Council Meeting Minutes

Monday, March 22, 2021

Council Meeting

Electronic Online Participation

7:00 P.M.

Members Present: Mayor L. Armstrong, Councillors A. Hallman, C. Gordijk, B. Fisher, J. Gerber and J. Pfenning

Staff Present: Chief Administrative Officer G. Whittington, Director of Information and Legislative Services D. Mittelholtz, Director of Public Works J. Molenhuis, Director of Parks, Facilities and Recreation S. Jackson, Director of Development Services H. O'Krafka, Director of Corporate Services / Treasurer P. Kelly, Fire Chief R. Leeson, Director / Curator Castle Kilbride T. Loch, Manager of Information and Legislative Services / Deputy Clerk T. Murray, Manager of Planning / EDO A. Martin

1. MOTION TO CONVENE INTO CLOSED SESSION

Resolution No. 2021-46

Moved by: Councillor C. Gordijk Seconded by: Councillor A. Hallman

THAT a Closed Meeting of Council be held on Monday, March 22, 2021 at 6:15 p.m. in accordance with Section 239(2) of the Municipal Act, 2001, for the purposes of:

c) a proposed or pending acquisition or disposition of land by the municipality or local board;

CARRIED.

2. MOTION TO RECONVENE IN OPEN SESSION

Resolution No. 2021-47

Moved by: Councillor C. Gordijk Seconded by: Councillor A. Hallman

THAT Council reconvenes in Open Session at 7:00 p.m.

CARRIED.

3. MOMENT OF SILENCE

4. LAND ACKNOWLEDGEMENT

4.1 Councillor A. Hallman read the Land Acknowledgement.

5. ADDITIONS TO THE AGENDA

5.1 By-laws – Item 13.4 By-law No. 2021-19, Mornington Communications – Municipal Access Agreement

Resolution No. 2021-48

Moved by: Councillor J. Gerber Seconded by: Councillor C. Gordijk

THAT Item 13.4 be added to the agenda under BY-LAWS as By-law No. 2021-19 - By-Law To Authorize The Execution Of An Agreement With Mornington Communication.

CARRIED.

5.2 Announcements – Mayor L. Armstrong Anti-Racism, Inclusivity, and Diversity Education Update

Resolution No. 2021-49

Moved by: Councillor C. Gordijk Seconded by: Councillor B. Fisher

THAT Item 15.1 be added to the agenda under ANNOUNCEMENTS as Mayor L. Armstrong Anti-Racism, Inclusivity, and Diversity Education Update.

CARRIED.

6. DISCLOSURE OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT

6.1 Councillor J. Pfenning reiterated her Conflict of Interest for the Closed meeting that occurred prior to the Regular meeting.

6.4 Councillor C. Gordijk advised that although there are no decisions being made at this meeting relative to the Hallman Pit, she restated her conflict of interest and advised she would not be taking part in any conversations on the topic.

7. MINUTES OF PREVIOUS MEETINGS

7.1 Council Meetings Minutes Monday March 1, 2021

Resolution No. 2021-50

Moved by: Councillor J. Pfenning Seconded by: Councillor B. Fisher

THAT the minutes of the following meetings be adopted as presented:

Regular Council Meeting March 1, 2021.

CARRIED.

8. PUBLIC MEETINGS

8.4 REPORT DS 2021-009

Zone Change Application 03/21

2232372 Ontario Inc.

73 Hincks Street, New Hamburg

Resolution No. 2021-51

Moved by: Councillor C. Gordijk Seconded by: A. Hallman

THAT Council approve Zone Change Application 03/21 by 2232372 Ontario Inc. to permit, as a temporary use, a take-out only restaurant on the property, subject to the following:

1. That the temporary use by-law be limited to a period of 3 years
2. That a minimum of three off-street parking spaces between the building and James Street shall be designated for patrons of the take-out restaurant only.

CARRIED.

Mayor L. Armstrong declared the public meeting open and stated that Council would hear all interested parties who wished to speak. He indicated that if the decision of Council is appealed to the Local Planning Appeal Tribunal, the Tribunal has the power to dismiss an appeal if individuals do not speak at the public meeting or make written submissions before the by-law is passed.

Mayor L. Armstrong stated that persons attending as delegations at this meeting are required to leave their names and addresses which will become part of the public record and advised that this information may be posted on the Township's official website along with email addresses, if provided.

The Manager of Planning / EDO outlined the report.

Mayor L. Armstrong asked 3 times if anyone else wished to address Council on this matter. There were none and the public meeting was declared closed.

9. PRESENTATIONS/DELEGATIONS

The following persons appeared as delegations in relation to the proposed Hallman Pit. Prepared statements and / or presentations are attached as noted.

9.1 Mr. Russell Brownlee appeared as a delegation in relation to the Hallman Pit. Mr. Brownlee advised that he was retained by Citizens for Safe Groundwater to review road safety and the requirements of the transportation impact study provided by the Region of Waterloo. Mr. Brownlee advised the proponents had a safety impact study completed and that he is providing his findings of that review. He noted the report indicates capacity for additional traffic and impact on the road were acceptable; however, further safety measures were identified and specifically reviewed which Mr. Brownlee advised he is unaware that work has not been completed and no follow-up work has been provided to his clients.

9.2 Mr. Ed Dupej appeared as a delegation in relation to the Hallman Pit. Mr. Dupej commented on the road safety and geotechnical concerns he has, noting the need for reconstruction of roads. Mr. Dupej cited the number of trucks daily that would leave the site as approved by the Region and he noted that he questioned who would monitor this and was advised to contact the Ministry. He quoted traffic impact increases along Witmer Road as provided for in public documents. Mr. Dupej provided a document that suggests an alternate haul route as attached as Appendix A.

9.3 Mr. Rory Farnan, Citizens for Safe Ground Water, Appendix B.

9.4 Ms. Samantha Lernout, Appendix C.

9.5 Ms. Yvonne Zyma, appeared as a delegation in relation to the Hallman Pit. Ms. Zyma commented on her concerns for potential impacts on the natural environment. Ms. Zyma referenced the study area boundaries from the Dance Environmental Inc. document that outlines the site and environmental elements and the history of the site, noting it was mostly agricultural land. Ms. Zyma acknowledged the woodlands and the importance for animal protection. Ms. Zyma submitted documents are attached as Appendix D, Appendix D(1), Appendix D(2), Appendix D(3).

9.6 Ms. Linda Laepple, appeared as a delegation regarding the Hallman Pit. Ms. Laepple commented on her concerns for the potential impacts to the environment. Ms. Laepple noted the risks of economic changes are high. She provided an overview history of the property, noting the animal research history done on the site. Ms. Laepple noted the feedlot site was left to decay. She suggested that the geological study area be expanded and suggested consideration of an Interim By-law.

9.6 Ms. Paula Brown, appeared as a delegation regarding the Hallman Pit. Ms. Brown expressed her concerns for the residents of Shingletown and the potential impacts. Ms. Brown noted that the quality of life in the Township is important to all residents and advised that she drove Witmer Road and expressed her concerns for the increased truck traffic, poor site lines and increased safety concerns.

9.7 Mr. David Bricker appeared as a delegation regarding the Hallman Pit. Mr. Bricker expressed his opposition to the proposed pit due to the potential negative impacts on the environment and residents. He noted an agreement to not allow access on Witmer Road had been done and questioned why it has not been enforced. Mr. Bricker expressed his concern for the hours of operation and the effects on quality of life.

9.8 Ms. Stephanie Goertz, Appendix E.

9.9 Ms. Ruth Rosener, appeared as a delegation regarding the Hallman Pit. Ms. Rosner expressed her opposition to the proposed Hallman Pit due to the potential dangers of truck traffic and the environment and previously

presented concerns to Council. She spoke of the safety concerns to children, traffic, environment and the disturbance to the wildlife. She advised her main concern is the number of dump trucks that are proposed to travel along Witmer Road.

9.10 Ms. Martha Bricker, appeared as a delegation regarding the Hallman Pit. Ms. Bricker expressed her concerns for the proposal in relation to the environment. Ms. Bricker provided an overview of the area and showcased environmental features she has experienced on her daily walks, identifying wildlife and woodlot. Ms. Bricker provided several photos attached as Appendix F.

10. CONSENT AGENDA

10.1 DS 2021-010

Zone Change Application 04/21

Removal of H Symbol

Michelle Roth

Wilmot Street, New Hamburg

10.2 DS 2021-011

Lifting 1 foot reserve and open as Redford Drive

10.3 COR 2021-013

FCM Municipal Asset Management Program (MAMP)

Resolution No. 2021-52

Moved by: Councillor J. Pfenning Seconded by: Councillor C. Gordijk

THAT Report Nos. DS 2021-010, DS 2021-011 and COR 2021-013 Be approved.

CARRIED.

11. REPORTS

11.1 Chief Administrative Officer

11.1.1 REPORT NO. 2021-02

2020 – 2021 Work Program

Resolution No. 2021-53

Moved by: Councillor J. Pfenning Seconded by: Councillor B. Fisher

THAT the 2021 Work Program, as per the report dated March 22, 2021, submitted by the Chief Administrative Officer, be endorsed.

CARRIED.

The Chief Administrative Officer outlined the report.

Mr. Aaron Fewkes, President, The Community Players (TCP) appeared as a delegation. Mr. Fewkes asked that the Work Program be amended to include consultation with TCP regarding an Integrated Theatre Production Facility. Mr. Fewkes prepared statement is attached as Appendix G.

Council endorsed the recommended amendment to the Work Program and directed staff to make the necessary adjustments to the Work Program.

The Chief Administrative Officer noted that staff also support this amendment.

The Director of Public Works and Engineering clarified that the Region of Waterloo is considering options for lower tier municipalities to provide winter control.

The Director of Corporate Services / Treasurer confirmed that the grant funding application for consultation with the First Peoples Group has been submitted and has yet to be awarded.

The Chief Administrative Officer advised that he would follow-up with staff regarding Senior Management Team updates being reinstated.

The Director of Information and Legislative Services confirmed that the Cannabis Retail Policy will include community consultation and it will be moving forward during April, May and June.

The Director of Corporate Services confirmed that the Corporate Culture was deferred to the end of 2019 Novel Coronavirus pandemic at the request of the consultant.

The Director of Parks, Facilities and Recreation Services confirmed that the car pool parking will be added back into the Work Program; however, it will be a lower priority.

The Chief Administrative Officer and Director of Information and Legislative Services confirmed that the Crime Prevention Committee will be added to the Work Program.

11.2 INFORMATION AND LEGISLATIVE SERVICES

11.2.1 REPORT NO. ILS 2021-08

Award of Contract, Request for Proposal (RFP) 2021-01 Electronic Agenda and Meeting Management Solution

Resolution No. 2021-54

Moved by: Councillor A. Hallman Seconded by: Councillor C. Gordijk

THAT RFP 2021-01 be awarded to eSCRIBE, for the provision of electronic agenda, meeting management, and webcasting online modules and services, as per their proposal submitted on February 10, 2021, in the amount of $34,675, plus HST.

CARRIED.

The Director of Information and Legislative Services outlined the report and advised that eSCRIBE has an Return on Investment document available and will provide it to Council with a calculation for Wilmot specific savings estimates.

The Director of Information and Legislative Services confirmed there are ongoing costs associated with the annual subscription as noted in the report.

11.3 PUBLIC WORKS AND ENGINEERING

11.3.1 REPORT NO. PW 2021-04

Automated Speed Enforcement Program – Update and Endorsement of Additional Location

Resolution No. 2021-55

Moved by: Councillor B. Fisher Seconded by: Councillor J. Pfenning

THAT Report 2021-04 regarding the Automated Speed Enforcement Program – update and endorsement of additional locations be received for information;

AND THAT Snyder's Road West – Sir Adam Beck Public School be endorsed as the second program location within the Region of Waterloo Program.

CARRIED.

The Director of Public Works and Engineering outlined the report and confirmed that the enforcement and display will be present throughout the year. It was also confirmed that the numbering locations can be considered for endorsement at a future time.

11.3.2 REPORT NO. PW 2021-05

Annual Surface Treatment Program – Award of Contract

Resolution No. 2021-56

Moved by: Councillor C. Gordijk Seconded by: Councillor A. Hallman

THAT RFT 2021-05 be awarded to Cornell Construction Limited of Brantford, ON for the Annual Surface Treatment Program, as per their bid submission dated March 3, 2021, in the amount of $286,054.00, plus HST.

CARRIED.

The Director of Public Works and Engineering outlined the report.

11.3.3 REPORT NO. PW 2021-06

Mornington Communications – Municipal Access Agreement

Resolution No. 2021-57

Moved by: Councillor J. Pfenning Seconded by: Councillor A. Hallman

THAT Report 2021-06 be received for information;

AND THAT the Mayor and Clerk be authorized to enter into a Municipal Access Agreement (MAA) with Mornington Communications Co-operative Ltd.

