been duplicated on a CD-Rom and all paper items have been duplicated. All items are housed at the Mayer Heritage office located at 90 Curtis Street, St. Thomas, Ontario.

Table 4: Documentary Record

DOCUMENT	NUMBER	DESCRIPTION
photos	77	digital format
maps	1	aerial map provided by client
field notes	6	pages

Analysis and Conclusions

Location 1

Location 1 is an Aboriginal findspot consisting of two chert flakes. According to the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists*, the site at Location 1 does not meet the criteria for requiring a Stage 3 assessment. At least 10 non-diagnostic artifacts are required within a 10 by 10 metre area are required on a site to warrant further assessment. Because of the paucity of artifacts recovered from the site, Location 1 is deemed to have little cultural heritage value or interest.

Location 2

Location 2 is a Euro-Canadian findspot, consisting of one ceramic artifact likely dating to between 1800 and 1900. According to the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists*, the site at Location 2 does not meet the criteria for requiring a Stage 3 assessment. At least 20 artifacts that date the period of use to before 1900

are required on a site to warrant further assessment. Because of the paucity of artifacts recovered from the site, Location 2 is deemed to have little cultural heritage value or interest.

RECOMMENDATIONS

The following recommendations are provided for consideration by Ricor Engineering Ltd. and by the Ontario Ministry of Tourism, Culture and Sport:

1. The sites at Location 1 and 2 have been fully documented according to the criteria listed in the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists*. No additional fieldwork is recommended for these two locations and no further assessment of the current study area is required.

ADVICE ON COMPLIANCE WITH LEGISLATION

The following advice on compliance with current legislation is provided for consideration:

- 1. This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection, and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of 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.
- 2 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 time as a licensed archaeologist has completed the 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 Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- 3. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and are 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*.
- 4. 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 appropriate municipal police, the local coroner, and the Registrar of Cemeteries at the Ministry of Consumer Services.
- 5. 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.

Bibliography and Sources

Barclay, Paulette

1977 Ceramic Analysis. State of California Department of Parks and Recreation., Sacramento.

Chapman, Lyman John and Donald F. Putnam

1984 The Physiography of Southern Ontario (Third Edition). *Ontario Geological Survey Special Volume 2*. Ontario Ministry of Natural Resources, Toronto.

Ellis, Chris & Neal Ferris

The Archaeology of Southern Ontario to A.D. 1650. *Occasional Publication No.*London Chapter, Ontario Archaeological Society Inc.

Energy, Mines and Resources Canada

1994 *Map 40-I/14*, 1:50,000 scale. Quo Vadis Mapping software.

Government of Ontario

2011 Standards and Guidelines for Consultant Archaeologists. Queen's Printer, Toronto.

2005 The Heritage Act, R.S.O. 2005. Queen's Printer, Toronto.

1990 The Planning Act, R.S.O. 1990. Queen's Printer, Toronto.

1997 Conserving a Future for our Past: Archaeology, Land Use Planning & Development In Ontario, An Educational Primer and Comprehensive Guide for Non-Specialists.

Ontario Ministry of Citizenship, Culture and Communications.

Page, H. R. & Co.

1877 Illustrated Historical Atlas of Elgin County, Ontario. Toronto. Reprint 1976.

Schut, L.W.

1992 *The Soils of Elgin County.* Report No. 16 of the Ontario Soil survey. Report No. 63 of the Ontario Centre for Soil Resource Evaluation. Ontario Ministry of Agriculture and Food: Guelph, Ontario.

von Bitter, Robert

2013 E-mail transmission from the Ministry of Tourism, Culture and Sport Archaeological Data Co-ordinator regarding registered archaeological sites within 1,000 metres of the study area.

Wright James V.

1968 *Ontario Prehistory: an eleven thousand-year archaeological outline.* Archaeological Survey of Canada, National Museums of Canada, Ottawa.

Image 1: View of Ploughed Field, Facing North from Southwest Corner



Image 2: Crew at Work, Pedestrian Survey, Facing East



Image 3: Ground Visibility Conditions



Image 4: Typical Test Pit



Image 5: General View of Wooded Area, Facing North



Image 6: Crew at Work, Test Pit Survey, Facing Southeast







Image 8: Ravine, East Edge of Study Area, Facing Southwest



Image 9: Ravine, Facing South



Image 10: Crew at Work, Reduced Interval Pedestrian Survey, Facing North

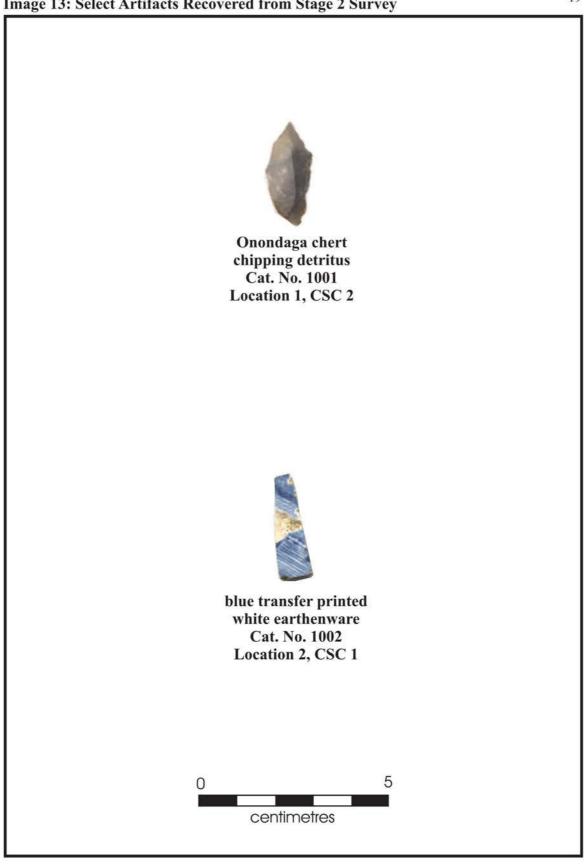


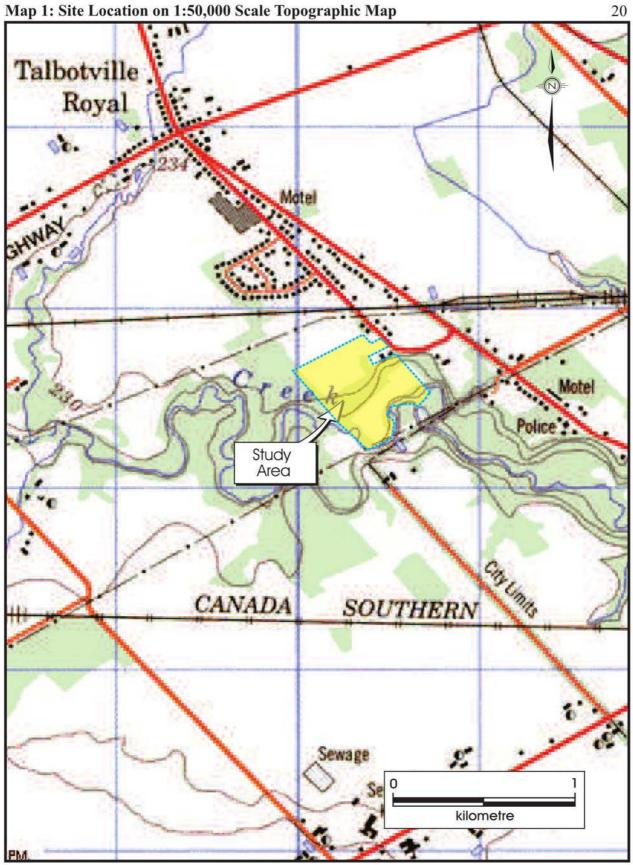
Image 11: Reduced Interval Ground Visibility Conditions

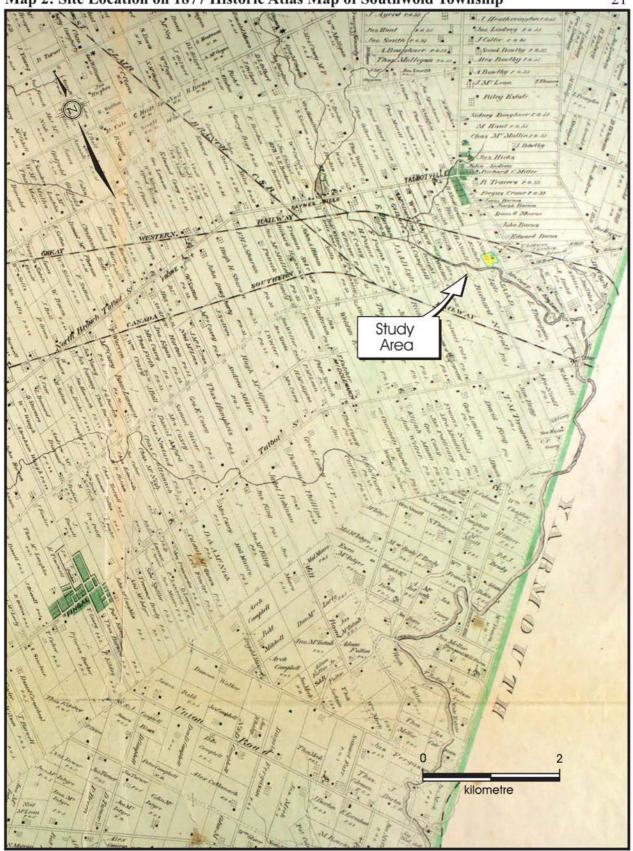


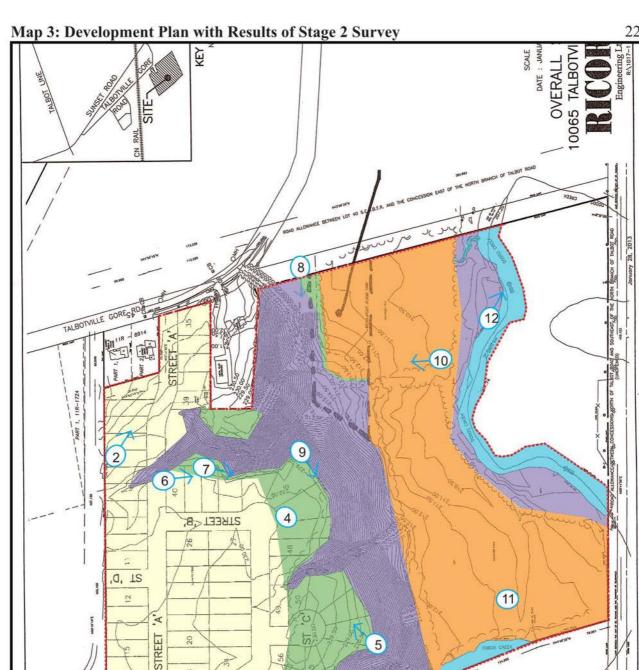












8

1

Study Area Limits

Area Pedestrian Surveyed at 5-metre Interval

Steeply Sloped, Low Potential, Not Assessed

Area Pedestrian Surveyed at Reduced 1.5-2 metre Interval

Area Test Pitted at 5-metre Interval

Dodds Creek, not assessed

Image and Direction Taken

3) REET

Scale 1:2500

Ministry of Tourism, Culture and Sport

Archaeology Programs Unit Programs and Services Branch Culture Division 401 Bay Street, Suite 1700 Toronto ON M7A 0A7 Tel.: (519) 675-6898

Email: Shari.Prowse@ontario.ca

Ministère du Tourisme, de la Culture et du Sport

Unité des programmes d'archéologie Direction des programmes et des services Division de culture 401, rue Bay, bureau 1700 Toronto ON M7A 0A7 Tél.: (519) 675-6898

Email: Shari.Prowse@ontario.ca



Nov 20, 2015

Paul James Clifford O'Neal (P040) Mayer Heritage Consultants Inc. 90 Curtis St. Thomas ON N5P1J2

RE: Review and Entry into the Ontario Public Register of Archaeological Reports:
Archaeological Assessment Report Entitled, "Revised Report on Archaeological
Assessment (Stages 1 & 2) 10065 Talbotville Gore Road, Talbotville, Lot 40,
Concession SENBTR, Township of Southwold, Elgin County, Ontario", Dated Oct
29, 2015, Filed with MTCS Toronto Office on Nov 19, 2015, MTCS Project
Information Form Number P040-360-2013, MTCS File Number 0003873

Dear Mr. O'Neal:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 Standards and Guidelines for Consultant Archaeologists set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the Stage 1-2 assessment of the study area as depicted in Map 3 of the above titled report and recommends the following:

The sites at Location 1 and 2 have been fully documented according to the criteria listed in the Ministry of Tourism, Culture and Sport's Standards and Guidelines for Consultant Archaeologists. No additional fieldwork is recommended for these two locations and no further assessment of the current study area is required.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Shari Prowse Archaeology Review Officer

cc. Archaeology Licensing Officer Chris M. Pincombe, Ricor Engineering Ltd Donna Ethier, Township of Southwold

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.



LEONARDHASSOCIATES

IN LANDSCAPE ARCHITECTURE

10841 Melrose Drive Rural Route 3 Komoka ON NOL 1R0

mlla@isp.ca www.leonardala.com 519.671.5267

To:

RICOR Engineering, Attn: Rick Dykstra P.Eng., Consulting Engineer

From:

Mike Leonard, Principal LAiLA

Date:

2016.01.14

SUBJECT: DHP Talbotville Property

INTRODUCTION

This correspondence is provided in response to your request for a status report on Species at Risk and Significant Wildlife Habitat within the vicinity of both the proposed wastewater treatment plant and proposed stormwater management facilities for a proposed subdivision at 10065 Gore Road, Talbotville, Township of Southwold, Elgin County. The proponent is 1873828 Ontario Limited.

This memo is provided as an addendum to the original EIS for the site, and is prepared in response to both the MNRF letter of September 14, 2015 and the Schedule C EA for the proposed Talbotville Wastewater Treatment Plant (WWTP) that is being prepared by Stantec (London).

The original EIS addressed a development proposal consisting of 67 single family residential lots and a stormwater management facilitie (SWMF). The site alteration envelope for the SWMF that was addressed in that EIS extends from the top of slope down a narrow ravine that terminates on the agricultural lands that lie between the toe of slope and Dodd's Creek. This area is generally depicted as Vegetation Community G on Figure 3 in the EIS. Part of this area, at the toe of slope, also contains the construction envelope for most of the conceptual layout of the proposed WWTP.

SPECIES AT RISK and SIGNIFICANT WILDLIFE HABITAT REQUESTS

In prior submissions for this file made to regulatory agencies, MNRF Aylmer District noted in correspondence dated 2015.08.10 that there were known occurrences of the following Species at Risk in the area of the site, with potential to occur within the proposed subdivision:

- Spoon-leaved Moss (END, general habitat protection);
- False Rue Anemone (THR, general habitat protection);
- Barn Swallow (THR, general habitat protection).

In addition, MNRF noted known occurrences of the following species relating to Significant Wildlife Habitat in the area of the site, with potential to occur within the proposed subdivision:

- Snapping Turtle
- Milk Snake

Both of these species are of Special Concern under the Endangered Species Act.

As a result of this input noted above from OMNR, biologists retained by LAiLA attended the site during the 2015 Summer and Fall seasons. James Holdsworth did the faunal survey on the morning of September 1, 2015; the floral survey was done by Paul O'Hara in the afternoon of October 15, 2015. It is emphasized that these reconnaissance surveys were conducted specifically in response to the enquiries from MNRF relating to the five

species noted above; these were not intended to be exhaustive updates of the life science work that was conducted for the prior EIS. Consequently the specialists were instructed by my office to furnish verbal reports to me on the presence or absence of these species; these are noted within the text of this memorandum. Due to a specific interest in breeding bird nesting within the site alteration envelope for the SWMF (and consequently the WWTP) that was raised in the EIS, a data report was requested for this aspect of the work and is attached to this correspondence.

GENERAL COMMENTS

In addition to the information noted below regarding SARs, the following general comments were provided by the specialists.

With respect to flora, Mr.O'Hara noted that:

- _ There are several Chinquapin Oak in the vicinity of the SWMF area (and consequently the WWTP) with a small patch of Butterfly Milkweed at the top of this ravine. Both could be regionally rare.
- _ Two species cited in the vicinity of the work: Elm-leaved Goldenrod (S1) and Burning Bush (S3). These were not observed within the proposed site alteration envelope for either the SWMF nor the WWTP.
- With respect to breeding birds, Mr. Holdsworth made a number of general comments with respect to potential habitat, and these are reported in the attachment to this correspondence.

I have also reviewed, at your request, the document prepared by Stantec for the PIC held 2015.12.16. Page 20/26 suggests that there are three specific occurrences of SAR's on the subject lands "...based on correspondence with the MNRF and field investigations." Based on our field work, this statement does not apply to lands that would be occupied by the sewage treatment plant and proposed stormwater management facilities. In addition, comments made on Pages 14/26 and 21/26 suggest that a number of field studies should be carried out. Except for the aquatic component, the bulk of those surveys have been undertaken for the areas of the proposed sewage treatment plant and stormwater management facilities. (Aquatic studies were not part of the scope of services in the ISR and EIS for the proposed plan of subdivision since the southerly limit was several hundred metres from Dodd's Creek, and the fact that there was no direct connection between limit of the work and the watercourse.)

COMMENTS ON SPECIES AT RISK and SIGNIFICANT WILDLIFE HABITAT

With respect to Barn Swallow, Snapping Turtle and Milk Snake, none of these species identified by MNRF was found in the area of direct impact generated by the SWM.

More specifically the following comments were noted by the faunal biologist:

Barn Swallow: The study area does not possess suitable breeding habitat for this species. There are no barns nor bridges, culverts or structures with suitable ledges. Suitable breeding habitat exists south of the proposed subdivision where arable lands with pasture, barns and outbuildings are present. Although open areas of the site may represent foraging habitat for the species, the farmlands to the south would be considered the primary foraging habitat in the local landscape.

Common Snapping Turtle: Suitable habitat for this species is present in and along the Dodd's Creek riparian corridor bordering the south edge of the lowland agricultural fields that are not affected by the SWM. These would be used potentially for egg-laying, especially those south-facing lands adjacent to the creek. The portion of the site subject to site alteration for the SWM does not possess suitable habitat for this species.

Milksnake: Coverboard surveys are the only method for properly determining site presence and/or usage by this species. Since this Species of Concern is not afforded habitat protection through the Endangered Species Act,

and given that these surveys need to be conducted over a minimum of two years, our opinion is that the need for additional work is unwarranted.

With respect to Spoon-leaved Moss and False Rue Anemone, neither species identified by MNRF was found in the area of direct impact generated by the proposed wastewater treatment plant and the stormwater management facilities.

I trust that this correspondence meets your requirements at the present time.

Regards,



Mike Leonard O.A.L.A., C.S.L.A.

Site Visit for nesting birds at DHP Talbotville

DATE 2015-09-01

WEATHER

Temp= 18-20 degrees Cloud Cover = mostly no clouds but some haze Wind= light Rain = nil

GENERAL

Site visit was made to find if any late nesting birds were in the areas designated for tree and brush removal. Areas investigated included the major ravine, the treeline out to the second smaller ravine, the second ravine, and the treeline out to the end of the development zone.

RESULTS:7:45-9:15

		number	
**	Bird Species	seen	Behaviours and nesting status
	AREA ALONG FIRST RAVINE		
4	Amarican Dahin	10+	adults and recently fledged young foraging in suitable nesting habitat but
	American Robin	LUT	no nests found
7	Chipping Sparrow	3+	adults and recently fledged young foraging in suitable nesting habitat but
	Cilipping Sparrow		no nests found
2	Red-eyed Vireo		adults foraging in suitable nesting habitat but no nests found, could be
	rica cycu viico		migrants
4	Eastern Phoebe	<u></u>	adult in area near suitable nesting habitat probably foraging
	Field Sparrow		adults foraging and then went into field, potentally post-breeding or
			migrants
			a few pairs noted foraging in suitable habitat for nesting but no nests
6	American Goldfinch	4	found. This species could still be nesting so care should be taken to keep
			an eye open for nests as clearing is done.
7	Yellow Warbler	2	foraging in suitable nesting area but no nests found
8	Blue Jay	2	adults in suitable nesting area but no nests found
9	Gray Catbird	2	adults in suitable nesting area but no nests found
10	Black-capped Chickadee	4+	adults and young in suitable nesting area but no nests found
11	Song Sparrow	3	adults and potentially young in suitable nesting area but no nests found
12	European Starling	20	adults and young in suitable nesting area but no nests found, probably
12	Northern Flicker		group of foraging birds adult in area near suitable nesting habitat, foraging
	House Wren		adult in area near suitable nesting habitat, foraging
·····	Black-throated Green Warbler		migrant
	Tennessee Warbler		migrant
······································	Nashville Warbler	1	migrant
			1110. A1.
	EDGE OF THE FOREST OUT TO SE	LOND RAVI	NE INCLUDING THAT RAVINE
1	Red-eyed Vireo	2	adults foraging in suitable habitat but no nest found
2	American Crow	4	adults probably with young in a group, just passing through

3	Wild Turkey		evidence including feathers, but did not see, most likely finished nesting							
	EDGE OF FOREST PAST SECOND RAVINE OUT TO END OF ZONE									
1	Mourning Dove	3	adults foraging in suitable habitat but not nesting							
2	Song Sparrow	foraging out to field and back into woods but no nests found								

DISCUSSION

No nests were found in the search areas, but plenty of potential habitat is present for many of the species that were located as above.

The main area of bird activity was the first ravine from the road. In this ravine, while investigating the edge and down in the depths of the ravine 17 species were noted.

Of these, most were found foraging, some of them accompanied by fledged young, but again, no active nests were noted.

All fledglings or potential local fledglings were free-flying and may not even have come from nests on the site.

As birds tend to have inconspicuous nest sites, it is possible a nest was overlooked, especially for species such as American Goldfinch. Most other birds it would be unlikely that they still have young in nests, but not totally out of the question.

CONCLUSION

It is our opinion (PR+ML) that the area is clear of breeding bird constraints, so cutting can proceed.

Should a nest be discovered during tree removal operations activity will stop in the immediate vicinity to allow for a re-inspection and mitigation direction by Leonard & Associates and its breeding bird specialist.

Gorrie, Cameron

From: Rick Dykstra (rick.dykstra@ricor.ca) < rick.dykstra@ricor.ca>

Sent: Tuesday, January 12, 2016 12:18 PM

To: Gorrie, Cameron

Cc: Ken Loveland; Bergman, Stephanie; Mike Leonard (mlla@isp.ca)

Subject: RE: Talbotville EA - MNRF concerns

Follow Up Flag: Follow up Flag Status: Flagged

Hi Cameron;

Thanks for the comments.

To clarify;

The area referred to in the EIS as the SWM area is the area from the top of slope in the development area down the gulley to the farm field below. It shows up roughly as vegetation community G on Figure 3 in the EIS.

The proposed location of the WWTP is within this SWM area, therefore the references are both in some instances in the letter.

The EIS refers to sanitary sewers going off site. This is based on the initial servicing report and the final engineering plans where the sewers go to Gore Road. It does not comment on the WWTP as the EA was not complete at the time.

The additional work completed this fall was directly in the SWM area (including where the WWTP is proposed).

Mike Leonard will provide the details of the field work and will update the letter.

We will get that to you as soon as possible to allow you to finish your report.

Rick

Rick Dykstra P.Eng

Consulting Engineer

RICOR Engineering Ltd.

519-963-0531 211 Adelaide St. South London ON N5Z 3K7 ricor.ca

From: Gorrie, Cameron [mailto:Cameron.Gorrie@stantec.com]

Sent: Tuesday, January 12, 2016 10:03 AM **To:** Rick Dykstra (rick.dykstra@ricor.ca)

Cc: Ken Loveland; Bergman, Stephanie Subject: RE: Talbotville EA - MNRF concerns

Rick,

Further to our phone conversation yesterday afternoon, we would like some clarification on the field-work that was completed subsequent to the EIS that was submitted as part of the development application for 10065 Gore Road.

Our concerns mostly reside with the fact that the EIS was completed for the development proposal consisting of 67 single family residential lots, and thus does not address/assess potential impacts of the WWTP itself. On page 6 within Section 4.0 Description of the Development Proposal, the EIS states that "according to the servicing report the proposed development will be serviced by a sanitary sewer which will be piped off-site using a conveyance buried within the municipal right of way."

We understand that since the EIS was completed, additional correspondence was received from the MNRF and additional field work was completed. It would be helpful if we could get more information on the additional fieldwork, including the dates, methodology, and survey results. The letter provided by Leonard + Associates dated January 08, 2016 notes that the bulk of the survey's identified on PIC board 21 were completed, so we just want to make sure we have the documentation for them.

Also, as was discussed, could you please revise the letter accordingly, as there are some instances where only SWM is referred to, as well as a revision to the date of the survey work (2016).

If you have any questions, please don't hesitate to contact Stephanie or myself.

Thanks,

Cameron Gorrie, P.Eng.

Project Manager, Water Stantec

600-171 Queens Avenue London ON N6A 5J7

Phone: (519) 675-6650 Cell: (519) 933-5918 Fax: (519) 645-6675

cameron.gorrie@stantec.com



The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.



Please consider the environment before printing this email.

From: Rick Dykstra (rick.dykstra@ricor.ca) [mailto:rick.dykstra@ricor.ca]

Sent: Thursday, January 07, 2016 3:16 PM

To: Gorrie, Cameron Cc: Ken Loveland

Subject: Talbotville EA - MNRF concerns

Hello Cameron;

Attached is a memo from our Landscape Architect related to the comments from the MNRF for our subdivision and for the EA.

As outlined in the EIS for the subdivision site surveys were conducted.

This memo summarizes the findings of additional site surveys conducted in response to the MNF comments.

Let us know if you have any questions.