CARRIED.

The Director of Public Works and Engineering outlined the report.

11.3.4 REPORT NO. PW 2021-07

Co-operative Contract - Pavement Markings

Resolution No. 2021-58

Moved by: Councillor C. Gordijk Seconded by: Councillor J. Pfenning

THAT Council approve participation in the co-operative tender with the Grand River Co-operative Purchasing Group (GRCPG) for supply and placement of Pavement Markings by Guild Electric Limited for a term of one (1) year, from April 1, 2021 to December 31, 2021.

CARRIED.

The Director of Public Works and Engineering outlined the report.

11.4 DEVELOPMENT SERVICES

11.4.1 REPORT DS 2021-007

Zone Change Application 07/20
Caiden-Keller Homes Inc. /
Dryden, Smith & Head Planning Consultants
Part of Lot 27-28, Plan 532A
18 Hincks Street, New Hamburg

Resolution No. 2021-59

Moved by: Councillor J. Pfenning Seconded by: Councillor C. Gordijk

THAT Council approve Zone Change Application 07/20 made by Caiden-Keller Homes Inc. / Dryden, Smith & Head Planning Consultants, affecting Part of Lots 27 and 28, Plan 53A, to:

1. To reduce the front yard setback and rear yard setback for the semi-detached dwelling from 7.6m and 7.5m to 4.5m and 4.77m respectively,
2. To reduce the lot area required for a lot containing a semi-detached dwelling from 560m2 to 517.81m$_2$,
3. To reduce the front and left side yard setback for a two storey single detached dwelling from 7.6m and 2.0m to 6.0m and 1.2m respectively,

4. To reduce the lot area for a single detached dwelling from 500m^2 to 428.85m^2, and
5. To reduce the lot frontage and width for a single detached dwelling from 12m and 15m to 11.26m.

CARRIED.

The Manager of Planning / EDO outlined the report.

The following persons appeared as delegations in relation to the Zone Change Application. Prepared statements and / or presentations are attached as noted.

Ms. Ceri Nelmes, Appendix H.

Mr. Craig Nichols and Ms. Cindy Moser appeared as delegations and expressed their concerns for the Zone Change Application in relation to their privacy and property. Mr. Nichols alleged potential issues with the developer in working with the neighbours in a positive manner.

Mr. Sam Head, Dryden Smith and Head, appeared as a delegation and noted that he had been working with Township staff to address the issues raised by the community and following Provincial policy and minor variances.

Mr. Dan Fleischmann appeared as a delegation and expressed his concern for the Zone Change Application. Mr. Fleischmann expressed his concerns for neighbours feeling being pushed out due to the application. He noted that he feels it would be reasonable for a semi-detached development but feels what is being proposed is not acceptable.

The Manager of Planning / EDO confirmed that the proposed development will be further from the property line than the existing home.

Resolution No. 2021-60

Moved by: Councillor J. Pfenning **Seconded by: Councillor J. Gerber**

THAT the Council meeting proceed past 11:00 p.m.

CARRIED.

11.4.2 REPORT NO. DS 2021-012

Street Names

Wilmot Employment Lands

Resolution No. 2021-61

Moved by: Councillor A. Hallman Seconded by: Councillor J. Gerber

THAT Council endorse the use of the following street names for the Wilmot Employment Lands:

Street One – Howie Meeker Boulevard
Street Two – Vernon Erb Drive
Street Three – Hahn Brass Way
Street Four – Kay Hall Place

CARRIED.

The Director of Development Services outlined the report.

12. CORRESPONDENCE

12.1 Integrity Commissioner Report Nos. IC-2020-03, IC-2020-04 and IC-2021-01

12.2 Integrity Commissioner Annual Report 2020

Resolution No. 2021-62

Moved by: Councillor J. Gerber Seconded by: Councillor B. Fisher

That Correspondence Item Nos. 12.1 and 12.2 be received for information.

CARRIED.

13. BY-LAWS

13.1 By-law No. 2021-15 ZCA 07/20 – 18 Hincks St

13.2 By-law No. 2021-16 ZCA 03/21 – 73 Hincks St

13.3 By-law No. 2021-17 ZCA 04/21 – Wilmot St

13.4 By-law No. 2021-19 Mornington Communications – Municipal Access Agreement

Resolution No. 2021-63

Moved by Councillor C. Gordijk Seconded by: Councillor A. Hallman

THAT By-law Nos. 2021-15, 2021-16, 2021-17 and 2021-19 be introduced, read a first, second and third time and finally passed in Open Council.

14. NOTICE OF MOTIONS

15. ANNOUNCEMENTS

15.1 Mayor L. Armstrong advised that his update is included in the Agenda for information. Councillor A. Hallman later inquired on what Mayor L. Armstrong has learned and he advised that, as he had noted before, there is a long way to go to understanding and acceptance. He acknowledged that everyone deserves to be treated equally.

15.2 Councillor C. Gordijk noted the Anti-Asian hate crimes are on the rise and acknowledged the incidents in the United States and the International Elimination of Racial Discrimination Day.

15.3 Councillor C. Gordijk noted the fundraising for the Terry Fox Run is beginning and there will be special Terry Fox cupcakes available and on April 12, Twice the Deal Pizza will be donating a portion of sales.

15.4 Councillor C. Gordijk noted the Wilmot Rod and Gun Club is having a Fish and Chip take-out dinner on Good Friday, April 2.

15.5 Councillor J. Pfenning acknowledged the numerous recognition days and acknowledged Down Syndrome Awareness Day and Elimination of Racial Discrimination and World Water Day.

15.6 Councillor A. Hallman noted that Castle Kilbride is accepting bookings for their opening on April 1.

15.7 Councillor A. Hallman noted that March 31 is the International Transgender Day of Visibility to raise awareness.

15.8 Councillor A. Hallman also acknowledged the mass shooting in Atlanta and encouraged support for those affected by the shooting.

16. BUSINESS ARISING FROM CLOSED SESSION

Resolution No. 2021-64

Moved by Councillor B. Fisher **Seconded by: C. Gordijk**

THAT Confidential Report DS 2021-008 be received for information;

THAT Council accept the generous donation of lands from the Cachet Developments (NH) Inc. and Cachet Developments (NH West) Inc. with the costs of surveying, preparing and registering being borne by the proponents; and,

THAT if requested, the Township provide a tax receipt in the amount determined by an independent certified appraisal of the value of the lands donated by Cachet Developments. The cost of the independent certified appraisal, and any review by the Township solicitor, would be borne by the Township of Wilmot.

CARRIED.

17. CONFIRMATORY BY-LAW

17.1 By-law No. 2021-18

Resolution No. 2021-65

Moved by: Councillor B. Fisher Seconded by: C. Gordijk

THAT By-law No. 2021-18 to Confirm the Proceedings of Council at its Meeting held on March 22, 2021 be introduced, read a first, second, and third time and finally passed in Open Council.

CARRIED.

18. ADJOURNMENT (11:35 PM)

Resolution No. 2021-66

Moved by: Councillor C. Gordijk Seconded by: Councillor A. Hallman

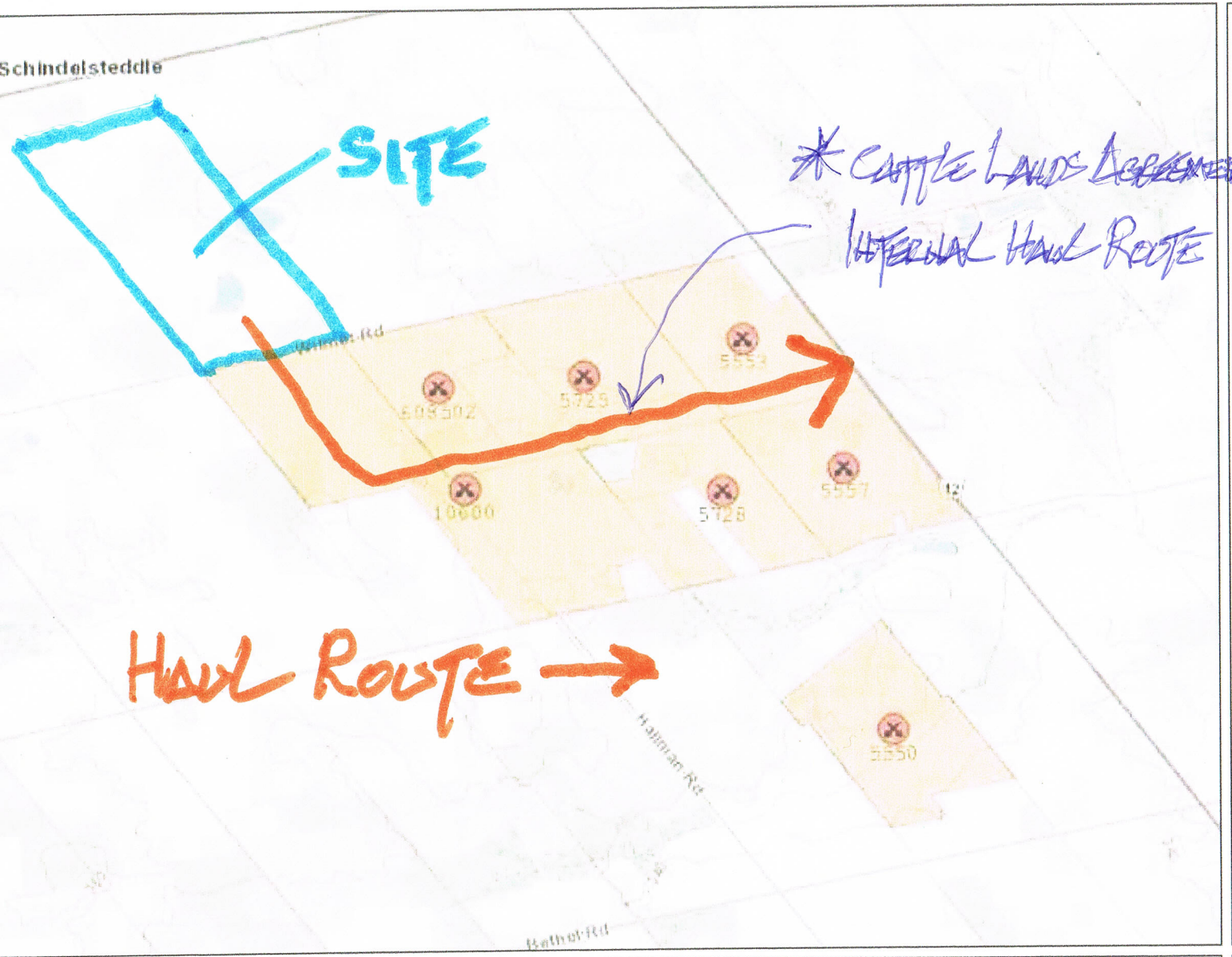
THAT we do now adjourn to meet again at the call of the Mayor.

CARRIED.

ario

(map title)

Notes:
(map notes)



Legend

- Building as Symbol
- Building to Scale
- Runway
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0.8 km

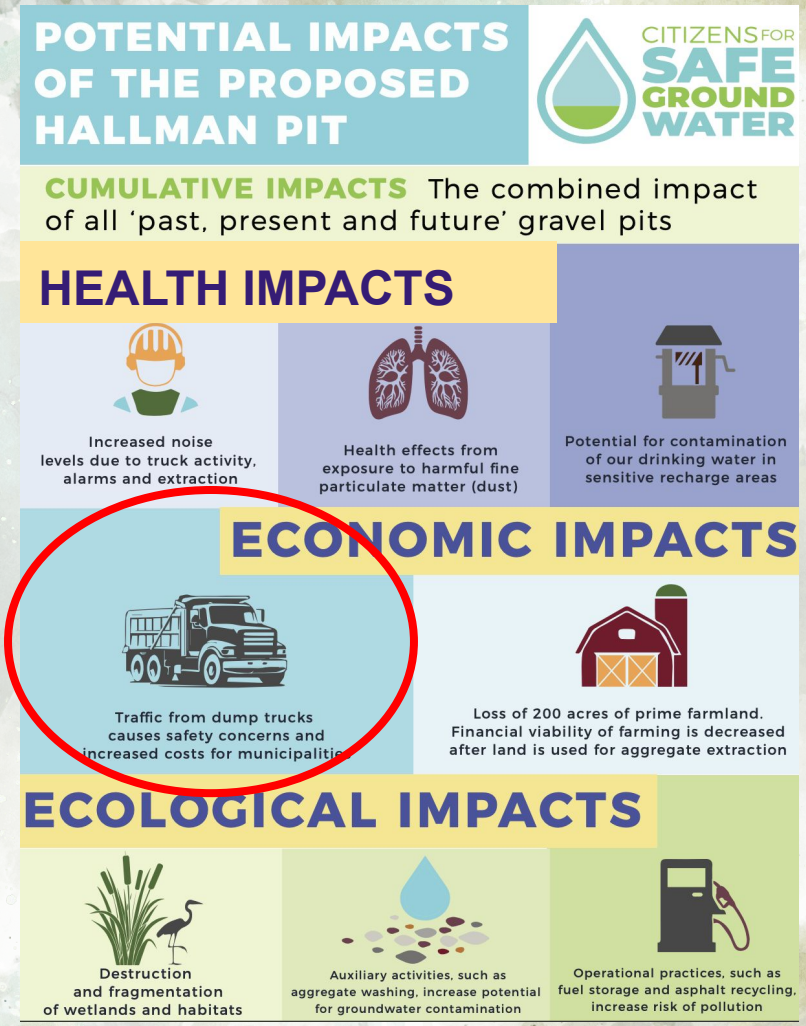
Projection: Web Mercator

CITIZENS FOR SAFE GROUND WATER

Traffic Impacts Review

March 22st, 2021 - Wilmot Township Council, 7pm

Potential Hallman Pit Impacts



statements made are based on expert reviews commissioned by the Region of Waterloo, Wilmot Township and Citizens for Safe Ground Water Inc., as well as the Grand River Conservation Authority, to date

Traffic Impacts Review

Proposed "Haul Route" Using Wilmot Township Witmer Road

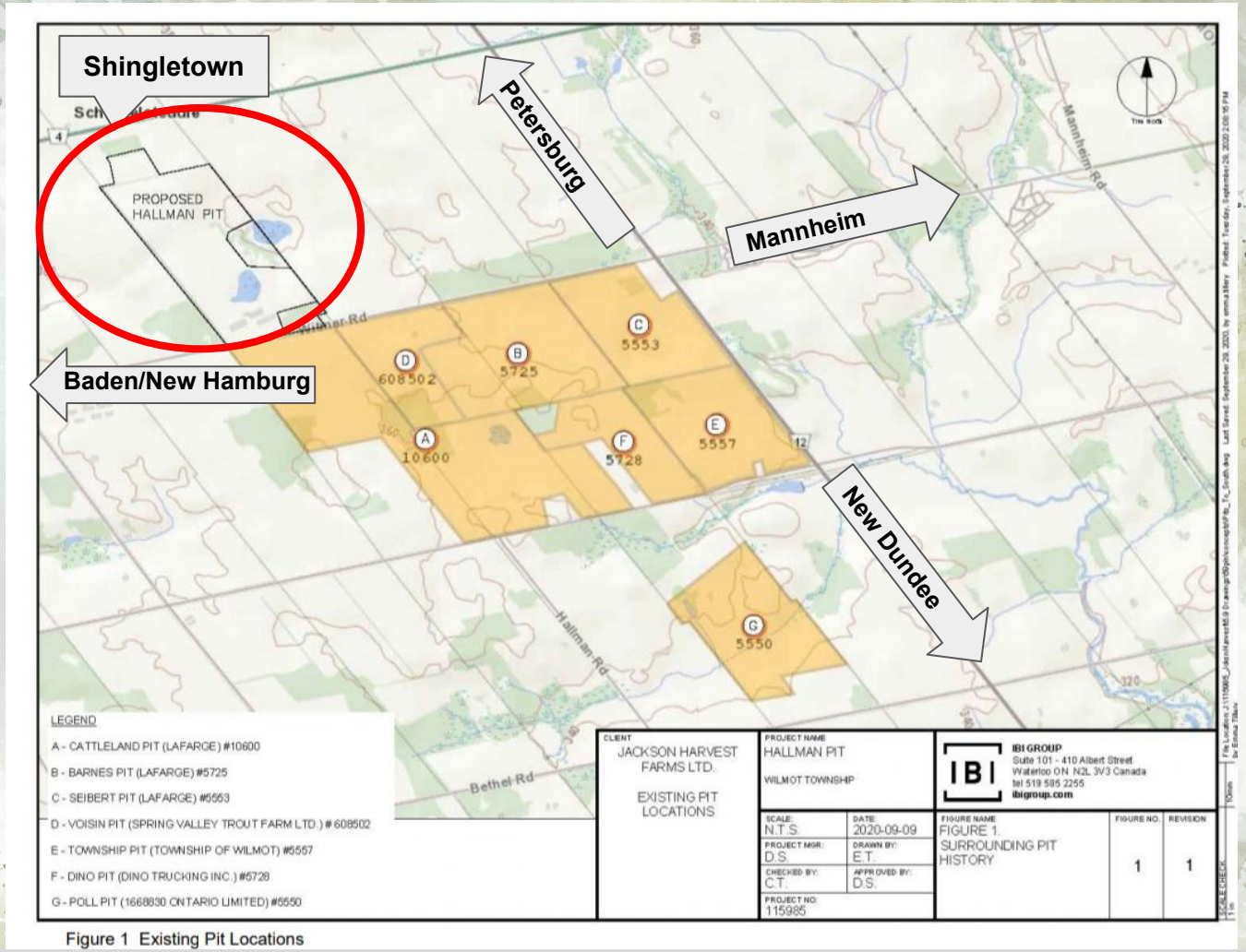


Figure 1 Existing Pit Locations

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

CSGW Experts Commissioned

Purpose	Organization
Acoustic Peer Review	J.E. Coulter and Associates
Air Quality Peer Review	Di GiSci Environmental Consulting Inc.
Traffic Impacts Review	True North Safety
Conformance to the Official Plan	Ramsay Planning Inc.
Legal Representation	Canadain Environmental Law Association (CELA)

CSGW representation recognized as leaders in their field of expertise

Russell Brownlee, P.Eng.
True North Safety Group

- **25+ year experience** in transportation engineering.
- Academic background includes Master of Applied Science in Civil Engineering, **University of Waterloo**
- 2017 Transportation Safety Council award recipient for **leadership in the field of traffic safety**.
- Consulting Engineers of Ontario appointee to Ontario **Provincial Standards Traffic Safety** Committee.
- Recognized as a **qualified Road Safety Expert**, Superior Court of Justice, Ontario

"**Witmer Road** is currently a ***relatively low*** travelled roadway, which ***may not*** fully exhibit the effects of the ***geometric deficiencies*** at the **intersection** due to the ***low frequency*** of vehicle conflicts. The additional eastbound left turn ***heavy trucks*** from the pit activities ***may create safety issues*** at this stop-controlled intersection, due to the ***poor geometry*** and ***additional side street conflicts***."

True North Safety Peer Review

Concerns Identified:

- **Incomplete safety analysis** conducted.
- **Sight distance deficiencies** exiting pit, and Witmer/Queen intersection.
- "Peak hour" use **not consistent** with data collected.
- **Underestimated** travel demands.
- Intersection geometry **poorly designed**, side street **conflicts**.

> *"Incomplete safety review regarding available sight distance to and from the Pit site access and requirements for auxiliary turn lanes at the site access intersection, especially considering the impact of slow-moving heavily laden vehicles as they exit the property."*

Based on our review of Google Streetview™ images, it appears that available sight distances are in excess of 200 or more metres in either direction from the pit access location shown in Figure 5.1 of the Paradigm report.

The AECOM report does not comment on the lack of safety analysis at the intersection of Queen Street and Witmer Road intersection.

Both the Region of Waterloo TIS guidelines and the Paradigm report suggest that sight lines should be reviewed at the study access and intersections. The Paradigm report provides a qualitative comment regarding the sight lines at the proposed pit access, and does not evaluate the sightlines at the intersection of Queen Street and Witmer Road.

Based on a cursory desktop review, it is likely that adequate approach site distances (i.e., sight triangles) are not available on the southwest quadrant of the intersection of Queen Street and Witmer Road. Departure sight distances from the eastbound stop bar may also be deficient to select a gap in vehicles approaching from the south on Queen Street.

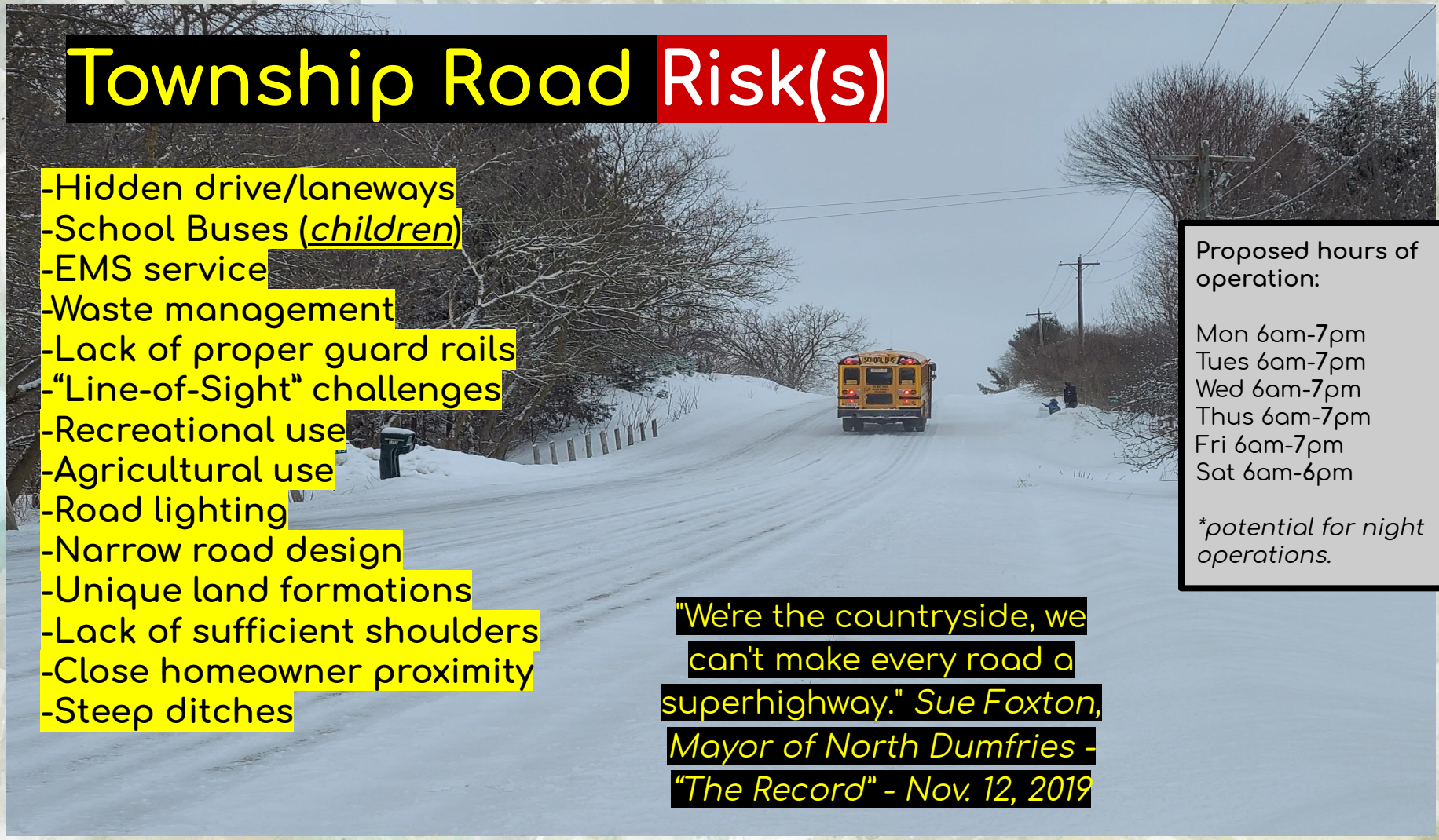
Witmer Road is currently a relatively low travelled roadway, which may not fully exhibit the effects of the geometric deficiencies at the intersection due to the low frequency of vehicle conflicts. The additional eastbound left turn heavy trucks from the pit activities may create safety issues at this stop-controlled intersection, due to the poor geometry and additional side street conflicts.

I trust the above meets your needs at this time. If you would like to discuss the provided comments, please do not hesitate to contact me.

Sincerely,

Russell Brownlee, M.A. Sc., FITE, RSP1, P. Eng.