Thanks,

Rick

Rick Dykstra P.Eng Consulting Engineer

RICOR Engineering Ltd. 519-963-0531 211 Adelaide St. South London ON N5Z 3K7 ricor.ca



10841 Melrose Drive Rural Route 3 Komoka ON N0L 1R0

mlla@isp.ca www.leonardala.com 519.671.5267

To: RICOR Engineering, Attn: Rick Dykstra P.Eng., Consulting Engineer

From: Mike Leonard, Principal LAiLA

Date: 2016.01.08

SUBJECT: DHP Talbotville Property SAR + SWH

This correspondence is provided in response to your request for a status report on Species at Risk and Significant Wildlife Habitat within the vicinity of both the sewage treatment plant and proposed stormwater management facilities for a proposed subdivision at 10065 Gore Road, Talbotville, Township of Southwold, Elgin County. The proponent is 1873828 Ontario Limited.

In prior submissions for this file made to regulatory agencies, MNRF Aylmer District noted in correspondence dated 2015.08.10 that there were known occurrences of the following Species at Risk in the area of the site, with potential to occur within the proposed subdivision:

- Spoon-leaved Moss (END, general habitat protection);
- False Rue Anemone (THR, general habitat protection);
- Barn Swallow (THR, general habitat protection).

In addition, MNRF noted known occurrences of the following species relating to Significant Wildlife Habitat in the area of the site, with potential to occur within the proposed subdivision:

- Snapping Turtle
- Milk Snake

Both of these species are of Special Concern under the Endangered Species Act.

As a result of this input noted above from OMNR, biologists retained by LAiLA attended the site during the 2016 Summer and Fall seasons. James Holdsworth did the faunal survey; the floral survey was done by Paul O'Hara.

With respect to Barn Swallow, Snapping Turtle and Milk Snake, none of these species identified by MNRF was found in the area of direct impact generated by the SWM.

More specifically the following comments were noted by the faunal biologist:

Barn Swallow: The study area does not possess suitable breeding habitat for this species. There are no barns nor bridges, culverts or structures with suitable ledges. Suitable breeding habitat exists south of the proposed subdivision where arable lands with pasture, barns and outbuildings are present. Although open areas of the site may represent foraging habitat for the species, the farmlands to the south would be considered the primary foraging habitat in the local landscape.

Common Snapping Turtle: Suitable habitat for this species is present in and along the Dodd's Creek riparian corridor bordering the south edge of the lowland agricultural fields that are not affected by the SWM. These would be used potentially for egg-laying, especially those south-facing lands adjacent to the creek. The portion of the site subject to site alteration for the SWM does not possess suitable habitat for this species.

Milksnake: Coverboard surveys are the only method for properly determining site presence and/or usage by this species. Since this Species of Concern is not afforded habitat protection through the Endangered Species Act, and given that these surveys need to be conducted over a minimum of two years, our opinion is that the need for additional work is unwarranted.

With respect to Spoon-leaved Moss and False Rue Anemone, neither species identified by MNRF was found in the area of direct impact generated by the proposed sewage treatment plant and the stormwater management facilities.

I have also reviewed, at your request, the document prepared by Stantec for the PIC held 2015.12.16. Page 20/26 suggests that there are three specific occurrences of SAR's on the subject lands "...based on correspondence with the MNRF and field investigations." Based on our field work, this statement does not apply to lands that would be occupied by the sewage treatment plant and proposed stormwater management facilities. In addition, comments made on Pages 14/26 and 21/26 suggest that a number of field studies should be carried out. Except for the aquatic component, the bulk of those surveys have been undertaken for the areas of the proposed sewage treatment plant and stormwater management facilities. (Aquatic studies were not part of the scope of services in the ISR and EIS for the proposed plan of subdivision since the southerly limit was several hundred metres from Dodd's Creek, and the fact that there was no direct connection between limit of the work and the watercourse.)

I trust that this correspondence meets your requirements at the present time. Feel free to contact me if any clarification is required by you or any of the other parties involved with this file.

Regards,



Mike Leonard O.A.L.A., C.S.L.A.

ENVIRONMENTAL IMPACT STUDY

10065 Gore Road Township of Southwold, Ontario

November 2014

Leonard + Associates in Landscape Architecture

1.0 INTRODUCTION

The site is in Talbotville, Township of Southwold, located on 10065 Gore Road, on the north side of Dodd's Creek. (Tab A: Figures 1 and 2). Single family residential lots are proposed for part of the lands within the legal boundary of the property.

Residential, estate residential and agriculture comprise the existing land uses.

The purpose of this report is to address, within the context of municipal and provincial policies and statutes, the impact of the proposed development on the natural heritage aspects of the subject lands.

According to the proponent's engineers the proposed development will be serviced by a sanitary sewer which will be piped off-site using a conveyance within the municipal right of way. It is anticipated that other piped and cabled services will be buried beneath the paving or within the municipal road allowance.

1.1 Vegetation Patch: Context

The subject lands are adjacent to Dodd's Creek, which is located to the south. On the site itself there is an incised, first-order intermittent stream that flows north to south through a portion of the site, connecting to Dodd's Creek. Vegetated slopes of about 25-50% are found between the upland portion of the site that comprises the development parcel (the subject lands) and the lower portion within the Dodd's Creek floodplain (Tab A: Figure 3).

Most of the vegetation communities have been modified by human activities. Vegetation is present along the slopes but the relatively flat lands at the top and bottom of the slopes have been cleared and are used for agricultural and residential purposes.

1.2 Planning Considerations

Provincial

It is understood that the development will be serviced off-site on the basis of a Class Environmental Assessment for the provision of sanitary services by means of a sewage treatment plant.

Archaeological concerns have been addressed in a separate report by Mayer Archaeological consultants dated July 18, 2013. Soils and slope stability by LVM dated May 9, 2013 and have been cited in this EIS.

Municipal

It is our understanding that the subject lands are within the area designated as "Hamlet" (specifically the Talbotville Hamlet), and are therefore subject to the policies in Section 3.0 of the Township of Southwold OCP (2014). Residential uses are among the land uses permitted within Hamlets but servicing requirements must be met.

The Township of Southwold Official Community Plan (2014) indicates that the subject lands include "Hazard Prone Areas", as identified in Schedule A, and are therefore subject to the policies outlined in Section 9.0 of the OCP.

It is our understanding that no secondary or area plans have been prepared, nor are required, for this part of the municipality.

It is our understanding that an official plan amendment will not be required for this draft plan of subdivision.

Conservation Authority

There is a Kettle Creek Conservation Authority (KCCA) regulation limit and regulatory flood limit associated with the 1st order, intermittent tributary and Dodd's Creek located on the site.

In addition to municipal approval of the development, a conservation authority review is also required because of these limits. The Regulation Limit includes the vegetated slopes south of the tablelands where the proposed development is situated. The Regulatory Flood Limit comprises the flat floodplain adjacent to the creek. Accordingly, there are setback requirements from hazard areas on site, as noted in the LVM Geotechnical Engineering Report.

2.0 NATURAL HERITAGE SYSTEM

2.1 Abiotic Elements

A Geotechnical Engineering Report prepared by LVM was conducted and makes reference to bedrock geology, surface features and local groundwater conditions.

Surface drainage

Site drainage is generally from north to south and perpendicular to Dodd's Creek. Existing runoff is conveyed across the development lands to Dodd's Creek by overland flow and intermittent stream channels. The intermittent stream channels begin midway across the site and act to convey runoff down

the slopes from the upper tablelands to the floodplain associated with Dodd's Creek.

There is a small section of roadside ditch along Talbotville Gore Road which primarily conveys right of way drainage.

Groundwater conditions

Seasonal groundwater seepage at isolated locations along the toe of slope was observed in the south-east corner of Community D (Figure 3) during the 2011 Fall season and the 2012 Spring season. This seepage zone was dry at all other periods observed, indicating that these variations represent base flow contribution from a seasonally fluctuating groundwater table.

Slopes

The topography ranges from level to undulating land. Most of the development lands are relatively flat. There is a slope from the upper portion of the site, where development is proposed, down to the lowland area along Dodd's Creek. This slope generally runs parallel to Dodd's Creek and is in the range of 20-28% (3.0 to 5 horizontal to 1 vertical).

The upper portion of the site is currently used for agriculture. The slopes within the subject site are vegetated with a mixture of cultural woodland and deciduous forest. The lower portion of the site along Dodd's Creek is also cultivated, with access provided by an unpaved road that crosses the slope.

The intermittent watercourse has three different grade sections. The portion above the slope is 4.6%, the segment down the slope is 14% and the portion from the bottom of the slope to Dodd's Creek is 3.5%. Dodd's Creek itself has a slope of less than 1% in the vicinity of the site and is more than 80 meters from the toe of slope at the closest point.

2.2 Biotic Elements

The anthropogenic, cultural and successional vegetation communities found on-site, described in a manner consistent with the provincial ecological land classification system, are depicted on Tab A (Figure 3 and 4) and Tab B of this report.

The flora data that served as the basis for this vegetation community delineation, prepared by Leonard+Associates in consultation with L.Lamb (plant biologist), is found in Tab B of this report. The faunal data, prepared by Leonard+Associates in consultation with D. Martin (faunal biologist), is summarized within the context of provincial and municipal analytical filters in Section 4 of this report and detailed in Tab C.

3.0 ECOLOGICAL FUNCTIONS AND FEATURES

3.1 Provincial Parameters

The following parameters describing the ecosystem-based functions and features of the site and its surrounding landscape are consistent with Appendix A of the Natural Heritage Reference Manual 2010 for the Natural Heritage Policies of the Provincial Policy Statement, 2005.

3.2 Municipal Parameters

It is our understanding that the Township of Southwold and Elgin County uses the parameters from the Ontario Ministry of Natural Resources Natural Heritage Reference Manual 2010 (Appendix A) presented within this report in to assess ecological functions and sensitivities.

3.3 Vegetation Community Attributes and Distribution

The following vegetation communities exist on-site (Tab A: Figure 3):

ANTHROPOGENIC

- Maintained Lawn
- Agricultural Field

CULTURAL COMMUNITIES

· CUW 1 Mineral Cultural Woodland

NATURAL VEGETATION (TERRESTRIAL COMMUNITIES)

- FOD 7-4 Fresh-Moist Black Walnut Lowland Deciduous Forest
- FOD 4-2 Dry-Fresh White Ash Deciduous Forest
- FOD 2- 2 Dry-Fresh Oak-Hickory Deciduous Forest
- FOD 7-5 Fresh-Moist Black Maple Lowland Deciduous Forest

These communities occur frequently in the local and regional landscape. They form part of a spatially extensive vegetation continuum in excess of 40ha that extends over a wide swatch of the regional landscape.

On the subject lands the natural vegetation communities are linear and rectangular in their geometry, ranging in width from 60m – 120m with a high edge to area ration. Consequently, there are no faunal species present that are indicative of interior forest conditions.

3.4 Vegetation Community Functions

Landform/Vegetation Community Representation

The presence of forested slopes occurs frequently in the local and regional landscape.

With respect to naturalness and disturbance, the historic disturbance level of the site has been assessed using the provincial ELC parameters. Logging has taken place on-site both historically and in certain portions of the contemporary vegetation setting with resultant canopy gaps. The site has been grazed contributing to the presence of non-native plant species. Several hardwood species are exhibiting disease symptoms that are quite common within the regional landscape leading to decline in specific vegetation.

Hydrological Values

The subject lands are in a headwater setting that drain into Dodd's Creek via a 1^{st} order, intermittent watercourse tributary. There is some seasonal groundwater seepage along the toe of slope in certain locations. No wetlands, lakes or ponds are present.

Habitat Diversity and Complexity

There is not much diversity of habitats on the subject lands. The site is lacking in communities such as wetlands, grassland, dry upland shrubby fields, conifer patches and mature woodland with forest interior (Tab C: Faunal Report). Due to this lack of diversity of habitats, the subject lands present only typical opportunities for faunal population for life cycle activities such as foraging, breeding and hibernating.

Species Diversity

The study area does not have a high diversity of animal species or communities. All of the species found around the subject lands are common and widespread in southwestern Ontario (Tab C: Faunal Report).

Species Rarity

The only significant faunal species recorded was the Monarch Butterfly which is listed as Special Concern in Canada and Ontario. Two individuals were recorded, one on May 15 and one on June 7 (2012). These dates are both within the migratory period of this species. The obligate food plant of the caterpillar was not common on the subject lands. Only a few individual plants were noted. Even if Monarchs bred on site there would not be significant numbers produced. (Tab C: Faunal Report).

With respect to atypical plants there are no legislated nor provincially significant species on-site. Some of the vascular plants found are not widespread occurrences in the local landscape.

Corridor Attributes

The wooded slope on the south side of the tableland is connected to a wooded slope to the east and to the narrow buffer of Dodd Creek to the west

and the large woodland to the northwest. The woodland provides a corridor for wildlife movement between these areas (Tab C: Faunal Report). However, there are no species that are specifically associated with this corridor. All of the species recorded are common and widespread in southwestern Ontario.

The wooded slope is generally wider than 60 meters and therefore provides a viable short corridor.

4.0 DESCRIPTION OF THE DEVELOPMENT PROPOSAL

The development application is for a single family residential development of 67 lots as well as open space (Tab A, Figure 4). The majority of the development is on a relatively flat upland tableland that is currently in agricultural use. Development is adjacent to a slope gradient of 25-50% that extends southerly to the lowland area alongside Dodd's Creek. Slope stability has been addressed in the LVM report.