Township Road Risk(s)



-Hidden drive/laneways
-School Buses (*children*)
-EMS service
-Waste management
-Lack of proper guard rails
-"Line-of-Sight" challenges
-Recreational use
-Agricultural use
-Road lighting
-Narrow road design
-Unique land formations
-Lack of sufficient shoulders
-Close homeowner proximity
-Steep ditches

Proposed hours of operation:

Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

**potential for night operations.*

"We're the countryside, we can't make every road a superhighway." *Sue Foxton, Mayor of North Dumfries - "The Record" - Nov. 12, 2019*

Applicant's "Acknowledgement" of Road Use

6. You have raised a concern regarding the lack of shoulder space for cyclists and pedestrian traffic.

Response: First, to recognize that Witmer Road may be used by other users (pedestrians, cyclists, farm equipment), Jackson Harvest Farms Ltd. is prepared to erect an advisory sign at the pit exit for all truck drivers which will read:

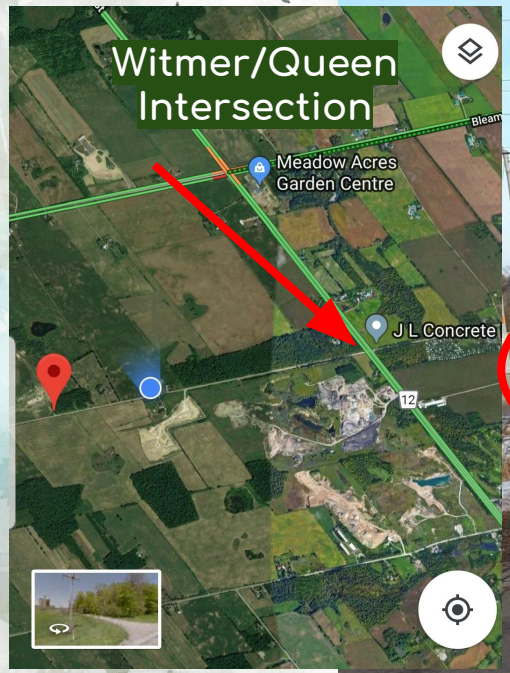
ATTENTION DRIVERS:

- Left turn exit only!
- CAUTION: Witmer Road is also used by pedestrians, cyclists, children and slow moving vehicles!

Jackson Harvest Farms Ltd.

In response to Witmer Road safety concerns, the applicants is *"prepared"* to erect a sign for drivers exiting the "Hallman Pit".

Witmer/Queen Intersection



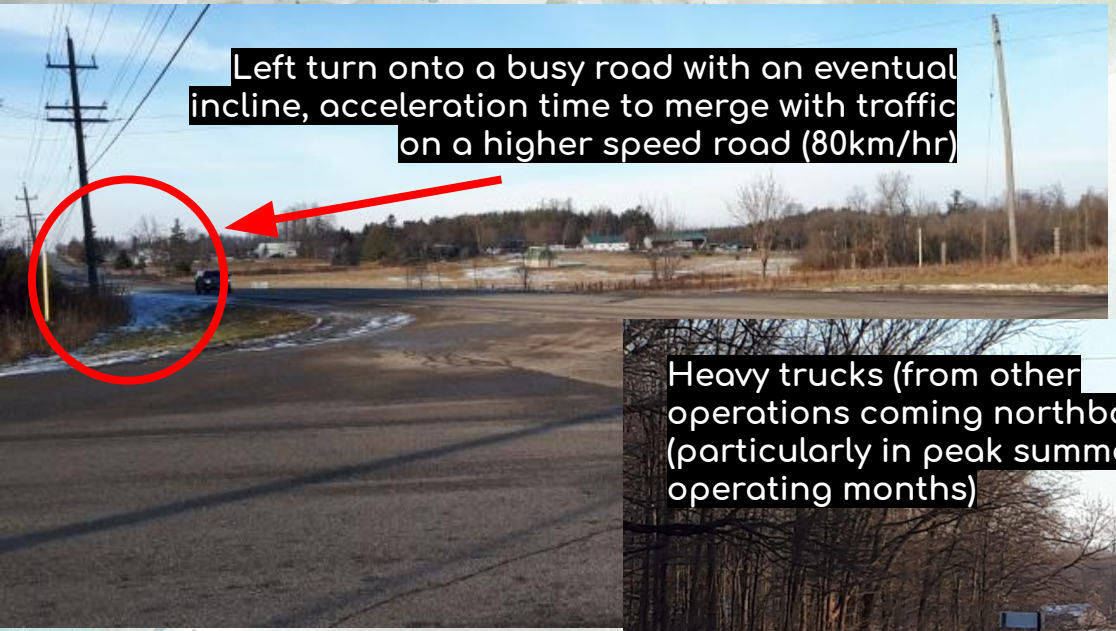
Roads do not intersect at a 90 degree angle, which offers a level of complexity

Witmer/Queen Intersection

Potential safety issues with ***slow acceleration*** onto Queen Street.

Significant ***sight obstruction*** to the right can require pulling into intersection to make a *"safe"* turn.

Witmer/Queen Intersection



Could heavy load vehicles (i.e. trucks) experience issues accelerating onto a busy Queen Street?

Built for Steady Heavy Truck Capacity?

Estimated ***181 trucks (per day)***, potential for more intensity in "construction season" months...

Proposed hours of operation:
Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

**night operations possible*

Cumulative Impacts:

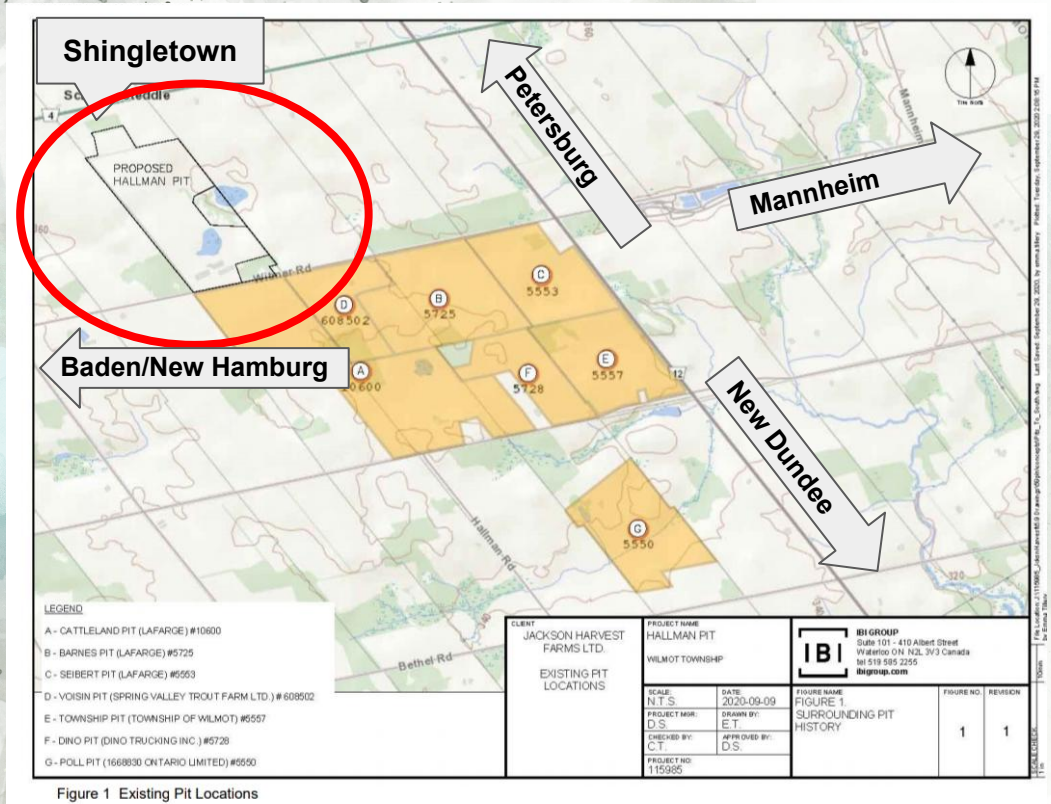


Figure 1 Existing Pit Locations

The consideration of the impacts of previous, present, and future gravel pits in the area

1. Coco Paving
2. Tri-City (Miller Group)
3. Steed and Evans
4. Laforge
5. Township of Wilmot
6. Kieswetter Excavating
7. Dino Trucking
8. *Jackson Harvest Farms?*
9. And more…

All traveling throughout Wilmot Township…

https://facility-admin.esolutionsgroup.ca/Uploads/Files/16E7D05A-FC42-4E34-A1EF-8C5C6858A2BF/zca-11-19/updates/PlanningReport_Addendum.pdf

Impacts ***NOT*** addressed

The Hallman Pit can set a ***dangerous*** precedent

There is a need for:

1. Consideration of **safety/operations** at the Witmer Road intersection with Queen Street.
2. Consideration of the **safety** of recreational road users (cyclists, walkers, joggers, motorcyclists, etc.)
3. Consideration of the **SAFETY** (not just operations) of Witmer Road for school buses, waste management, EMS services, hidden driveways/laneways, etc.
4. **Cumulative impacts (7.2.4.3) study** of the Witmer/Queen intersection "*area*", reviewed by an expert third party.

Thank You

CITIZENS FOR SAFE GROUND WATER

For more information to show your support please contact:

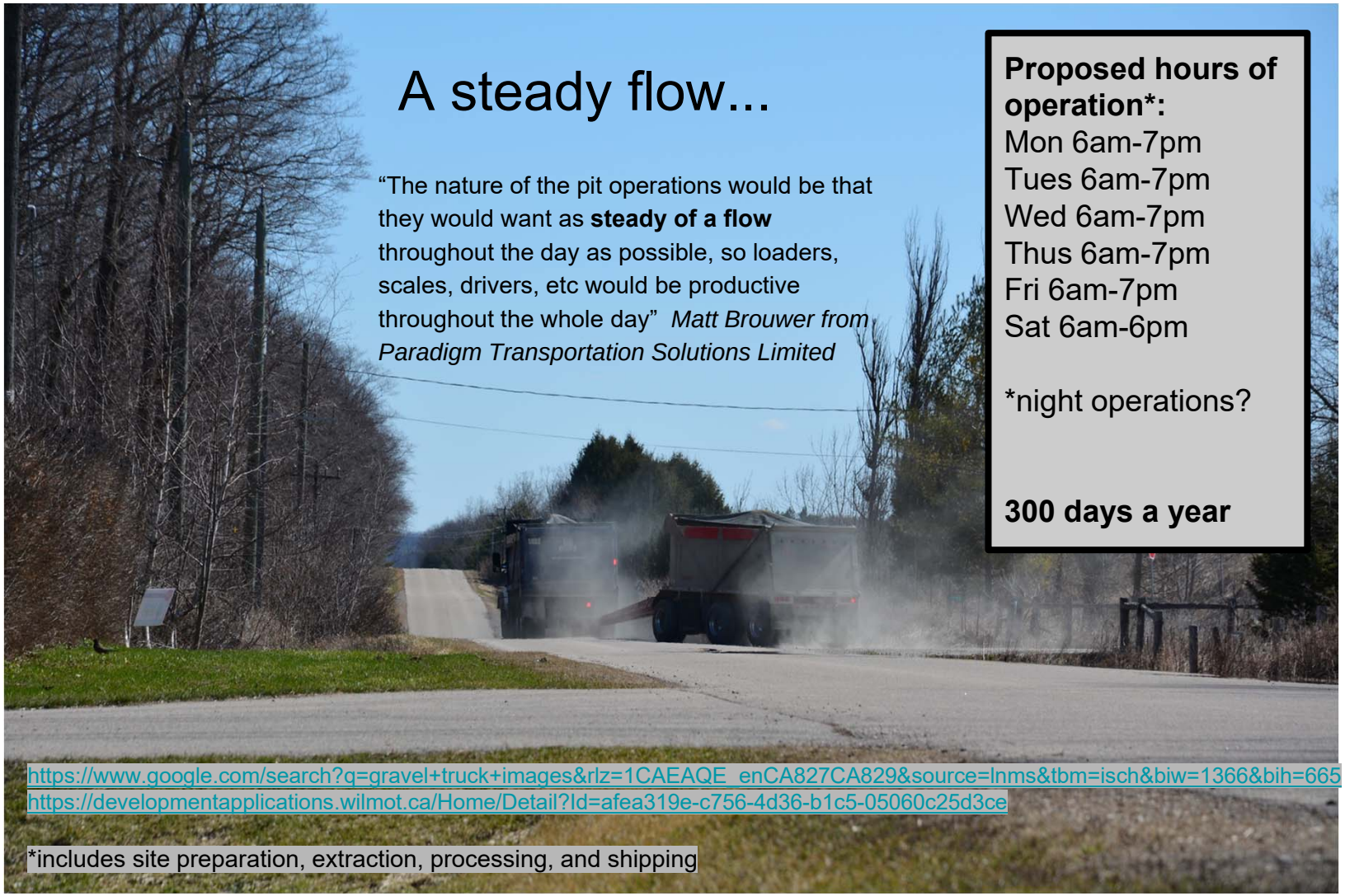
"Citizens for Safe Ground Water" on Facebook

www.safeH2O.ca

wilmotgroundwater@gmail.com

Living on Witmer Rd

March 22st, 2021 - Wilmot Township Council Meeting, 7pm



A steady flow...

"The nature of the pit operations would be that they would want as **steady of a flow** throughout the day as possible, so loaders, scales, drivers, etc would be productive throughout the whole day" *Matt Brouwer from Paradigm Transportation Solutions Limited*

Proposed hours of operation*:
Mon 6am-7pm
Tues 6am-7pm
Wed 6am-7pm
Thus 6am-7pm
Fri 6am-7pm
Sat 6am-6pm

*night operations?

300 days a year

https://www.google.com/search?q=gravel+truck+images&rlz=1CAEAQE_enCA827CA829&source=lnms&tbm=isch&biw=1366&bih=665
https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

*includes site preparation, extraction, processing, and shipping

Transportation Impact Study

384% traffic impact per day*

https://www.google.com/search?q=gravel+truck+images&rlz=1CAEAQE_enCA827CA829&source=lnms&tbm=isch&biw=1366&bih=665
https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

*calculated using information provided applicant's reports and township records

FINAL

JUSTIFICATION REPORT - ADDENDUM
) HALLMAN PIT
R ROAD, WILMOT TWP.

o Jackson Harvest Farms Ltd.

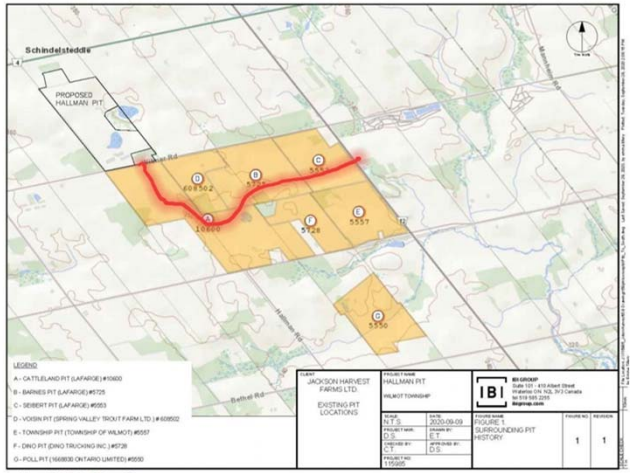


Figure 1 Existing Pit Locations

020 2

IBI GROUP FINAL

PLANNING JUSTIFICATION REPORT - ADDENDUM
PROPOSED HALLMAN PIT
1894 WITMER ROAD, WILMOT TWP.

Submitted to Jackson Harvest Farms Ltd.

E. Township Pit
Corporation of the Township of Wilmot
ARA Licence # 5557
Licensed Area: 41.8 hectares
Class A, Category 2 (pit below water)
Annual Tonnage: 75,000 tonnes

F. Dino Pit
Dino Trucking Inc.
ARA Licence # 5728
Licensed Area: 25.2 hectares
Class A, Category 3 (pit above water)
Annual Tonnage: 250,000 Tonnes

G. Poll Pit
1668830 Ontario Limited
ARA License # 5550
Licensed Area: 45.7 hectares
Class A, Category 3 (pit above water)
Annual Tonnage: 50,000 Tonnes

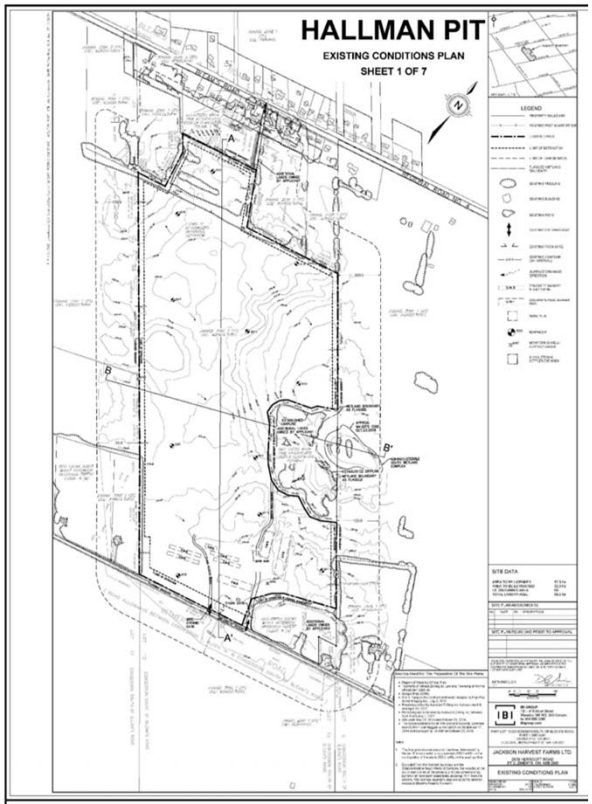
*Red line added to public document **

https://developmentapplications.wilmot.ca/Home/Detail?Id=a1ea319e-c756-4d36-b1c5-05060c25d3ce

ROUP FINAL

ıNING SUMMARY REPORT
POSED HALLMAN PIT
WITMER ROAD, WILMOT TWP.

ıred for Jackson Harvest Farms Ltd.



EXISTING CONDITIONS

FIGURE 2
HALLMAN PIT, JACKSON HARVEST FARMS LTD.
TOWNSHIP OF WILMOT, REGIONAL MUNICIPALITY OF WATERLOO
SCALE NTS
DATE SEPTEMBER 24, 2019
PROJECT No. 115965

IBI GROUP
101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

What's Next?

ROUP FINAL

NING SUMMARY REPORT
POSED HALLMAN PIT
WITMER ROAD, WILMOT TWP.

red for Jackson Harvest Farms Ltd.

EXISTING CONDITIONS

FIGURE 2
HALLMAN PIT, JACKSON HARVEST FARMS LTD.
TOWNSHIP OF WILMOT, REGIONAL MUNICIPALITY OF WATERLOO
SCALE NTS
DATE SEPTEMBER 24, 2019
PROJECT No. 115955

IBI GROUP
101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

https://developmentapplications.wilmot.ca/Home/Detail?Id=afea319e-c756-4d36-b1c5-05060c25d3ce

DANCE ENVIRONMENTAL INC.

Natural Environment Level 1 & 2 Report and E.I.S.

For Aggregate Licence Application
Part Lot 10, German Block South of Bleams Road, Township of Wilmot
Regional Municipality of Waterloo.
Proposed Hallman Pit

Prepared for:
Jackson Harvest Farms
2879 Herrgott Road
St. Clements, ON.
N0B 2M0

Prepared by:
Dance Environmental Inc.
807566 Oxford Rd. 29
R.R. #1 Drumbo, Ontario.
N0J 1G0
519-463-6156

September 20, 2019.
DE-428

1.0 BACKGROUND

The applicant is applying for a Category 3 Aggregate Licence. The study area is shown on Figure 1. The licence is proposed to cover 57.27ha. The maximum annual tonnage is proposed to be 750,000 tonnes.

This Natural Environment Level 1 & 2 Technical Report and E.I.S., was prepared to accompany the licence application. Dance Environmental Inc. was retained by the applicant to prepare this report.

A Terms of Reference for the scoped EIS for the proposed aggregate pit was prepared at the request of the GRCA and Region of Waterloo staff. The Terms of Reference was provided to the Waterloo Region EACC for review and comment. The final approved Terms of Reference is provided in Appendix I.

Within the EIS the use of the term "site" refers to the licence area for the proposed pit. The use of the term "offsite" refers to the area within 120m of the licence area for the proposed pit. Within the EIS the term "study area" refers to the site and offsite areas combined.

2.0 STUDY OBJECTIVES

The objective of the Natural Environment Level 1 report under the Aggregate Resources Act, is to determine whether any of the following features exist on and within 120 metres of the site: significant wetland, habitat of endangered or threatened species, fish habitat, significant valleylands, significant wildlife habitat, significant woodlands, and Areas of Natural and Scientific Interest (ANSI).

3.0 STUDY METHODS

3.1 Existing Information

The following sources were contacted and researched to determine what was known about the study area. Tim Van Hinte at the Regional Municipality of Waterloo was contacted, as was Harold O'Krafka, Director of Development Services, the Township of Wilmot.

Tara McKenna at the MNRF Guelph District was sent an Information Request Form along with a request for information letter on May 1, 2018, and Management Biologist Graham Buck responded on June 1, 2018. The June 1, 2018 response letter included a list of SAR species known from Wilmot Township.

A request for information was sent to Kaitlyn Rosebrugh at the Grand River Conservation Authority (GRCA) by Dance Environmental Inc., on May 1, 2018. Beth Brown from the GRCA responded to the request for information on September 7, 2018.

An information request letter was sent on May 1, 2018 to Harold O'Krafka at the Township of Wilmot. An email response to the information request was provided

on May 7, 2018, suggesting that the questions from the information request would be best directed to GRCA and the Region of Waterloo.

Environmental mapping in the Region of Waterloo Official Plan (2015) was reviewed.

A search for historical records from the Ontario Herptofauna Atlas was completed on April 25, 2018 for square 17NJ30 (Ontario Herptofauna Atlas, 2018). The Ontario Butterfly Atlas was searched for historical records for square 17NJ30 on July 29, 2019 (OBA, 2019). Information from the second Ontario Breeding Bird Atlas (OBBA) was obtained on April 25, 2018 for historical bird records for square 17NJ30 (OBBA 2018).

The Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan update, 2008 (CH2MHILL and North-south Environmental Inc. 2008) was reviewed in relation to the proposed Hallman Pit.

Figure 1 shows the site location.

3.2 Field Work

An initial site visit in April 2018, along with a review of the historical records from the OBBA and Ontario Herptofauna Atlas for the 10x10 km square in which the study area is located (17NJ30), were used to determine the surveys to be conducted. The methodological approaches used to complete flora and wildlife surveys are provided in detail below.

3.2.1 Vegetation

Vascular Plant Inventory and ELC Community Identification

Detailed vascular plant surveys were conducted during Spring, Summer and Autumn (see Table 1 for dates) to develop a list of plant species present within the study area, see Appendix II. The plant surveys also focused on determining whether any regionally or provincially rare plants were present within the study area.

The findings of the vascular plant inventory conducted within the study area boundaries were used to assist with the determination of ELC polygons within the licence area and offsite. Vegetation community mapping was completed using the Ecological Land Classification (ELC) methods described in Lee et al. (1998), with vegetation community types being classified using Harold Lee's 2008 update to the ELC vegetation community types and community codes (Lee 2008).

Searches for Butternut trees occurred during both leaf on and leaf off seasons to confirm whether or not this SAR tree species was present on site or adjacent to the study site. The surveys were completed by a certified Butternut Health Assessor.

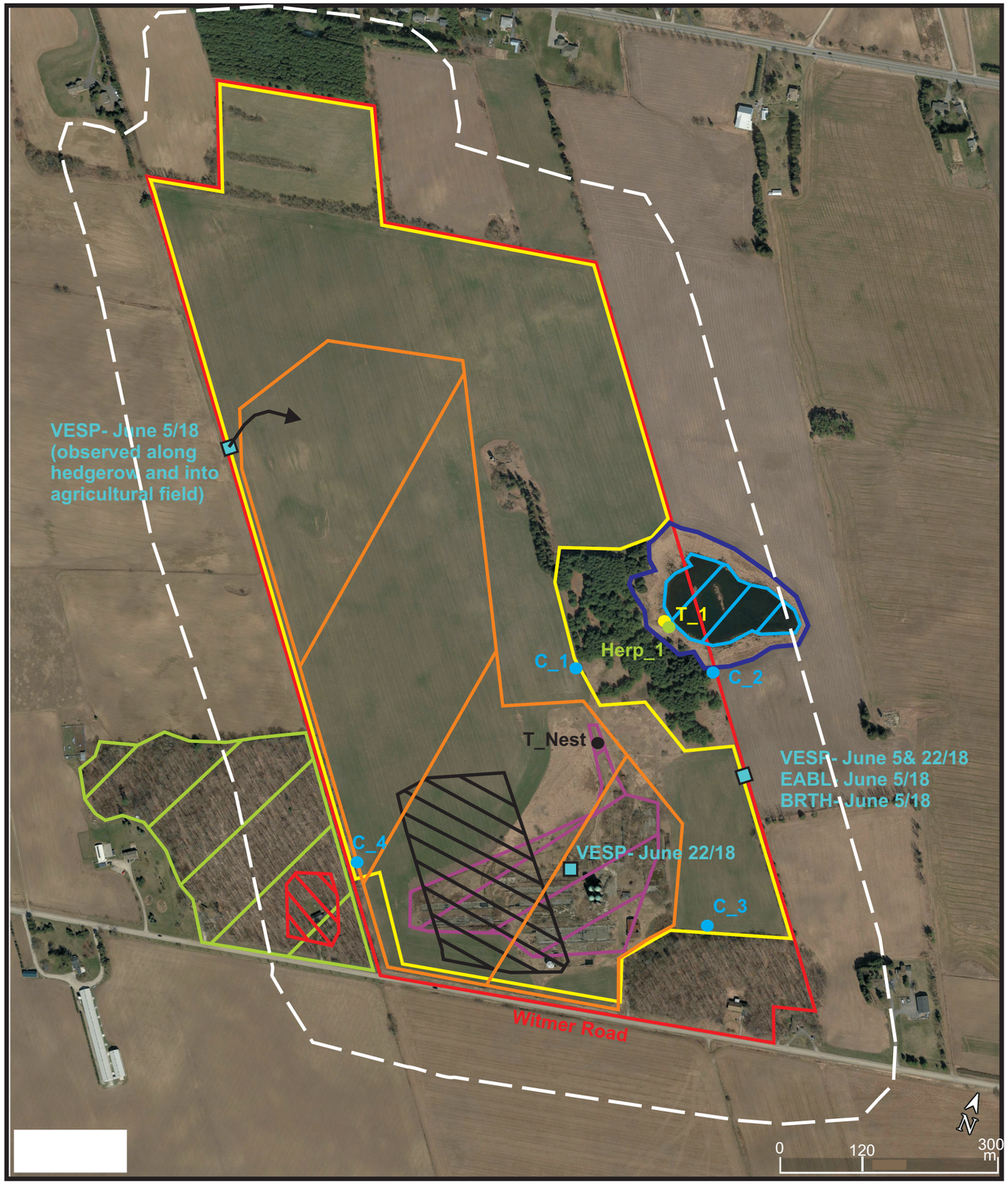


Figure 1. Study Area Boundaries, Locations of Survey Stations, SWH, and SAR Observations, Proposed Hallman Pit.