The direction of drainage on the subject lands is generally from north to south. Surface runoff is currently conveyed down the slope to the Dodd's Creek via two ravines or gullies. (Tab A: Figure 4). One of these, referred to as "the westerly ravine or gully", bisects part of Vegetation Community F. The other, referred to as "the easterly ravine or gully", constitutes all of Vegetation Community G.

Minimal amount of grading will be required for the residential lot fabric in the upland development section.

According to Ricor's servicing report grading will be required in order to provide proper drainage for the site. Stormwater will be controlled, self-contained and discharged into the historic agricultural drainage pattern at the easterly ravine. To accomplish this, surface flows in the vicinity of Lots 50-58 will be directed away from the westerly ravine and conveyed north then east into the discharge point at the easterly ravine (Tab A: Figure 4)

According to the servicing report the proposed development will be serviced by a sanitary sewer which will be piped off-site using a conveyance buried within the municipal right of way. It is anticipated that other piped and cabled services will be buried within the municipal road allowance.

Some of the existing vegetation on-site along the top of slope will be removed to accommodate the proposed development. The extent of this

removal is shown in the draft plan. It is our understanding that the proponent intends to preserve as much of the vegetation as possible in this specific area.

5.0 TERMS OF REFERENCE FOR THE E.I.S

5.1 Functions and Features

This environmental impact study (EIS) report outlines the natural heritage functions and features of the site and addresses any potential impacts associated the proposed development.

Based on the internal scoping exercise conducted by Leonard + Associates in Landscape Architecture and summarized in the Issue Scoping Report (2012) It was our opinion that the following potential impacts should be addressed in this EIS:

- The effect of the proposed draft plan of subdivision on corridor size and connectivity with respect to the linkage between the large blocks of habitat found along the Dodd's Creek riparian corridor that support the faunal functions identified in this report;
- The relationship of this corridor to breeding bird habitat, especially with respect to site alteration;
- The extent of the development limit established in the draft plan in relationship to the maximum hazard limit, with particular reference to slope stabilization and erosion control;
- The management of stormwater conveyance through the on-site tributary that outlets into Dodd's Creek, and in particular the specific outlet location. The EIS identifies the need for landscape management plans for any lands within the SWM block that interface with natural successional communities;
- The impact of the development envelope on adjacent vegetation and faunal habitat. The EIS will examines the need for **transition zones** between the development footprint and the natural successional communities on-site and the potential need for the preparation of landscape management plans for these transition zones;
- The retention of habitat for species at risk that occur on-site, and

 The retention of habitat for the atypical vegetation species that occur on-site.

5.2 EIS Protocols

The assessment of specific impacts of the development proposal will take into account biological forms and ecological functions in specifying what mitigation, if any, is required to ensure that the critical functions outlined in this report are maintained in the post development setting. These will also guide the subsequent landscape treatment of the site.

The assessment will be conducted using protocols and parameters defined in The Natural Heritage Reference Manual (OMNR 2010) and the Significant Wildlife Habitat Technical Guide (OMNR 2001) in a manner that is consistent with the Natural Heritage Policies of the Provincial Policy Statement, 2005.

The following parameters will be used:

_ The feature or function affected;

_ Description of Activity with respect to the form of site alteration predicated by the proposed development;

_ Potential adverse effects on species or habitat, and whether or not these are direct, indirect or residual, and

_ Proposed measures to mitigate adverse effects that may occur including the consideration of reasonable alternative forms of site alteration, the rationale for the adopted alternative, the potential for avoiding activities in certain seasons, modifications to the activity design, and the review of timelines and phasing for the proposed development.

In certain instances regulatory agencies may request monitoring and reporting plans for mitigation measures and also contingency plans for mitigation measures.

6.0 ASSESSMENT OF POTENTIAL IMPACTS

The following assessment of the potential impacts of this development proposal takes into account both direct and indirect impacts that may result from various aspects of the land development process on the subject lands as well as the adjacent lands.

This assessment was conducted using protocols and parameters consistent with the <u>Natural Heritage Reference Manual (OMNR 2010</u>) and the <u>Significant Wildlife Habitat Technical Guide (OMNR 2001)</u>.

6.1 Function: Corridor Size and Connectivity

Potential Effects / Net effect

The development area is adjacent to the Dodd Creek vegetation corridor. The wooded corridor, generally wider than 60m, provides habitat for wildlife. However there are no species that are specifically associated with this corridor.

Site alteration to accommodate finished grades calls for the removal of a +/-5m to 25m vegetation width at the top of slope along the rear lot lines of Lots 48-59. There will be no impact on connectivity. The wooded slope and lowland area are more important to the corridor function, and no development is planned for these areas with the exception of a stormwater management feature through the eastern gully that will outlet across the Dodd's Creek floodplain.

Loss of vegetation in Community F on the uplands will have a marginal impact on the corridor size.

6.2 Function: Presence of Breeding Bird Habitat

Six "Partners In Flight" priority species were considered to be breeding on site and a total of 37 species of the 42 species of birds observed were on-site breeders. The majority of the breeding birds were found observed along the south slope outside of the development area.

Description of Activity / Potential Effects

As noted in the discussion of corridor function, site alteration to accommodate finished grades calls for the removal of a +/- 5m to 25m vegetation width at the top of slope along the rear lot lines of Lots 48-59.

Potential direct impacts include vegetation removal of trees used by breeding birds. Potential indirect direct impacts include disturbance to breeding birds from noise and other factors during the construction process.

Net Effects

Loss of vegetation in Community F on the uplands will have a marginal impact on the overall spatial extent of vegetation cover in the local and regional landscape. The wooded slope and lowland area are more important

for the provision of breeding bird habitat, and no development is planned for these areas with the exception of a stormwater management feature.

Measures to Mitigate Adverse Effects

Avoid major construction activities that involve site alteration, such as the creation of the stormwater management feature during the breeding bird season. This occurs for most species during the Summer season, with continued nesting in certain instances extending into the Fall season.

6.3 Function: Slope Stabilization and Erosion Control

Description of Activity

The geotechnical basis for the development limit is illustrated in the LVM document.

The need for this work was triggered by the fact that portions of the subject lands are affected by the KCCA regulation limit. The key parameters in setting the development limit were (in specific locations) a toe erosion allowance, top of slope delineation, stable slope line and erosion hazard limit, established in a manner consistent with the PPS 2005 hazard land policies.

Potential Effect(s)

Development adjacent or on steep slopes has the potential to undermine existing slopes.

According to the Geotechnical Engineering Report conducted by LVM, several slopes adjacent to the development envelope have the 'slight' potential for slope failure.

Proposed Measures to Mitigate Adverse Effects

Given this potential, setbacks on specific slopes that take into account a determined stable slope line plus an additional setback to permit future access for implementing remedial measures that at some future date might required. This setback line is termed the erosion hazard allowance.

Through discussions with Kettle Creek Conservation Authority it has been determined that no erosion hazard allowance is required and all potentially unstable slopes will be remedied through development.

Potential Effects / Net effect

The smaller gully between block 49 and 50 has a slope of 40-51% and a current slope setback recommendation of 6 and 7.3m at the top of the slope. The geotechnical report suggests that once this gully is filled in and drainage to this area eliminated, the setback will not be required. Erosion control measures will be needed.

The larger gulley in Block 70, the SWM block, has a slope of 28-40% near the northern end where the portion of the gulley that is planned to be filled is located. The current recommended slope setback for the north end of the gulley is 6-9.7m at the top of the slope. The geotechnical report suggests that once the north portion of this gulley is filled in the setback requirements can be omitted, providing that the stormwater management facility (which was previously planned for this area) incorporates erosion protection. Erosion control measures will be needed.

Proposed Measures to Mitigate Adverse Effects

A sediment and erosion control plan consistent with the OPSS, OPS and KCCA standards should be prepared for the affected area.

6.4 Function: Stormwater Conveyance and Habitat

Description of Activity

There are currently two intermittent stormwater channels within the development area, a smaller gulley covering parts of Lots 49 – 51 and a larger gulley within Block 70, the SWM block. The development plan will eliminate drainage to the smaller gulley between Lots 49-51; water that is currently moving through this gulley will be redirected to Block 70, the SWM block. The development plan recommends filling a section of this larger gulley and processing stormwater through an enhanced channel at the toe of the valley slopes and beyond.

Potential Effect(s)

The proposed development will directly impact both of these stormwater channels. Increased impervious surfaces in the new development will also have an impact on stormwater conveyance. Impervious surfaces will increase the volume and velocity of water that is directed to the single outfall in Block 70, the SWM block. The increased amount and velocity of water has the potential to increase erosion and sedimentation.

Potential direct impacts include vegetation removal to accommodate fill placement in portions of both gullies, along with the concentration of stormwater flows.

Potential indirect impacts include erosion, the effect on landscape character and sediment loading into Dodd's Creek.

Proposed Measures to Mitigate Adverse Effects

Following draft plan review, as an addendum to this EIS, site-specific landscape restoration plans should be prepared for the affected areas

described above.

In addition to this landscape restoration of affected areas, construction of a level spreader control weir to reduce velocities at the toe of slope should be considered to reduce erosion of the broad floodplain adjacent to Dodd's Creek that is used for agriculture. The routing of the outlet flow from this weir, whether it be through buried pipe or trapezoidal swale, is of limited consequence to the terrestrial habitat within the subject lands.

Potential Effects / Net effect

The stormwater management configuration will:

- Minimize flood risk by improving channel stability in the eastern gully
- Maintain ground and surface water baseflows
- Protect the quality of ground and surface waters
- Restore areas disturbed by the implementation of the conveyance facility.

6.5 Function: Transition Zones

Potential Effect(s)

The lands within the development area are mostly within Community Ag (Agricultural Field). Direct impacts include vegetation clearing in Community F (CUW 1 Mineral Cultural Woodland) to accommodate rear yard grading along the top of slope. Potential indirect impacts include the effect of that grading on the rooting zone of Community D (FOD 4-2 Dry-Fresh White Ash Deciduous Forest) on the south facing slope.

The 60m vegetation width on the existing slope that is part of the primary wildlife corridor will be protected in its entirety by the stable slope.

The specific attributes of the water table, soil texture and adjacent vegetation indicate that the development envelopes can extend to the top of slope.

Proposed Measures to Mitigate Adverse Effects

Construction should be undertaken in general accordance with the *OPPS* and *OPSD*, the Guidelines on Erosion and Sediment Control for Urban Construction Sites prepared by OMNR, and relevant guidelines provided by the KCCA.

Location-specific placement of erosion and sediment control fence should be specified on in a site-specific sediment and erosion control plan. Protection

should be provided to prevent sediment deposits from the grading envelope from penetrating the adjacent woodland floor.

6.6 Feature: Presence of Species at Risk Terrestrial Habitat

The only significant faunal species found on site was the Monarch Butterfly, which is listed as Special Concern in Canada and Ontario. Although two individuals were recorded, breeding habitat for the butterfly was not observed.

Description of Activity / Potential Effects / Net Effects

Potential direct impacts do not exist, since most of the butterflies recorded on the surveys were found in a narrow strip of grasses and herbs at the bottom of the south-facing slope outside of the development. Potential indirect impacts are unlikely as long as this area between the toe of slope and the agricultural land on the floodplain is retained in the future.

6.7 Feature: Presence of Atypical Vegetation

While there is no observed legally protected floral Species At Risk on the subject lands, there are two potentially atypical floral species that have been observed. These species are on Ontario's Natural Heritage Information Centre species list:

- Cirsium discolour Field thistle (Communities B+D+F at top of slope + G)
- Sisyrinchium albidum White blue-eyed grass (Community F)

Potential Effect(s)

Potential direct impacts will only be affected at the locations of the stormwater management block and the west gulley.

Proposed Measures to Mitigate Adverse Effects

Species location should be determined in a preconstruction visit and if it is determined that their location is in one of the areas proposed for site alteration, a management plan involving protection, transplantation or modifications to the activity should be prepared.

Potential Effects / Net effect

None, as long as the above considerations are taken into account.

7.0 CONCLUSIONS

Following a review of the regulatory agency criteria and the analysis presented in this report it is my opinion that the proposed draft plan of

subdivision is consistent with the Provincial Policy Statement (2005) and other policies of the Province and the Municipality.

The development will contribute to the wise use and management of resources since it will protect surface water and groundwater features and their related hydrologic functions.

The development will contribute to the protection of public health and safety since it will be directed to areas outside of hazardous lands

The development will contribute to the protection of significant natural heritage features since it will protect these for the long term, maintain ecological function and biodiversity, and exclude development and site alteration from the adjacent valleylands, retaining that portion of the Dodd's Creek riparian corridor that exists on site.

The proposed site alteration and development can proceed without negative impact on the natural heritage systems of the site and its surrounding landscape, as long as the mitigative measures that are provided in Section 6 of this report are followed.



Mike Leonard O.A.L.A. C.S.L.A.