LEGEND

- Approximate Proposed Limit of Extraction Boundary.
- Approximate Site Boundary.
- Limit of 120m Off Site Study Area
- Significant Woodland(Core Env. Feature)/ Eastern Wood-pewee (SWH)
- Wintering Turtle Habitat (SWH) & Fish Habitat.
- Monarch (SWH) -Special Concern Species
- Area Searched for Potential Snake Hibernacula.
- T_Nest — Painted Turtle Nest.
- Regionally Rare Birds (VESP =Vesper Sparrow, BRTH =Brown Thrasher, EABL =Eastern Bluebird)

Areas within which SAR species were observed

- Approximate Area Where Eastern Wood-Pewee Was Heard During Breeding Season 2018.
- Approximate Area Where Barn Swallows Were Observed (foraging/perching).
- Approximate Area Where a Bank Swallow Was Observed Foraging.

Survey Station Locations, 2018

- T_1 — Turtle Count Location.
- C_1 — Crepuscular Bird Survey Station Location.
- Herp_1 — Herpetofauna Survey Station (MMP).

DANCE ENVIRONMENTAL INC.

DE-428

Sept. 3, 2019

3.2.2 Wildlife

3.2.2.1 Breeding Birds

Breeding bird surveys conducted in 2018 were completed following the breeding bird survey protocol used for the Ontario Breeding Bird Atlas (OBBA 2001). The site study area is shown as the site on Figure 1. The off site study area was the off site area within 120m of the site boundary. The breeding bird surveys focused on assessing the breeding bird activity within the study area over two survey visits, at least 10 days apart. All visits were conducted during early morning hours between a half hour before sunrise and 09:00 hrs. The breeding bird surveys involved a Dance Environmental Inc. biologist conducting walking area searches throughout the various vegetation communities within the study area.

The benefits of conducting walking area searches over other methods include: being able to cover a greater amount of area within the study area; increased amount of time spent on site (compared with 5 or 10 minute point counts) and therefore a higher likelihood of observing more bird species; and allows for greater evidence of species presence to be observed such as active nests, used nests, and recently fledged young which are more likely to be observed by walking through various vegetation communities.

All bird species observed or heard within the study area during each breeding bird site visit were recorded. Any birds which were observed or heard outside of when the breeding birds surveys were being conducted, were recorded as incidental observations. If any Species at Risk were observed, their locations were to be mapped and any details of the observations recorded.

3.2.2.2 Insects

Habitats where suitable vegetation was growing were carefully searched for butterflies, Odonata and bumble bees. Insects were identified on the wing if possible, if not they were captured and were identified in the hand.

Insect inventory was undertaken during sunny, low wind periods.

3.2.2.3 Reptiles and Amphibians

Searches for snakes leaving hibernaculum were undertaken in the Spring due to the presence of old concrete manure pits and building foundations which were present centrally within the southern portion of the site. Searches for snakes leaving hibernaculum included searching under logs, boards, metal, mulch, debris and stones. Potential hibernation sites were checked with binoculars before they were approached. The sites were approached slowly and quietly, all the while watching for snakes. Debris near the potential hibernation sites was lifted to check for hidden snakes.

A total of six site visits were undertaken between April 22 and May 23 (April 22 & 30, May 1, 8, 15, & 23, 2018) specifically to identify any potential hibernation sites for snakes which would identify whether there was any significant wildlife

habitat present for snakes. The searches for snakes were undertaken on dates with suitable weather conditions including sunny, warm, with low wind conditions.

Amphibian surveys were undertaken using the Marsh Monitoring Protocol to identify breeding frogs within the study area.

Turtle counts were undertaken in early Spring to identify whether any turtles were present at the offsite pond. These counts were undertaken when vegetation was still low and turtles would be able to be seen in the water along the shallow pond edges or out on pond edges sunning. Binoculars were used to count individuals, identify the species present and then determine a maximum count of individuals present at one time during the count period (approximately a 15 minute survey).

Once turtles were confirmed to be present at the offsite pond, searches for turtle nests in any potential open sandy areas around the pond were undertaken. Open sandy areas were searched for evidence of recent digging and filling in of nest locations and any locations where nests were dug up by predators which are identifiable by a dug hole in the ground accompanied by turtle egg shells.

TABLE 1. Dates, Times and Weather, 2018 and 2019 Site Visits.

DATE	START (24hrs)	END (24hrs)	WEATHER	STAFF	PURPOSES OF VISIT
April 21/18	19:20	21:05	5.2^{0}C, <5% cloud, no precip.; Beauf. 0	KWD, JLD	Herp survey #1
April 22/18	11:50	13:56	16^{0}C, 30-40% cloud, no precip.; Beauf. 1	KSD	Snake surveys, incl. Birds, Turtle count
April 30/18	12:50	16:48	20^{0}C, 0% cloud, no precip.; Beauf. 2	KWD JLD	Snake surveys, incl. Birds,
May 1/18	13:36	15:29	25^{0}C, <5% cloud, no precip.; Beauf. 2	KSD	Snake surveys, incl. Birds, Turtle count
May 8/18	13:40	15:50	22^{0}C, <5% cloud, no precip.; Beauf. 1	KSD	Snake surveys, incl. Birds, Turtle count
	21:00	21:30	22^{0}C, <5% cloud, no precip.; Beauf. 0	KSD	Herp survey #2
May 15/18	13:55	15:30	18^{0}C, 60% cloud, no precip.; Beauf. 0	KWD	Snake surveys, incl. Birds, plants
May 23/18	11:34	13:02	20^{0}C, <5% cloud, no precip.; Beauf. 2	KSD	Snake surveys, incl. Birds, Turtle count & nesting area search
May 29/18	20:58	22:06	21.5^{0}C, 10% cloud, no precip.; Beauf. 2	KWD JLD	Herp survey #3, Crepuscular birds
June 5/18	06:30	09:20	14^{0}C, 30% cloud, no precip.; Beauf. 2	KSD	Breeding bird survey, turtle nesting area search, incidental wildlife & Butternut searches

June 22/18	05:12	07:42	23^{0}C, 20% cloud, no precip.; Beauf. 1	KSD	Breeding bird survey, turtle nesting area search, incidental wildlife& Butternut searches
June 26/18	22:09	22:55	16^{0}C, 50-80% cloud, no precip.; Beauf. 2	KSD	Crepuscular bird survey, turtle nesting area search
July 5/18	08:40	10:10	27^{0}C, 10% cloud, no precip.; Beauf. 1	KSD	Turtle nesting area search, incidental wildlife, insects, Butternut searches
Sept 17/18	09:48	14:48	19^{0}C, 10% cloud, no precip.; Beauf. 1	KSD	ELC polygon ID/vegetation list, Wetland boundary delineation, and confirmation with GRCA staff, Butternut searches
Sept 20/18	10:40	14:30	16^{0}C, 60% cloud, no precip.; Beauf. 1	KSD	ELC polygon ID/vegetation list, Butternut searches
Feb 5/19	19:40	21:10	-6^{0}C, 40% cloud, no precip.; Beauf. 1	KSD	Evening Owl Survey
Feb 19/19	14:10	16:10	-7^{0}C, 15% cloud, periodic light snow, Beauf. 1	KSD	Winter Wildlife
Mar 6/19	14:10	16:10	-15^{0}C, 30% cloud, no precip. Beauf. 3	KSD	Winter Wildlife
April 22/19	21:38	23:40	14^{0}C, 10% cloud, no precip. Beauf. 0-1	KSD	Evening Owl Survey
May 9/19	09:00	10:08	7^{0}C, 80% cloud, no precip. Beauf. 3	KSD	Vegetation and wildlife
May 23/19	11:40	13:58	17^{0}C, 85% cloud, no precip. Beauf. 2	KSD	Check for fish at pond

LEGEND

KWD = Ken Dance, M.Sc.
KSD = Kevin Dance, M.E.S.
JLD = Janet Dance

4.0 FINDINGS

4.1 Physical Conditions

4.1.1 Groundwater and Surface Water

Harden Environmental Services Ltd. (HESL) has prepared a Level 1 and Level 2 hydrological impact assessment for the proposed Hallman Pit (HESL 2019).

There is a wetland with a permanent open water pond located within the study area boundary, with approximately ¾ of the wetland being located on the adjacent neighbour's property (but within 120m of the licence area). The wetland is approximately 2.2ha in size, with a catchment of approximately 182 ha (HESL 2019). GRCA GRINNS mapping shows that there is estimated floodplain and a regulation limit area around the open water pond. There are no surface inflow or outflow features from the wetland feature, but it is permanently water filled. Approximately 36% of the site drains to the off site wetland (MAMM1-3) and open water aquatic habitat (OAO) (HESL 2019).

The offsite wetland is supported hydrologically from three sources including precipitation, overland runoff and groundwater (HESL 2019). The wetland is not considered to be isolated from the ground water system, rather the local water table supports the pond water levels during seasonal low periods (HESL 2019). Further details of this are discussed in the HESL report (2019).

Figure 2 shows the floodplain and regulation limits.

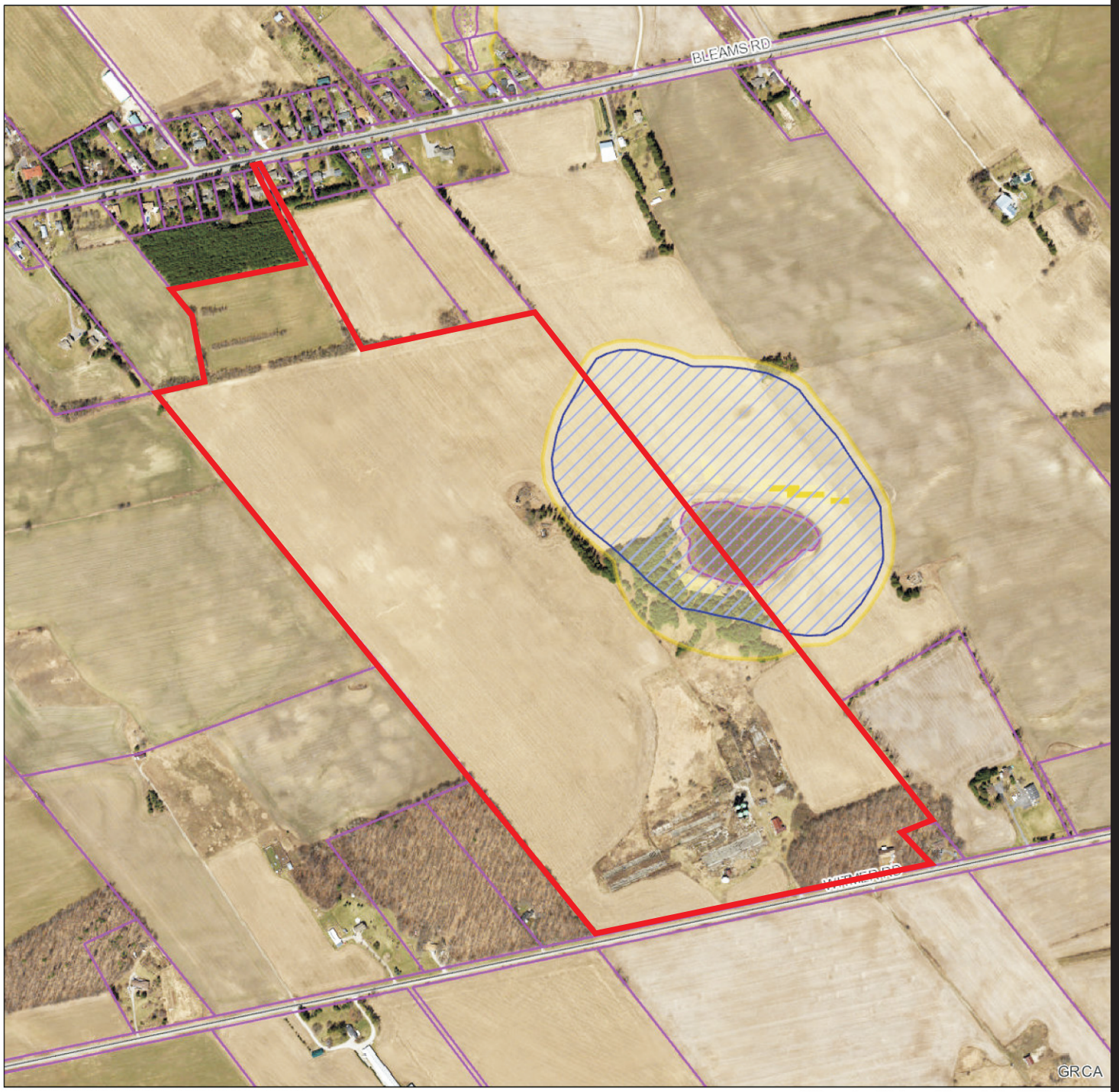
4.1.2 Ecological, Hydrological and hydrogeological, Economic and Social Functions

The site is located in an upland area of the Nith River and Alder Creek Subwatersheds which is an area of significant groundwater recharge. The underlying Kame sand deposits facilitate infiltration of precipitation and snow melt (HESL 2019). The Alder Creek Subwatershed Study (2008) indicates that the groundwater flow direction to be southerly to southeasterly. According to the HESL report (2019) groundwater flow direction on site in the northern portion was confirmed to be in a southerly direction.