TAB A

Figure 1 Landscape Context: Local Figure 2 Landscape Context: Area

Figure 3 Vegetation Communities: Area Plan

Figure 4 Vegetation Communities: Site Concept Plan









TOWNSHIP OF SOUTHWOLD







DHP TALBOTVILLE

10065 TALBOTVILLE GORE ROAD, TOWNSHIP OF SOUTHWOLD FIGURE 2 LANDSCAPE CONTEXT: AREA PLAN

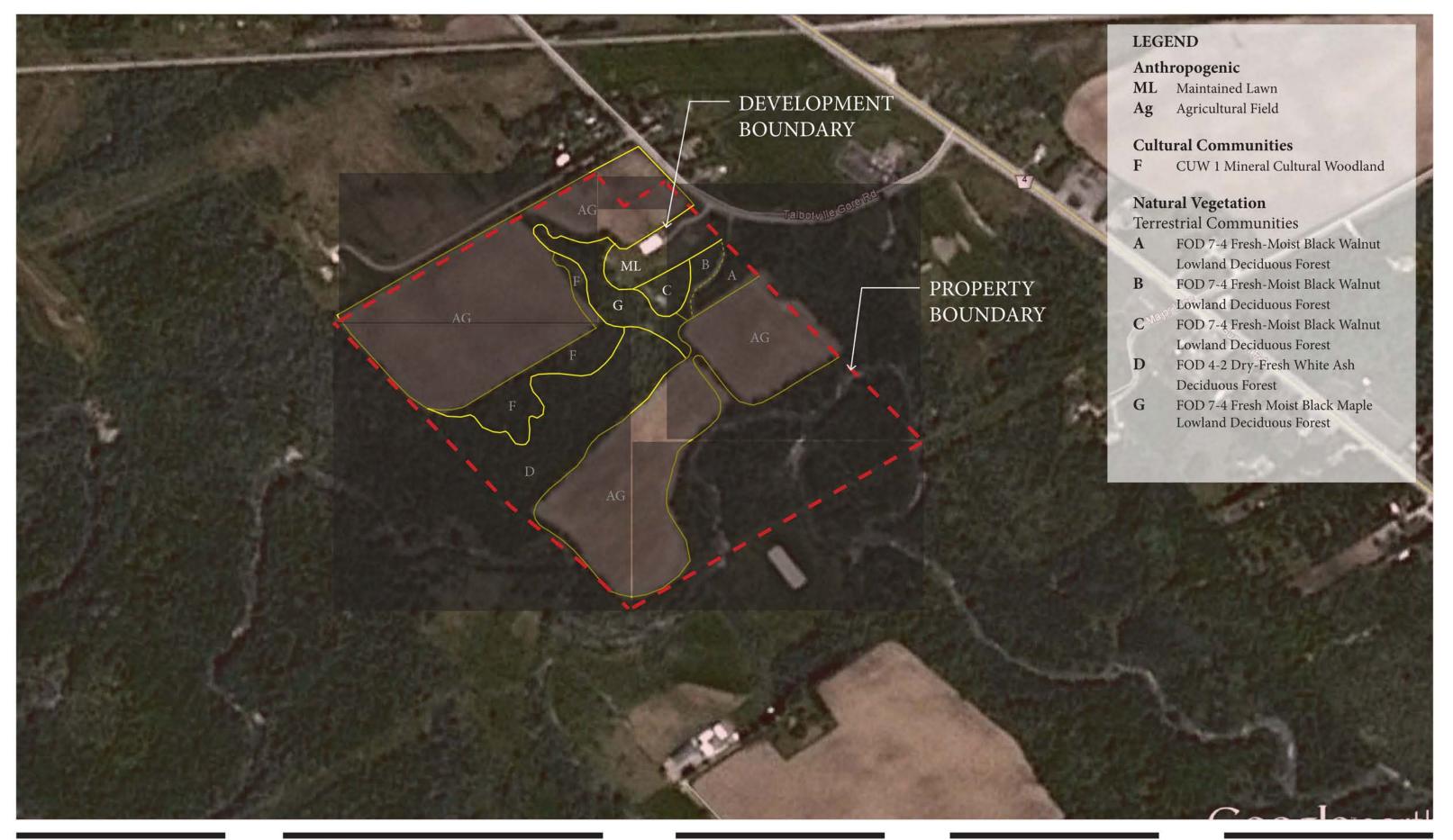
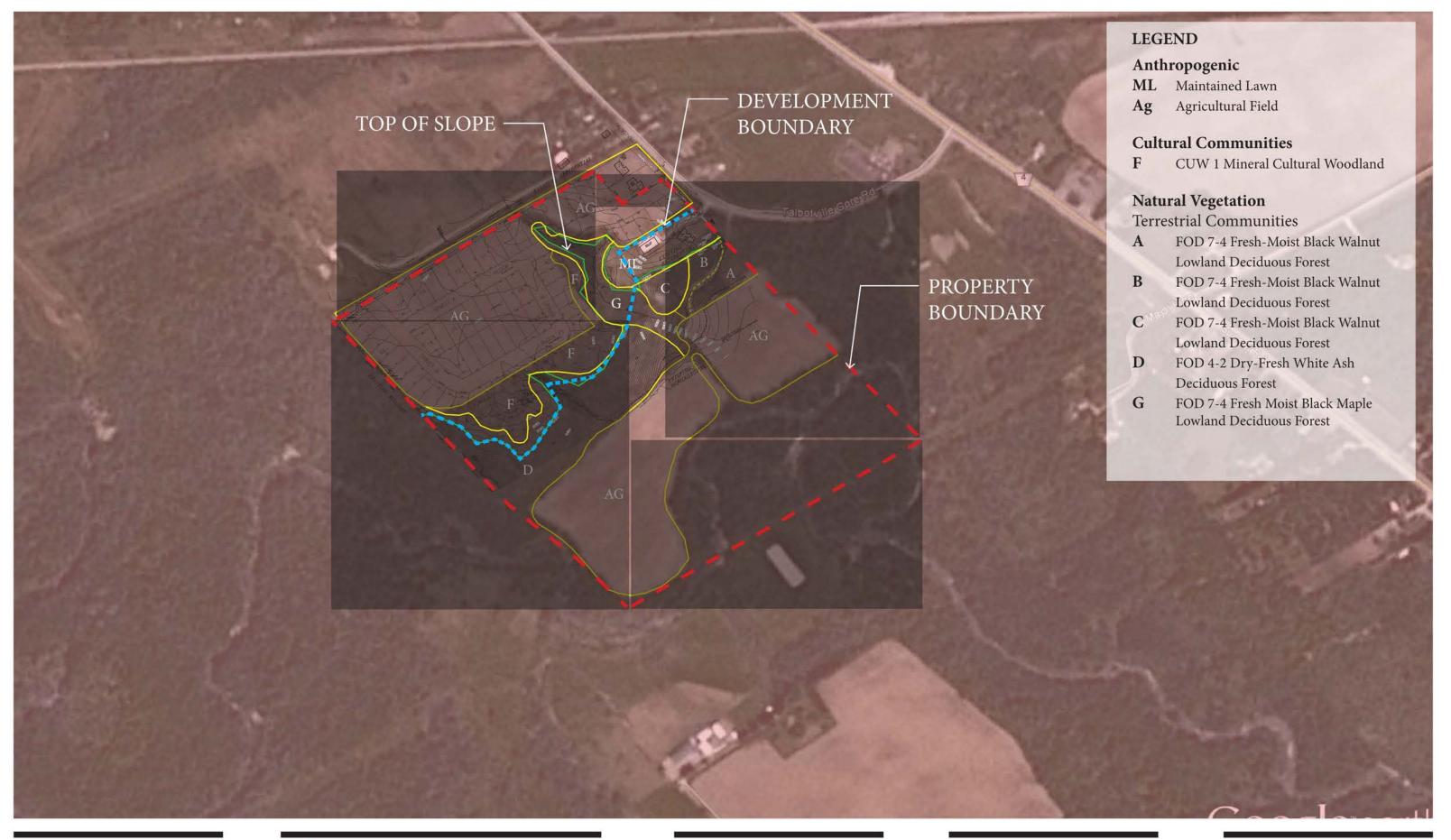






FIGURE 3







TAB B

DHP Talbotville Plant List



			OT A TILIC					_			1	
SEASON	COMM. #		STATUS MDSX		FAMILY	ACRONYM	С	٧	WETNESS		SCIENTIFIC NAME	COMMON NAME
	A,D,E				ACERAC	ACESACCNIG	7		3 FACU	N Tree	Acer saccharum ssp. nigrum (A. ni	BLACK MAPLE
	G				ACERAC	ACESACCSAC	4				Acer saccharum ssp. saccharum	
	D				ANACAR	RHURADINEG	5				Rhus radicans ssp. negundo (Toxio	
	D				APOCYN	APOCANN	3		0 FAC	N Forb	Apocynum cannabinum (A. sibiricu	INDIAN HEMP;HEMP DOGBANE
	В				ARACEA	ARITRIP	5	ŀ	-2 FACW-	N Forb	Arisaema triphyllum	JACK-IN-THE-PULPIT;INDIAN-TURNIP
	E(ToS),G				BETULA	CARCARO	6		0 FAC	N Tree	Carpinus caroliniana	HORNBEAM;BLUE-BEECH
	G				BETULA	CORCORN	5				Corylus cornuta	BEAKED HAZELNUT
	E				BETULA	OSTVIRG	4		4 FACU-	N Tree	Ostrya virginiana	IRONWOOD;HOP HORNBEAM
	E,E(ToS)				BORAGI	CYNOFFI	*		5 UPL	A Forb	CYNOGLOSSUM OFFICINALE	HOUND'S TONGUE
	C,D,G				CAPRIF	LONMORR	*		5 UPL	A Shrub	LONICERA MORROWI	MORROW'S HONEYSUCKLE
	B,C				CAPRIF	LONTATA	*		3 FACU	A Shrub	LONICERA TATARICA	SMOOTH TARTARIAN HONEYSUCKLE
	A, E(ToS),G				CAPRIF	TRIAURA	7		5 UPL	N Forb	Triosteum aurantiacum (T. perfolia	HORSE-GENTIAN
	D				CAPRIF	VIBLENT	4	ŀ	-1 FAC+	N Shrub	Viburnum lentago	NANNYBERRY;SHEEPBERRY
	E				CAPRIF	VIBOPUL	*	Г	0 FAC		VIBURNUM OPULUS	EUROPEAN HIGHBUSH CRANBERRY
	E(ToS)				CARYOP	CERFONT	*	Г	3 FACU	A Forb	CERASTIUM FONTANUM (C. VULG	MOUSE-EAR CHICKWEED
	B,E(ToS)				CARYOP	DIAARME	*	Г	5 UPL		DIANTHUS ARMERIA	DEPTFORD PINK
	E	S3	R2	R2	CELAST	EUOATRO	8	Г	1 FAC-	N Shrub	Euonymus atropurpurea	WAHOO;BURNING-BUSH
	E				CELAST	EUOOBOV	6	Г	5 UPL		Euonymus obovata	RUNNING STRAWBERRY BUSH
	D				CHENOP	CHEALBU	*	Г	1 FAC-		CHENOPODIUM ALBUM	LAMB'S QUARTERS;"PIGWEED"
	E(ToS)				COMPOS	AMBARTE	0	Г	3 FACU	N Forb	Ambrosia artemisiifolia	COMMON RAGWEED
	B,D,G				COMPOS	ARCMINU	*	_			ARCTIUM MINUS	COMMON BURDOCK
	ZR				COMPOS	ASTLANC	3	_		N Forb	Aster lanceolatus	EASTERN LINED ASTER
	B,E(ToS),G				COMPOS	ASTLATE	3	_			Aster lateriflorus	SIDE-FLOWERING ASTER
	B,D				COMPOS	ASTNOVA	2	_			Aster novae-angliae (Virgulus n.)	NEW ENGLAND ASTER
	B,G				COMPOS	ASTUROP	6	_			Aster urophyllus (A. sagittifolius)	ARROW-LEAVED ASTER
	B,E(ToS)				COMPOS	BELPERE	*	_			BELLIS PERENNIS	ENGLISH DAISY
	E				COMPOS	BIDFRON	3				Bidens frondosa	COMMON BEGGAR-TICKS
	ZR				COMPOS	BIDVULG	5				Bidens vulgata	TALL BEGGAR-TICKS
	B,D,E(ToS)		R1	R2	COMPOS	CIRDISC	9	_			Cirsium discolor	PASTURE-THISTLE
	B,E,E(ToS),G		1		COMPOS	ERIANNU	0				Erigeron annuus	ANNUAL FLEABANE
	A,B,C,D,E,G				COMPOS	SOLALTI	1		_		Solidago altissima	TALL GOLDENROD
	B,G				COMPOS	SOLCANA	1				Solidago canadensis	CANADA GOLDENROD
	ZR	S1	Rh		COMPOS	SOLULMI	9	_			Solidago ulmifolia	ELM-LEAVED GOLDENROD
	A,B,C,D,E,E(ToS),F,G		1		COMPOS	TAROFFI	*				TARAXACUM OFFICINALE	COMMON DANDELION
	Α				COMPOS	TUSFARF	*	_	_	A Forb	TUSSILAGO FARFARA	COLTSFOOT
	G				CORNAC	CORALTE	6	_		N Tree	Cornus alternifolia	ALTERNATE-LEAVED DOGWOOD
	B,C,D,G				CORNAC	CORFOEM	1 2	_			Cornus foemina (C. racemosa)	GRAY DOGWOOD
	C,D, E(ToS)				CRUCIF	ALLPETI	*	_			ALLIARIA PETIOLATA (A. OFFICIN	
	Δ				CRUCIF	ERYCHEI	*	_			ERYSIMUM CHEIRANTHOIDES	WORMSEED MUSTARD
	B,D,G				CRUCIF	HESMATR	*	_			HESPERIS MATRONALIS	DAME'S ROCKET
	,,_ E				CUPRES	JUNHORI	10	_			Juniperus horizontalis	CREEPING JUNIPER
	D				CUPRES	JUNVIRG	<u> </u>	_	_		Juniperus virginiana	EASTERN RED-CEDAR
	<u> </u>				CYPERA	CARALBU	7	_			Carex albursina	WHITE BEAR SEDGE
	E,E(ToS),G				CYPERA	CARGRAC	1	_			Carex gracillima	GRACEFUL SEDGE
	F				CYPERA	CARGRAN	3				Carex granularis	MEADOW SEDGE
	<u>-</u> E				CYPERA	CARPENS	5	_	_		Carex grandians Carex pensylvanica	PENNSYLVANIA SEDGE
	E(ToS)		1	vu	CYPERA	CARPLAT	1 7	_			Carex pensylvanica	BROAD-LEAVED SEDGE
	ZR-L			1	CYPERA	CARSPAR	' 5	_			Carex sparganioides	BURREED SEDGE
	B B	<u> </u>	<u> </u>	 	CYPERA	CARVULP	3	_	_		Carex vulpinoidea	FOX SEDGE
	<u> </u>	I .	1		OTPERA	OAKVULF	J	ι.	-JOBL	in Seuge	Joanex varpinolaea	II OV SEDGE

	D C	т —		<u> </u>	CYPERA	SCICYPE	1	E	OBL	N Codeo	Cairmus aymarinus	WOOL-GRASS;BULRUSH
	B,E B	64				DIPSYLV	*	_	UPL		Scirpus cyperinus DIPSACUS SYLVESTRIS	COMMON TEASEL
		S1			DIPSAC	QUEALBA			FACU	A Forb		THE PART OF THE PA
	E,G	64			FAGACE		6			N Tree	Quercus alba	WHITE OAK
	B,E,E(ToS), G	S1			FAGACE	QUEMACR	*		FAC-	N Tree	Quercus macrocarpa	BUR OAK
	ZR	-			GRAMIN	AGRGIGA	<u> </u>	_	FAC		AGROSTIS GIGANTEA	REDTOP
	B,G	-			GRAMIN	DACGLOM		_	FACU		DACTYLIS GLOMERATA	ORCHARD GRASS
	D	S3			GRAMIN	DANSPIC	5		UPL		Danthonia spicata	POVERTY GRASS;OATGRASS
	B	S3			GRAMIN	ELYREPE	_	_	FACU		ELYMUS REPENS (AGROPYRON R	
	B,C,D,E(ToS)				GRAMIN	ELYVIRG	5		FACW-		Elymus virginicus	VIRGINIA WILD-RYE
	E				GRAMIN	GLYSTRI	3		OBL		Glyceria striata	FOWL MANNA GRASS
	D,E(ToS)				GRAMIN	HYSPATU	5	_	UPL		Hystrix patula (Elymus hystrix)	BOTTLEBRUSH GRASS
	D				GRAMIN	POACOMP	0	_	FACU+	N Grass	Poa compressa	CANADA BLUEGRASS
	B,C,G				GRAMIN	POAPRAT	0		FAC-	N Grass	Poa pratensis	KENTUCKY BLUEGRASS
	E(ToS)				GUTTIF	HYPPERF	*		UPL	A Forb	HYPERICUM PERFORATUM	COMMON ST. JOHN'S-WORT
	E				IRIDAC	SISALBI	9	_	FACU	N Forb	Sisyrinchium albidum	COMMON BLUE-EYED-GRASS
	D	S3			JUGLAN	CARCORD	6		FAC	N Tree	Carya cordiformis	BITTERNUT HICKORY
	D, E(ToS),G			Rh	JUGLAN	CAROVAT	6		FACU	N Tree	Carya ovata	SHELLBARK or SHAGBARK HICKORY
	A,B,C,D,E,G	S3?			JUGLAN	JUGNIGR	5	_	FACU	N Tree	Juglans nigra	BLACK WALNUT
	D	S3			JUNCAC	JUNTENU	0	_	FAC	N Forb	Juncus tenuis	ROADSIDE RUSH;PATH RUSH
	В				LABIAT	CLIVULG	4		UPL	N Forb	Clinopodium vulgare	WILD BASIL
	E(ToS)				LABIAT	COLCANA	8	0	FAC	N Forb	Collinsonia canadensis	RICHWEED
	В				LABIAT	LEOCARD	*		UPL	A Forb	LEONURUS CARDIACA	MOTHERWORT
	B,C,E(ToS)	S3		VU	LABIAT	MONFIST	6	3	FACU	N Forb	Monarda fistulosa	WILD BERGAMOT
	E,E(ToS)		R2	R5	LABIAT	PRUVULGLAN	5	5	UPL	N Forb	Prunella vulgaris ssp. lanceolata	HEAL-ALL
	ZR	S1			LABIAT	TEUCANACAN	6	-2	FACW-	N Forb	Teucrium canadense ssp. canaden	WOOD SAGE
	В				LEGUMI	MEDLUPU	*	1	FAC-	A Forb	MEDICAGO LUPULINA	BLACK MEDICK
	D				LEGUMI	MELALBA	*	3	FACU	A Forb	MELILOTUS ALBA	WHITE SWEET-CLOVER
	D				LEGUMI	TRIPRAT	*	2	FACU+	A Forb	TRIFOLIUM PRATENSE	RED CLOVER
	D	S1?	R1		LILIAC	ALLCANA	8	3	FACU	N Forb	Allium canadense	WILD GARLIC
	E(ToS)				LILIAC	ALLTRIC	7	2	FACU+	N Forb	Allium tricoccum	WILD LEEK;RAMPS
	A,G				LILIAC	ASPOFFI	*	3	FACU	A Forb	ASPARAGUS OFFICINALIS	ASPARAGUS
	B,E				LILIAC	MAISTEL	6	1	FAC-	N Forb	Maianthemum stellatum (Smilacina	STARRY FALSE SOLOMON-SEAL
	A,B,D,E,G	S3	R2		OLEACE	FRAAMER	4	3	FACU	N Tree	Fraxinus americana	WHITE ASH
	A,B,C,D,E,E(ToS),F,G				OLEACE	LIGVULG	*	_	FAC-	A Shrub	LIGUSTRUM VULGARE	COMMON PRIVET
	A,B				OLEACE	SYRVULG	*	_	UPL		SYRINGA VULGARIS	COMMON LILAC
	B,E,G				ONAGRA	CIRLUTE	3				Circaea lutetiana (C. quadrisulcata	
	ZR		VU		ORCHID	EPIHELL	*	_	UPL	A Forb	EPIPACTIS HELLEBORINE	HELLEBORINE
	E,E(ToS)		1.0		OXALID	OXASTRI	0	_	FACU	N Forb	Oxalis stricta (O. fontana in part, O	
	G				PAPAVE	SANCANA	5	_		N Forb	Sanguinaria canadensis	BLOODROOT
	ZR	 			PLANTA	PLAARIS	*	_	UPL	A Forb	PLANTAGO ARISTATA	BRACTED PLANTAIN; BUCKTHORN
	E(ToS)	 			PLANTA	PLAMAJO	*	-	FAC+	A Forb	PLANTAGO MAJOR	COMMON PLANTAIN
	ZR-L	 			POLYGO	POLPERS	*	_	FACW	A Forb	POLYGONUM PERSICARIA	LADY'S THUMB;HEART'S-EASE
	E(ToS)	S2	R1		POLYGO	POLVIRM	6	_	FAC	N Forb	Polygonum virginianum (Tovara v.	
	В				POLYGO	RUMCRIS	*	-	FAC+	A Forb	RUMEX CRISPUS	SOUR or CURLY DOCK
	E,E(ToS)	 	 ``		PRIMUL	LYSCILI	4	-		N Forb	Lysimachia ciliata	FRINGED LOOSESTRIFE
	В	 			PRIMUL	LYSNUMM	*	_		A Forb	LYSIMACHIA NUMMULARIA	MONEYWORT
	A,B,C,D,E,E(ToS),F,G	+			RANUNC	ANEVIRG	4	_	UPL	N Forb	Anemone virginiana	THIMBLEWEED
	E(ToS)	+			RANUNC	RANRECU	4	-		N Forb	Ranunculus recurvatus	HOOKED CROWFOOT
	A,C,D	 			RHAMNA	RHACATH	*	_	FACU	A Tree	RHAMNUS CATHARTICA	COMMON BUCKTHORN
<u> </u>	B,E,E(ToS),G	 			ROSACE	AGRGRYP		_	FACU+	N Forb		TALL AGRIMONY
		62	D2				4	-			Agrimonia gryposepala	
	ZR-L	S2	R3	R3	ROSACE	CRACALP	4	<u> </u>	UPL	N Tree	Crataegus calpodendron	HAWTHORN

A,B,D	S2S3	R1		ROSACE	CRACRUS	4	OF	FAC	N Tree	Crataegus crus-galli	COCKSPUR THORN
ZR-L		R3	R1	ROSACE	CRAMACR	4		UPL	N Tree	Crataegus macracantha	HAWTHORN
A,B,C,D,G				ROSACE	CRAPUNC	4		UPL	N Tree		DOTTED HAWTHORN
ZR-L	S1	R5	R4	ROSACE	CRASUCC	4	5 L	UPL	N Tree		HAWTHORN
E,E(ToS)				ROSACE	FRAVIRG	2	1 F	FAC-	N Forb	Fragaria virginiana	WILD STRAWBERRY
D				ROSACE	GEUALEP	2	-1 F	FAC+	N Forb	Geum aleppicum	YELLOW AVENS
A,B,E(ToS),G				ROSACE	GEUCANA	3	0 F	FAC	N Forb	Geum canadense	WHITE AVENS
D	S3		R3	ROSACE	POTRECT	*	5 L	UPL	A Forb	POTENTILLA RECTA	ROUGH-FRUITED CINQUEFOIL
B,D				ROSACE	PRUSERO	3	3 F	FACU	N Tree	Prunus serotina	WILD BLACK CHERRY
A,G				ROSACE	PRUVIRG	2	1 F	FAC-	N Shrub	Prunus virginiana	CHOKE CHERRY
B,D,E				ROSACE	ROSMULT	*	3 F	FACU	A Shrub	ROSA MULTIFLORA	JAPANESE or MULTIFLORA ROSE
В				ROSACE	ROSRUBI	*	5 l	UPL	A Shrub	ROSA RUBINGOSA (R. EGLANTERI	SWEET BRIER
A,C,E(ToS),G				ROSACE	RUBOCCI	2	5 L	UPL	N Shrub	Rubus occidentalis	BLACK RASPBERRY
E(ToS),G	S2?	R1		RUBIAC	GALCIRC	7	4 F	FACU-	N Forb	Galium circaezans	WHITE WILD LICORICE
F		R2		RUBIAC	GALTRIF	5	-4 F	FACW+	N Forb	Galium trifidum	SMALL BEDSTRAW
B,D		R4		RUBIAC	GALTRIL	4	2 F	FACU+	N Forb	Galium triflorum	FRAGRANT BEDSTRAW
E(ToS)				SALICA	POPTREM	2	0 F	FAC	N Tree	Populus tremuloides	QUAKING ASPEN
E(ToS)				SMILAX	SMIHISP	6	0 F	FAC	N Vine	Smilax hispida (S. tamnoides)	BRISTLY GREEN-BRIER
B,D,G				TILIAC	TILAMER	4	3 F	FACU	N Tree	Tilia americana	LINDEN;BASSWOOD
E(ToS),G	S2	R1		ULMACE	ULMAMER	3	-2 F	FACW-	N Tree	Ulmus americana	WHITE or AMERICAN ELM
D				ULMACE	ULMPUMI	*	5 l	UPL	A Tree	ULMUS PUMILA	SIBERIAN ELM
E				ULMACE	ULMRUBR	6	0 F	FAC	N Tree	Ulmus rubra	RED or SLIPPERY ELM
B,E(ToS)				UMBELL	DAUCARO	*	5 l	UPL	A Forb	DAUCUS CAROTA	WILD CARROT; QUEEN-ANNE'S-LACE
B,E(ToS),G		R4		VERBEN	VERURTI	4		FAC+	N Forb	Verbena urticifolia	WHITE VERVAIN
E(ToS)				VIOLAC	VIOLANC	9	-5 0	OBL	N Forb	Viola lanceolata	LANCE-LEAVED VIOLET
D,E				VIOLAC	VIOSORO	4	1 1	FAC-	N Forb	Viola sororia	COMMON BLUE VIOLET
A,G				VITACE	PARQUIN	6	1 F	FAC-	N Vine	Parthenocissus quinquefolia	VIRGINIA CREEPER
A,B,C,E(ToS),G	S1	R3		VITACE	VITRIPA	0	-2 F	FACW-	N Vine	Vitis riparia	RIVERBANK GRAPE

TAB C

DHP Talbotville Faunal Report



DHP Talbotville

Faunal Report

Prepared for: Leonard +Associates in Landscape Architecture

Prepared by: Dave Martin Consulting Biologist July 17, 2012

DHP Talbotville Faunal Report

Coverage

This site was surveyed four times. The November 8, 2011, visit was primarily a habitat reconnaissance survey to determine what level of surveying might be needed. The prime goal of the other three surveys was to look for the presence / absence of Significant Wildlife Habitat in the proposed development footprint and in the buffer zone around the development footprint. As well, all birds, reptiles, amphibians, mammals, odonata and butterflies encountered were recorded.