The HESL report (2019) indicates that groundwater from the site supports the wetland for most of the year and the spring freshet or significant snow melt results in rapid rise of surface water levels causing bank storage (water level in the wetland being higher than surrounding groundwater for several months).

There are 52 private water wells located within five hundred metres of the site, with several wells which obtain water from the sand and gravel unit being extracted (HESL 2019). According to the HESL report (2019) the proposed above-water–table extraction will not interfere with the quality or quantity of the water available to those wells.

Figure 2. Wetland Regulation Mapping From GRCA (GRINs Mapping), Proposed Hallman Pit



Legend

- Regulation Limit (GRCA)
- Regulated Watercourse (GRCA)
- Regulated Waterbody (GRCA)
- Wetland (GRCA)
- Floodplain (GRCA)
  - Engineered
  - Estimated
  - Approximate
  - Special Policy Area
- Slope Valley (GRCA)
  - Steep
  - Oversteep
  - Steep
- Slope Erosion (GRCA)
  - Oversteep
  - Toe
- Lake Erie Flood (GRCA)
- Lake Erie Shoreline Reach (GRCA)
- Lake Erie Dynamic Beach (GRCA)
- Lake Erie Erosion (GRCA)
- Parcel - Assessment (MPAC/MNRF)

DANCE ENVIRONMENTAL INC.

DE-428

Sept. 3, 2019

0 55 110 220 330 Metres

N

NAD 1983 UTM Zone 17N

Scale: 9,002

The hydrogeological report from HESL (2019) recommends that a certain progression of extraction of the aggregate take place in order to mitigate any potential impacts on the wetland and pond on the east side of the extraction boundary. The phasing approach recommended in the HESL report (2019) will result in three drainage areas being created on site post-construction. Post extraction drainage area 1 is to be designed to have a gradual slope to the off site wetland, increasing its catchment area from 24.8 ha to 32.3 ha (details of this are provided in the HESL report (2019). Through implementing the proposed approach the only change in hydrology for the wetland will be an increase in its onsite catchment area. The result is estimated to be a 4.4% increase in the surface water input to the wetland, and a 3.9% increase of infiltration to the wetland (HESL 2019).

Through implementing the recommended approach there is not anticipated to be a significant impact on hydrologic input into the wetland. If a similar hydrologic regime is maintained and the projected small change to the water input into the system it is anticipated that there will be no significant impact on the herpetofauna and fish which require the wetland for their survival.

Ground water monitoring is proposed to be continued at the site and in the wetland during the pit operation so that if any changes in hydrological inputs to the system occur they will be known, and can be dealt with.

4.1.3. Geology and Soils

The northern and western areas of the site have the highest elevations on the site. The elevations on the site range from 375m AMSL to 355m AMSL (Harden 2019). The lowest areas of elevation on site are located adjacent to the off site wetland (centrally along the eastern site boundary).

Chapman and Putnam (1986) was reviewed and indicated that the site is located within the Waterloo Hills physiographic region. The soils types on site are well drained and are identified as Lisbon Sand Loam, Fox Sandy Loam and Burford Gravel Loam (HESL 2019).

4.2 Regulated Area

As was noted previously there is regulated area around the open water pond located centrally on the eastern study site boundary.

The historical GRCA mapping (2018) showed a wetland with regulation limit in the central part of the southern portion of the site. This area was reviewed and examined on site by Tony Zammit with Dance Environmental Inc. staff on September 17, 2018. It was indicated by GRCA staff on that site visit that the GRCA mapping was not accurate regarding that feature (due to a lack of key wetland feature characteristics being present). It was therefore deemed appropriate that based on the on site review, the GRCA would remove inaccuracy from their mapping as no wetland was present. GRCA has since

updated their mapping and the current GRINNS Mapping for the site is shown on Figure 2.

The limits of the wetland vegetation associated with the on site portion of the pond were flagged by Dance Environmental Inc. and confirmed on site by Tony Zammit on September 17, 2018. The wetland limit was surveyed in and was plotted, see Figure 3. This wetland is part of the locally significant Schindelsteddle South Wetland Complex.

4.3 Vegetation

Figure 4 shows the pattern of vegetative cover and agricultural crop cover within the study area. The study area ELC polygons are shown and labelled on Figure 4.

The majority of the site (within the proposed licence boundary) is active farmland, with much of the proposed licence area boundary being against agricultural fencerows with limited tree cover. The remaining areas adjacent to the licence area boundary are woodland edges located to the east and west in the south end of the study area and along with some of the northern licence area boundary.

The majority of offsite habitat is also active farmland with crop fields being present to the north, east, south and west. In 2018 there was one hayfield to the northwest but within 120m of the proposed limit of extraction.

Within the offsite area (lands within 120m) there are woodland communities to the north, as well as in the southern portion there is woodland to the west and east. Within the 120m offsite area there is also a wetland community and a permanent open water pond. Appendix II lists the plant species present in the ELC vegetation units shown on Figure 4.

4.3.1 Vegetation Within the Proposed Licence Area

Annual Row Crops (OAGM1):

The majority of the area within the licence area boundary is in active agriculture and is classified as annual row crops (OAGM1) under the ELC classification system. In 2018 the onsite agricultural fields were planted in Soybean and Corn. Figure 4 shows the areas planted in annual row crops.

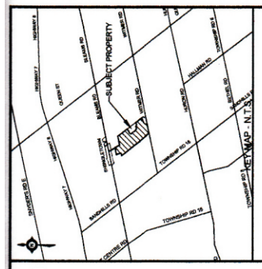
Agricultural Infrastructure (IAG):

A portion of the central part of the southern end of the site is classified as Agricultural Infrastructure as it comprises remnants of the old concrete manure bunkers and concrete pads from old farm buildings/structures which are no longer present on site. As a result of the concrete debris in this area it was not put into active agriculture in 2018 and as a result a variety of weedy groundcover species and others which are primary establishing species were recorded in this ELC polygon. A list of the species identified within this polygon are shown in Appendix II.

HALLMAN PIT

Base map source:
OPERATIONAL PLAN
SHEET 2 OF 7

By IBI
Aug. 20/19



LEGEND

- PROPERTY BOUNDARY
- POST & WIRE FENCE
- PHASING LINES
- LICENSED AREA
- LIMIT OF EXTRACTION
- LIMIT OF 120m SETBACK
- FLAGGED WETLAND BOUNDARY
- 1.5m HIGH T-BAR POSTS
- EXISTING TREELINE
- EXISTING BUILDING
- EXISTING POND
- PHASING NUMBER
- DIRECTION OF EXTRACTION
- ENTRANCE/EXIT
- FARM GATE
- EXISTING ELEVATION NUMBER OF LIFTS FINAL EXTRACTED ELEVATION (376.6 / 2 / 357.0)
- MONITORING WELL/ SURFACE GAUGE (MW1)
- PROPOSED WASH POND
- PROPOSED BERM
- SHINGLETOWN SETTLEMENT AREA (WILMOT O.P.)

NOTE: REFER TO SHEET 3 OF 7 FOR OPERATIONAL NOTES

SITE PLAN OVERRIDES

5.1	No fencing abutting pine plantation as those lands are owned by the licensee and the exterior boundary will be fenced or access is restricted.
5.10.1	No setback abutting pine plantation as those lands are owned by the licensee and the buffer is in place outside the license boundary
	No setback abutting the sugar maple forest in the south-east as those lands are owned by the applicant.

SITE DATA

AREA TO BE LICENSED	57.3 ha
AREA TO BE EXTRACTED	52.3 ha
ANNUAL EXTRACTION	1.5 MTPA
TOTAL LAND PARCEL	68.2 ha

NO.	DATE	BY	DESCRIPTION
1			REVISIONS PRIOR TO APPROVAL

THESE SITE PLANS ARE CERTIFIED BY THE UNDERSIGNED BY THE AUTHORITY OF MINISTERIAL APPROVAL AS SPECIFIED IN THE AGGREGATE RESOURCES ACT SECTION 6 (4) FOR A CLASS A LICENCE CATEGORY 3 PIT.

DATE

30 15 0 25 50 100
1:2500 (m)

IBI GROUP
450 Speedvale Avenue West
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

PART LOT 10 CONCESSION SOUTH OF BLEAM'S ROAD, GEOGRAPHIC TOWNSHIP OF WILMOT
REGIONAL MUNICIPALITY OF WATERLOO

JACKSON HARVEST FARMS LTD.
2879 HERRGOTT ROAD,
ST.CLEMENTS, ON, N0B 2M0

OPERATIONAL PLAN

DESIGNED BY:	JP/MS	SCALE NUMBER:	1:2500
DRAWN BY:	JP/MS	PROJECT NUMBER:	103
CHECKED BY:	JP	SHEET NUMBER:	2 OF 7
DATE	2019-08-20		

REGIONAL ROAD NO. 4
BLEAM'S ROAD
WELMER ROAD
TAGM1
ADDITIONAL LANDS OWNED BY APPLICANT
PROPOSED FARM GATE
FARM ACCESS ONLY
PROPOSED ENTRANCE
BERM 6 H: 4.0m
BERM 7 H: 4.0m
BERM 8 H: 0.5m
BERM 4 H: 4.0m
BERM 5 H: 4.0m
BERM 1 H: 5.0m
BERM 2 H: 5.0m
BERM 3 H: 5.0m
BERM 9 H: 2.0m
120.0
LIMIT OF EXTRACTION
LICENSED BOUNDARY
LIMIT OF EXTRACTION & LICENSED BOUNDARY
WETLAND BOUNDARY AS FLAGGED
SCHNOGELSTEDDLE SOUTH WETLAND COMPLEX
1.5m HIGH T-BAR POSTS
INTERNAL HAUL ROAD
HAUL ROAD
PROPOSED WASH PONDS
DESIGNATED RECYCLING AREA
SCALE-HOUSE WEIGH SCALE
PROPOSED POST AND WIRE FENCE
PROPOSED FARM ACCESS GATE
PROPOSED PIT ENTRANCE & GATE
PROPOSED MIXED DECIDUOUS TREES 1.2m HIGH
DRY-FRESH SUGAR MAPLE HARDWOOD DECIDUOUS FOREST FODM5-9 (A)
DRY-FRESH SUGAR MAPLE HARDWOOD DECIDUOUS FOREST FODM5-9 (B)
R1
R2
R3
R4
Red-osier Dogwood & Cedar plantings
10 Gray Dogwoods & 10 Ninebark to be planted on eastern margin of Berm 3
10m setback between extraction & dripline
Bat box facing west
15m setback
Total of 75 Gray Dogwoods & 55 Ninebark to be planted on outside margins of Berms 5, 6 & 7.
10m setback between dripline & extraction

FIGURE 3.
Operational Plan
Concept & Mitigation
Recommendations.

DANCE ENVIRONMENTAL INC.

DE- 428
Sept. 4, 2019.