Table 1.0 Survey effort

Date	Time	Field Hours	Observers	Weather
November 8, 2011	1330 - 1600	2.5	DM	Temp: + 18 C
				Wind: W10
				Cloud cover: light cirrus
April 12, 2012	0930 - 1145	4.5	DM	Temp: +9 C
			LW	Wind: NW8
				Cloud cover: 30%
May 15, 2012	0800 to 1030	5.0	DM	Temp: + 17 C
			LW	Wind: calm
				Cloud cover: clear
June 7, 2012	0800 to 0900	2.0	DM	Temp: +14 C
			LW	Wind: NW8
				Cloud cover: 50%

DM = Dave Martin, LW = Linda Wladarski

The findings are organized and discussed using the key attributes and functions that are delineated in the Natural Heritage Reference Manual, the Significant Wildlife Habitat Technical Guide and the January 2009 Draft Addendum to the SWH Technical Guide: Ecoregion Criteria Schedules for Region 7E.

Provincial Regulations

[The following regulations are from the Natural Heritage Reference Manual Appendix A: Natural Heritage Features and Areas]

1.0 Evaluation of Significant Woodlands

1.1 Do linkages exist to other natural heritage features or areas, waterbodies, other woodlands?

Yes, the wooded slope on the south side of the tableland is connected to a wooded slope to the east and to the narrow buffer of Dodd Creek to the west and the large woodland to the northwest.

1.2 Is the woodland close to other woodlands? What is the rough distance?

The woodland is connected to a large wooded area to the northwest.

1.3 Does the woodland provide forest interior habitat?

No, the woodland on the subject lands is comprised of a narrow band on the south-facing slope, a narrow band on the tableland and a short, narrow ravine that orients north-south at the east side of the property.

1.4 Does the woodland provide corridors for wildlife movement between habitats?

Yes, the wooded areas on the subject lands are connected to wooded areas to the east, southeast, west and northwest.

2.0 Evaluation of Significant Valleylands

2.1 Has there been habitat disturbance in the Valleyland?

Yes, the valleyland is planted in row crops and appears to have been so for a long time.

2.2 Does the Valleyland function as a corridor for wildlife movement between natural heritage features?

No.

3.0 Evaluation of Seasonal Concentration Areas (Significant Wildlife Habitat)

[This criterion relates to Sections 4.4 & 8.3 of the Significant Wildlife Habitat Technical Guide, OMNR 2000.]

Do the subject lands contain:

Winter deer yards

The winter deer yard function does not likely apply to southern Ontario given the mild winters, general lack of snow cover and readily available supply of corn next to even the smallest of natural areas. It is not likely that significant numbers of deer overwinter in the narrow slope forests found on the subject lands. A few deer tracks were observed on all visits to the site.

Moose late winter habitat

Not applicable, moose are not present in southern Ontario.

Colonial bird nesting sites - terns, gulls, egrets, herons, swallows

There are no exposed soil banks for nesting Bank Swallows. There are no rock faces for nesting Cliff Swallows. There are no rocky islands or peninsulas for nesting gulls and terns. No occupied or unoccupied heron / egret stick nests were found on the subject lands.

Waterfowl stopover and staging areas

The only terrestrial area that waterfowl might stopover and stage in would be on the cropped floodplain lands but only in years when snow melt or flooding pooled on the cropped fields. As well, waterfowl would likely only stage in springs when corn had been planted the previous summer. There are no ponds, marshes, lakes, bays or coastal inlets that might attract migrants that stage in aquatic habitats.

Waterfowl nesting

Waterfowl likely do not nest in the study area because there are no large expanses of upland grasses and herbs that extend at least 120 metres from a wetland. There are no wetlands on the subject lands.

Shorebird migratory stopover areas

There are no shorelines of rivers, ponds, lakes or wetlands that would create seasonally flooded areas and the subsequent mudflats that attract migrant shorebirds.

Landbird migratory stopover areas

This site is greater than 5 km from the Lake Erie shoreline and so would not be considered significant for migratory landbird migration.

Raptor winter feeding and roosting areas

This site does not have a combination of grassy fields or lightly grazed pasture and woodlands that might attract winter raptors.

Wild Turkey winter range

Like winter deer yards, this concept hardly applies in southern Ontario since Wild Turkeys have become so common that they are found in almost every woodlot at one time or another.

Turkey Vulture summer roosting areas

No excrement or feathers were found on the breeding season surveys. No vultures were flushed from the wooded portions of the subject lands.

Reptile hibernacula

One Eastern Gartersnake was observed on the May 15 survey. Woodchucks and Eastern Chipmunks were recorded on the subject lands. Snakes use the burrows of both species to access underground hibernacula.

Bat hibernacula

There are no caves, abandoned mine shafts or underground foundations that might provide hibernacula. There are some large deciduous trees to the south and west of the subject lands that appear to be large enough to function as maternal roosts during the breeding season.

Bullfrog concentration areas

There are no wetlands in the study area other than the creek to the west and south of the study area. Bullfrogs require a mix of ponds and lakes with large areas of open water combined with patches of cattails around the edges.

Migratory butterfly stopover areas

This site is greater than 5 km from the Lake Erie shoreline and so would not be considered significant for migratory butterfly migration. As well, there are no large fields in or near the study area that are at the goldenrod /

aster stage of succession: that is, the successional stage that attracts large numbers of migrant butterflies.

4.0 Evaluation of Specialized Wildlife Habitats

[This criterion relates to Sections 5.4.2 & 8.5 of the Significant Wildlife Habitat Technical Guide, OMNR 2000.]

Do the subject lands contain:

Hunting areas for raptors

The property does not include large expanses of grassland that would attract species such as American Kestrel, Northern Harrier and Red-tailed Hawk. Cooper's Hawks have become common in urban and rural residential areas. This species "trap line" hunts from yard to yard, keying in on birdfeeders and birds nesting in urban and rural yards. As such the habitat on site is suitable although no Cooper's Hawks were observed.

Osprey nesting habitat

No Osprey or Osprey nests were observed.

Nesting areas for waterfowl/ grassland birds

There are no grassed uplands adjacent to wetlands where Canada Geese, Mallard or other waterfowl might nest. The trees on the subject lands are not large enough to have large cavities for nesting Wood Ducks or Hooded Mergansers. There is no grassland for grassland nesting species such as Savannah Sparrow, Bobolink or Eastern Meadowlark in or near the study area.

Foraging areas for shorebirds

There is no shorebird habitat in or near the study area.

Food sources for rare butterfly species

At the bottom of the south facing wooded slope there is a narrow band [~1 to 5 metres wide] of grasses and herbs between the woodland and the cropped agricultural lands. Most of the butterflies recorded on the surveys were found in this narrow strip. Only a few scattered Milkweed plants, the obligate food plant for the Monarch (SC in Canada and Ontario), were found on the surveys. Single Monarchs were observed on the May 15 and June 7 surveys in this habitat. These dates are within the migration period of the Monarch. Neither Hackberry, the obligate food plant of the Hackberry Emperor (S2) or Tawny Emperor (S2S3) nor Northern Prickly-Ash, the obligate food plant for Giant Swallowtail (S2), was observed.

Mink, otter, marten, and fisher denning sites

Only the mink is present in southern Ontario. Mink prefer to den on the banks of creeks or among anthropogenic features such as armor stone protecting creek banks. One Mink was observed on the May 15 visit in a large woodpile that had collected beside the creek on the west side of the study area after the spring flood.

Regionally high diversity of animal species or animal communities

The study area does not have a particularly high diversity of animal species or communities. All of the species found around are common and widespread in southwestern Ontario.

Forests with high diversity of habitats

There is not a large diversity of habitats in the study area. The site is lacking in communities such as wetlands, grassland, dry upland shrubby fields, conifer patches and mature woodland with forest interior.

Habitat for area-sensitive animal species

Although the study area does not have extensive woodland one Area-Sensitive bird [Scarlet Tanager] was found in the floodplain forest at the west side of the study area near the creek. There is extensive woodland to the northwest of this area which explains the presence of this species.

High density of wildlife trees

The trees in the study area are primarily mid-successional so are too small to have extensive cavities and woodpecker holes. No woodpeckers, other than the smallest species – Downy Woodpecker – were found in the wooded south-facing slopes. On the wooded floodplain to the west of the subject lands, Hairy Woodpecker and Red-bellied Woodpecker were present.

Amphibian woodland breeding ponds

There are no permanent or vernal ponds in the study area. No frogs or toads were encountered on any of the surveys. The only amphibian encountered was the terrestrial Eastern Red-backed Salamander which was found on the south-facing and west-facing slopes and in the wooded area on the tablelands. This species does not lay its eggs in water: it lays its eggs in or under objects such as large pieces of bark and logs.

Turtle nesting habitat

There are no permanent ponds in or near the study area so turtles are not present other than the possible occasional random individual.

5.0 Evaluation of Species of Concern and their Habitats

[This criterion relates to Sections 6.3 & 8.6 of the Significant Wildlife Habitat Technical Guide, OMNR 2000.].

Do the subject lands contain:

Habitat of rare or declining species

The only significant species recorded was the Monarch which is listed as Special Concern in Canada and Ontario. Two individuals were recorded, one on May 15 and one on June 7. These dates are both within the migratory period of this species. The obligate food plant of the caterpillar was not common on the subject lands. Only a few individual plants were noted. Even if Monarchs bred on site, there would not be significant numbers produced.

Habitat of species with a large percentage of their global range in Ontario

As part of the North American Bird Conservation Initiative, Partners in Flight [PIF] Ontario is developing Conservation Plans for Ontario's four Bird Conservation Regions [BCRs]. Middlesex County lies in BCR 13, which roughly corresponds to the part of Ontario south of the Canadian Shield. Species are assigned a priority level of Continental or Regional Concern based on declining numbers at a continental or regional level. As well, a management target level of Continental or Regional Stewardship is given for species in regions where their numbers are still relatively high. The goal is that municipalities will manage for habitat for the priority species in their region at a landscape level. This scheme replaces the Conservation Priority Species scheme that was used from the mid-1990s until recently.

Six PIF priority species for BCR 13 were considered to be breeding on site. The following chart lists the species, their PIF status, the number of individuals present, the species guild to which they are categorized and the habitat / sector of the study area in which they were breeding. Three species are woodland / woodland edge species and the other three species are shrub /successional species.

Table 2.0 Partners in Flight Priority Species

Species	PIF status	# individuals	Guild	Breeding habitat in the study area
Eastern Wood-Pewee	Regional Concern	2	Forest	South slope woods
Rose-breasted Grosbeak	Regional Stewardship	2	Forest	South slope woods
Baltimore Oriole	Regional Concern Regional Stewardship	2	Forest	South slope woods
Willow Flycatcher	Continental Concern	1	Shrub / successional	South slope scrub
Eastern Towhee	Regional Concern	1	Shrub / successional	South slope scrub
Field Sparrow	Regional Concern	3	Shrub / successional	South slope scrub Tableland scrub

6.0 Evaluation of Wildlife Movement Corridors

[This criterion relates to Sections 7.3 & 8.7 of the Significant Wildlife Habitat Technical Guide, OMNR 2000.]

Regional

Does the corridor connect seasonal concentration areas to other critical parts of their habitat? No. No seasonal concentration habitat was found in the study area.

Does the corridor link the most significant and similar natural heritage features and areas within the planning area?

The natural cover [mostly woodland] on the subject lands is part of a long stretch of natural cover along Dodd Creek extending a couple of km to the north and several km to the south where Dodd Creek empties into Kettle Creek. There is a narrow band of trees and shrubs along both sides of Dodd Creek and the steep slopes of the glacial valley are wooded upstream and downstream from the subject lands.

Are there a number of natural areas or significant wildlife habitats connected by the corridor?

The woodland on the south-facing slope connects woodland upstream and downstream from the subject lands.

Are there gaps in the corridor greater than 20 m? No.

Is the amount of natural cover / habitat structure: High, Medium, Low

The natural cover on the subject lands is low. It is restricted to the south-facing slope, a small patch of woodland on the tableland adjacent to the south-facing slope and on the slopes of the north-south ravine at the east side of the property. Otherwise, the subject lands are comprised of row-crop

agricultural lands. There is very little habitat diversity in the natural cover. Habitat ranges from shrubby at the east end of the south-facing slope to young woodland at the west end of the south-facing slope, on the tableland and in the east ravine.

Local

What are the animal species typically associated with corridors of this width or length? There are no species that are specifically associated with this corridor. All of the species recorded are common and widespread in southwestern Ontario.

Are there one or more wildlife corridors between significant habitats on the subject lands? None of the habitats found in the study area are significant.

Are there barriers to wildlife movement?

No, there are no barriers to wildlife movement on the property.

FAUNAL SPECIES LISTS

This section provides detailed species lists including the number of individuals or territories, the dates seen; whether the species was considered to be breeding, a migrant or a visitor; the national, provincial and local status of each species; and additional comments about which part of the site a species was using, if relevant.

Interpretive notes for Tables

Breeders are species that are likely breeding on the site based on observed breeding evidence or suitable breeding habitat.

Migrants are birds that have stopped over for a day or two on their way to or from their breeding grounds farther north.

Visitors likely breed in the area but not on site because no breeding evidence or suitable breeding habitat was noted. They visit the site to find food, roost, bathe or engage in some other life-cycle behavior.

S Ranks indicate how common a species is in Ontario. S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure, S5 = Secure, SNA = Not of concern.

SCTE means Special Concern, Threatened or Endangered at a national or provincial level.

AS means Area Sensitive. Area Sensitive species are those that prefer larger patches of habitat suitable for that species.

Partners in Flight [PIF] priority species are those that are declining on a continental or regional scale and, yet at the same time, may still be relatively common in a given Bird Conservation Region. Municipalities should consider these at a landscape scale in their official plans with regard to protecting Natural Heritage. CC = of Continental Concern; RC = of Regional Concern; RS = candidate for Regional Stewardship; MI = of management interest

Species that have some level of significance \underline{and} that are likely breeding on site or immediately nearby are **bold-faced and highlighted** on the tables.

BIRDS

Forty-two species of birds were observed. Of these, 37 species were on-site breeders, 4 were visitors and 1 species was a spring migrant. All of the bird species recorded are common and widespread in southwestern Ontario and Elgin County.

Table 3.0 Birds

	Species	# of individuals	Use of site	S Rank	Other SCTE AS	PIF priority species	Community
01	Great Blue Heron	1 April 12 1 May 15	Visitor	S5	-	-	South slope
02	Turkey Vulture	1 Apr 12 1 June 7	Visitor	S5		-	Overhead
03	Red-tailed Hawk	1 May 15	Visitor	S5	-	-	Overhead
04	Wild Turkey	1 June 7	Breeder	S5	-	-	South slope
05	Mourning Dove	2 May 15	Breeder	S5	-	-	South slope East ravine
06	Great Horned Owl	1 April 12	Visitor	S5		-	West slope / floodplain
07	Red-bellied Woodpecker	1 June 7	Breeder	S4	-	-	South slope
08	Downy Woodpecker	2 April 12 1 May 15	Breeder	S5	-	-	South slope West slope / floodplain
09	Hairy Woodpecker	1 May 15	Breeder	S5	-	-	West slope / floodplain
10	Eastern Wood-Pewee	2 June 7	Breeder	S4	-	RC	South slope
11	Willow Flycatcher	1 June 7	Breeder	S5		CC	South slope
12	Eastern Phoebe	1 April 12	Breeder	S5	-	-	Tableland woods
13	Great Crested Flycatcher	1 May 15 2 June 7	Breeder	S4	-	-	West slope / floodplain South slope
14	Red-eyed Vireo	3 May 15 4 June 7	Breeder	S5	-	-	West slope / floodplain South slope
15	Blue Jay	1 June 7	Breeder	S5	-	-	South slope
16	American Crow	2 April 12 1 May 15 1 June 7	Breeder	S5	-	-	South slope
17	Tree Swallow	1 June 7	Breeder	S4	-	-	East ravine
18	Black-capped Chickadee	6 April 12 2 May 15 4 June 7	Breeder	S5	-	-	South slope West slope / floodplain
19	White-breasted Nuthatch	3 May 15 1 June 7	Breeder	S5	-	-	South slope West slope / floodplain

20	House Wren	4 May 15 3 June 7	Breeder	S5	-	-	South slope East ravine
	Species	# of individuals	Use of site	S Rank	Other SCTE AS	PIF priority species	Community
21	Blue-gray Gnatcatcher	2 May 15	Breeder	S4	-	-	West slope / floodplain East ravine
22	Eastern Bluebird	1 April 12 1 June 7	Breeder	S5	-	-	West slope and floodplain South slope
23	American Robin	1 April 12 4 May 15 2 June 7	Breeder	S5	-	-	South slope West slope / floodplain
24	Gray Catbird	5 May 15 1 June 7	Breeder	S4	-	-	South slope West slope / floodplain Tableland East ravine
25	Cedar Waxwing	1 June 7	Breeder	S5	-	-	South slope
26	European Starling	1 May 15 4 June 7	Breeder	SNA	-	-	South slope
27	Yellow Warbler	4 May 15 3 June 7	Breeder	S5	-	-	South slope West slope / floodplain East ravine
28	Chestnut-sided Warbler	1 June 7	Breeder	S5	-	-	West slope / floodplain
29	Black-and-white Warbler	1 May 15	Spring migrant	S5	-	-	West slope / floodplain
30	Common Yellowthroat	2 May 15 4 June 7	Breeder	S5	-	-	South slope East ravine West slope / floodplain
31	Scarlet Tanager	1 May 15 1 June 7	Breeder	S4	AS	-	West slope / floodplain South slope
32	Eastern Towhee	1 May 15	Breeder	S4	-	RC	South slope
33	Field Sparrow	3 May 15 1 June 7	Breeder	S4	-,	RC	South slope South slope
34	Song Sparrow	2 April 12 7 May 15 4 June 7	Breeder	S5	-	-	West slope / floodplain South slope East ravine Tableland
35	Northern Cardinal	3 April 12 2 May 15 1 June 7	Breeder	S5	-	-	South slope East ravine
36	Rose-breasted Grosbeak	2 June 7	Breeder	S4		RS	South slope
37	Indigo Bunting	3 May 15 2 June 7	Breeder	S4	-	-	West slope / floodplain South slope East ravine
38	Common Grackle	1 May 15	Breeder	S5	-	-	West slope / floodplain

39	Brown-headed Cowbird	1 April 12 4 May 15 4 June 7	Breeder	S4	-	-	South slope West slope / floodplain
	Species	# of individuals	Use of site	S Rank	Other SCTE AS	PIF priority species	Community
40	Baltimore Oriole	2 June 7	Breeder	S4	-	RC RS	South slope
41	American Goldfinch	2 April 12 2 May 15 4 June 7	Breeder	S5	-		South slope East ravine
42	House Sparrow	1 May 15	Breeder	SNA	-	-	South slope

Notes & Sources: English names, checklist order, status and codes are from NHIC List of Ontario Birds (2009).

AMPHIBIANS

Only one species of amphibian was found: the Eastern Red-backed Salamander. Eight individuals were found under bark and logs on the south-facing and west-facing slopes and one individual were found under a piece of bark on the tableland. This species is common in Elgin County and is ranked as S5 in Ontario. No other amphibian species would breed on the subject lands given the absence of vernal or permanent ponds.

REPTILES

Only one species of reptile was found: the Eastern Gartersnake. One individual was found on the wooded floodplain to the west of the subject lands. This species is common in Elgin County and is ranked S5 in Ontario. No turtles would be present on the subject lands given the absence of a permanent pond for overwintering.

MAMMALS

Seven species of mammals were recorded. All are common and widespread in southwestern Ontario. The Mink is uncommon but widespread in Elgin County.

Table 4.0 Mammals

	Species	Evidence	# individuals	SCTE	SRank	Elgin status	Community
01	Eastern Chipmunk	Observed	1 May 15	-	S5	Common widespread	West slope / floodplain
02	Woodchuck	Den	1 June 7	-	S5	Common widespread	South slope
03	Eastern Gray Squirrel	Nest	April 12	-	S5	Abundant widespread	West slope / floodplain
04	Meadow Vole	Tunnels	April 12	-		Abundant widespread	South slope
05	Northern Raccoon	Observed	1 April 12	-	S5	Abundant widespread	South slope West slope / floodplain

06	American	Observed	1 May 15	-	S4	Uncommon	West slope / floodplain
	Mink					widespread	
	Species	Evidence	# individuals	SCTE	SRank	Elgin status	Community
07	White-tailed Deer	Tracks Tracks Observed	April 12 May 15 1 June 7	-	S5	Abundant widespread	South slope West slope / floodplain Tableland East ravine

Notes & Sources: English names, checklist order, status and codes are from NHIC List of Ontario Mammals (2009). Elgin and Middlesex status is from Stewart (1982).

BUTTERFLIES

Twelve species of butterflies and skippers were observed in small numbers, primarily in the more open areas. There were no significant concentrations. All of the species recorded are uncommon to abundant in southwestern Ontario. The obligate food plants for some of the rare species are not present. Examples include Hackberry [tree] for Hackberry Emperor and Tawny Emperor and Northern Prickly-Ash for Giant Swallowtail.

Table 5.0 Butterflies

	Species	# individuals	SCTE	SRank	Elgin and Middlesex status	Community
01	Juvenal's Duskywing	3 May 15	-	S5	Uncommon	South slope
02	Least Skipper	1 June 7	-	S5	Common	South slope
03	Cabbage White	3 April 12 1 May 15 1 June 7	-	SNA	Common	South slope West slope / floodplain
04	Clouded Sulphur	1 May 15	-	S5	Abundant	South slope
05	Northern Crescent	4 May 15 4 June 7	-	S5	Abundant	South slope West slope / floodplain
06	Question Mark	3 May 15 1 June 7	-	S5	Common	West slope / floodplain East ravine
07	Mourning Cloak	1 April 12 1 May 15	-	S5	Common	South slope Tableland
08	Milbert's Tortoiseshell	1 June 7	-	S5	Uncommon	West slope / floodplain
09	American Lady	1 May 15	1-	S5	Uncommon	South slope
10	Red Admiral	3 May 15	-	S5	Common	South slope West slope / floodplain
11	Little Wood-Satyr	2 June 7	-	S5	Abundant	East ravine West slope / floodplain
12	Monarch	1 May 15 1 June 7	SC SC	S4	Common	South slope

Notes & Sources: English names, checklist order, status and codes are from the NHIC List of Ontario Lepidoptera

(2009).

Odonates [Dragonflies and Damselflies]

Two species of odonates were found: Common Whitetail and Ebony Jewelwing. Both were found in the floodplain forest to the west of the subject lands. Both are common and widespread in Elgin County and are ranked as S5 in Ontario.

References:

Cadman, M.D. D.A. Sutherland, G.G. Beck, D. LePage, and A.R. Couturier (eds.). 2007. **Atlas of the Breeding Birds of Ontario, 2001-2005.** Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto.

Carmichael, Ian and Ann Vance. 2003. **Photo Field Guide to the Butterflies of Southern Ontario.** St. Thomas Field Naturalist Club Incorporated. St. Thomas.

Carmichael, Ian, Alistair MacKenzie, Brad Steinberg. 2002. Photo Field Guide to the Dragonflies and Damselflies of Southwestern Ontario. The Friends of Pinery Park.

Dunkle, Sidney W. 2000. **Dragonflies Through Binoculars. A Field Guide to Dragonflies of North America.** Oxford University Press.

Dobbyn, Jon, 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills.

Glassberg, Jeffrey. 1993. Butterflies through Binoculars. Oxford University Press.

Harding, James H. 1997. **Amphibians and Reptiles of the Great Lakes Region.** The University of Michigan Press, Ann Arbor.

Harrison, Colin. 1978. A Field Guide to the Nests, Eggs and Nestlings of North American Birds. Collins.

Holmes, Anthony M., Quimby F. Hess, Ronald R. Tasker, Alan J. Hanks, 1991. **The Ontario Butterfly Atlas.** Toronto Entomologists Association, Toronto.

Kurta, Allen. 1995. Mammals of the Great Lakes Region. Fitzhenry & Whiteside, Toronto.

Layberry, Ross A., Peter W. Hall, J. Donald Lafontaine, 1998. **The Butterflies of Canada.** University of Toronto Press, Toronto.

Legler, Karl and Dorothy with Dave Westover. 2003. **Dragonflies of Wisconsin.** Edition 4.0. Amberwing Publishing.

Oldham, Michael J. *Amphibians and Reptiles of Elgin County, Ontario. Part 1: Amphibians*. The Cardinal No. 148, August 1992.

Oldham, Michael J. *Amphibians and Reptiles of Elgin County, Ontario. Part 2: Reptiles*. The Cardinal No. 149, November 1992.

OMNR January 2009. Working Draft. Significant Wildlife Habitat Ecoregion Criteria Schedules. Region 7E. Addendum to Significant Wildlife Habitat Technical Guide.

OMNR. 2000. Significant wildlife habitat technical guide.

Ontario Odonata Atlas. 2005. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. http://www.mnr.gov.on.ca/MNR/nhic/odonates/ohs.html (updated 15-02-2005).

Ontario Partners in Flight. 2005. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), *Priorities, Objectives and Recommended Actions*. Environment Canada / Ministry of Natural Resources Ontario.

Stewart, William G and Ian Carmichael. 1993. Dragonflies of Elgin County, Ontario. Self-published.

Stewart, William G. 1992. Butterflies of Elgin County, Ontario. Self-published.

Stewart, William G. 1982. Mammals of Elgin County. Self-published with St. Thomas Field Naturalists.