LEGEND

- Silt control fence
- Setback of specified width
- Wetland boundary as surveyed and plotted

SHRUBS

- Red-osier Dogwood
- Ninebark
- Eastern White Cedar
- Gray Dogwood
- Bat box
- Berm shrub planting area

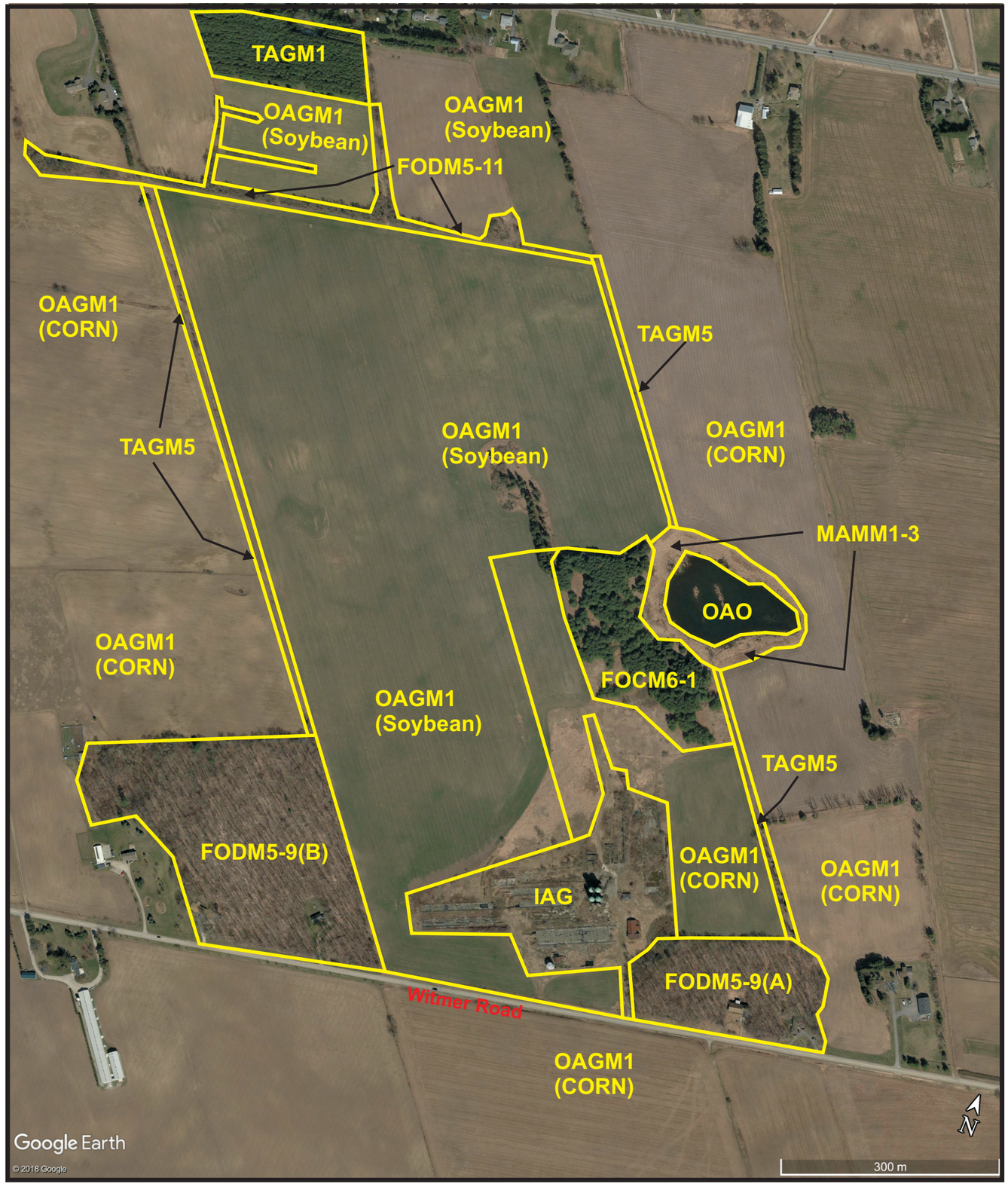


Figure 4. ELC Vegetation Community Polygons, Proposed Hallman Pit, Wilmot.

LEGEND

On Site

ELC Code	Name
OAGM1	Annual Row Crops (2018)
IAG	Agricultural Infrastructure
TAGM5	Fencerow
FODM5-11	Naturalized Deciduous Hedgerow

Off Site

FODM5-9	Dry-Fresh Sugar Maple -Hardwood Deciduous Forest
OAGM1	Annual Row Crops (2018)
FOCM6-1	Dry-Fresh White Pine Naturalized Conifer Plantation
MAMM1-3	Reed-Canary Grass Graminoid Mineral Meadow Marsh
OAO	Open Aquatic
TAGM1	Coniferous Plantation
	Approximate ELC Community Polygon Boundary

DANCE ENVIRONMENTAL INC.

DE-428

September 6, 2019.

Fencerow (TAGM5):
There are three sections along the licence area boundary which have been identified as Fencerow using the ELC classification system. One section of fencerow runs north-south along the majority of the western study area boundary, and two sections of fencerow are located along the eastern licence area boundary and are broken up by the open water pond. This community type is characterized by a narrow band of naturalized vegetation in line with post and wire fence which mark the property boundary. The TAGM5 community is dominated by Awnless Brome, along with abundant Canada Goldenrod, Green Foxtail and Common Ragweed. A list of the species identified within this polygon are shown in Appendix II.

Naturalized Deciduous Hedgerow (FODM5-11):
The Naturalized Deciduous Hedgerow runs east-west along the northern study area boundary and a small section also extends north -south. The FODM5-11 hedgerow is dominated by fast growing deciduous species, with Manitoba Maple being the dominant tree species in the hedgerow. White Ash is also present, particularly in the western portion of the hedgerow, however, most of the White Ash in the canopy were noted to be dead or dying due to the Emerald Ash Borer. Other canopy trees within the hedgerow include Eastern Cottonwood, Black Cherry, Wild Apple, Large-toothed Aspen and White Mulberry. The understory of the hedgerow is scattered with Manitoba Maple, Common Buckthorn, White Mulberry etc., many of which were covered with Woodbine. A full list of the species identified within this polygon are shown in Appendix II.

4.3.2 Vegetation Outside of Licence Area but Within 120m

Dry-Fresh White Pine Naturalized Conifer Plantation (FOCM6-1):
This treed ELC vegetation community is located centrally off site along the eastern edge of the licence area. This community is adjacent to annual row crop fields to the north, west and south and downslope to the east is the MAMM1-3 community. The FOCM6-1 community is dominated by White Pine in the canopy with the occasional White Spruce, and in the understory Common Buckthorn, White Ash, White Mulberry etc. have established naturally. The conifer plantation exhibited a rather limited ground layer with many of the species present being non-native species including Garlic Mustard, Dog-Strangling Vine, European Stinging Nettle, and Crown Vetch. A list of the species identified within this polygon are shown in Appendix II.

Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3):
This ELC vegetation community is located centrally along the eastern edge of the licence area boundary, offsite and downslope of the FOCM6-1 community surrounds the open water pond to the east.
Reed-Canary Grass dominates this ground layer community and comprises of a variety of wetland indicator plant species which are tolerant to temporary or long-term submersion in water. Other abundant ground layer species in this community include Broad-leaved Cattail, Purple-stemmed Aster, Canada Goldenrod, and Boneset. There is also Crack Willow in the canopy and

Red-osier Dogwood is the predominant shrub species scattered occasionally throughout the community. A list of the species identified within this polygon are shown in Appendix II.

Open Water Aquatic (OAO)

There is an open water aquatic community (Pond), located centrally along the eastern study area boundary which is surrounded by Reed-Canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3). This feature is a permanent open water area, which has no inflow or outflow channels.

Dry-Fresh Sugar Maple –Hardwood Deciduous Forest Type (FODM5-9):

This vegetation community type was found offsite in two separate locations, one was adjacent to the southeast corner of the licence area boundary (FODM5-9A). There was once a house located in the center of the woodland, fronting on Witmer Road, but that residence has been removed and an open area of lawn grass in the forest is now all that remains of the house. The second FODM5-9 polygon (FODM5-9B) is located on the southern end of the western licence area boundary. There are two houses located within the southern edge of the woodland which fronts onto Witmer Road. The FODM5-9(B) woodland is designated by the Region as a Core Environmental Feature (Significant Woodland) due to meeting the Region's criterion for woodland size.

Both woodland polygons showed similar characteristics to each other including the herbaceous plant species identified at each location, as well as the tree species within the communities. The canopy of the two woodland communities was dominated by Sugar Maple, with other species being present but to a lesser degree, including American Basswood, Black Walnut, Black Cherry and Bur Oak. The understory of both communities had limited understory growth and the ground layer comprised of a mix of native woodland species such as Wild Ginger, White Trillium, Zig Zag Goldenrod and non-native invasive species such as Herb-Robert, Garlic Mustard and Dame's Rocket. A list of the species identified in this woodland type are shown in Appendix II.

Annual Row Crops (OAGM1):

The majority of the adjacent land use is planted in annual row crops, which in 2018 was predominantly corn. The cropping of the adjacent lands in 2018 is shown on Figure 4.

Coniferous Plantation (TAGM1):

Offsite to the north of the proposed limit of extraction there is a coniferous plantation which is comprised predominantly of White Pine. The ground layer of the plantation was characteristically sparse due to the high acidity of the fallen pine needles. Herbaceous species were therefore present mainly along the plantation edges adjacent to the agricultural fields. Herbaceous species were comprised of weed species such as Celandine, Velvet-leaf, Garlic Mustard, Common Dandelion and Kentucky Blue Grass.

4.3.3 Significance of Plant Species

In the June 1, 2018 response letter from MNRF the Wilmot SAR list was provided, it included three SAR plant species recorded within Wilmot, they included: American Ginseng, Butternut and Green Dragon.

Habitats required by these species are:

(a) for American Ginseng – rich, moist, undisturbed and relatively mature deciduous woods in area of neutral soils (such as over limestone or marble bedrock)

(b) for Butternut – rich moist and well-drained soils often along streams or also on well-drained gravel sites especially those made up of limestone.

(c) for Green Dragon- generally grows in damp deciduous forest along streams.

There isn't anywhere within the study area which would provide the necessary habitat conditions for either American Ginseng or Green Dragon. Neither of these two species were observed within the study area.

There was considered to be potential for Butternut to be present and so all areas of potentially suitable habitat were searched to see if any Butternut were present on site or in the offsite study area in June, July and September. No Butternut were found within the study area during the 2018 surveys. The surveys were completed by a Certified Butternut Health Assessor.

Regionally Significant Plants

A few Eastern Cottonwood (Populus deltoides) seedlings were found on the site. Although this tree is considered to be regionally significant, it is our experience that this species is widespread along the Grand River basin and its tributaries. Similarly White Spruce and Black Walnut are listed at regionally rare but only if they are present naturally and are not planted. The White Spruce on site were located in the plantation ELC community and are therefore not present naturally. Black Walnut is present in many areas of Waterloo region and its presence is not seen as being significant.

No other regionally significant plant species were found to be present on site or in the larger off site study area.

4.4 Wildlife

4.4.1 Birds

The bird species observed on the site and those present in off site locations are listed in Appendix III. Appendix III indicates in which ELC polygon they were observed and in what seasons they were observed (Spring, Breeding Season, and Post-breeding season). Most of the birds observed were common species which are typically present in rural habitats.

The SAR birds known from Wilmot were provided in the MNRF response letter, and indicated 13 different species. The 2018 breeding bird surveys which covered all habitats of the study area, provides suitable reference to confirm whether any of the listed SAR birds for Wilmot were present. Bank Swallow, Barn Swallow, Eastern Wood-Pewee were confirmed by the breeding bird surveys. There was no suitable breeding habitat on site for most of the other birds species on the Wilmot SAR bird list or from the Second OBBA data (see Appendix III).

Review of the bird species confirmed during the breeding bird surveys identified four regionally significant breeding birds species were present in 2018 including: Pied-billed Grebe, Eastern Bluebird, Brown Thrasher and Vesper Sparrow. The proposed setbacks from the wetland and the FOCM6-1 woodland will provide protection for the wetland habitat where the Pied-billed Grebe was found.

The Eastern Bluebird, Brown Thrasher and Vesper Sparrow were all observed along fencerows and the fencerows along the property boundaries are proposed to be retained. Retaining the fencerows will result in continued habitat for these species to be present, and with extraction to be done in phases there will continue to be areas suitable for foraging for all three species for much of the life of the proposed pit. As agricultural cropping is temporarily reduced on the site, there is also potential for increased insect populations due to a reduction in insecticide use, which will provide greater food sources for the three regionally rare birds which are all insectivorous.

Two additional species which are listed as regionally significant breeding birds were observed during the breeding season in 2018 but were only observed flying over the site and no suitable habitat for their breeding was present within the study area, they were Great Blue Heron and Turkey Vulture.

The Barn Swallow which is listed as Threatened on the ESA, was observed foraging over the site during the Spring, breeding season and the post-breeding season. There were no nests of Barn Swallow found on the site during the 2018 breeding season.

A single observation of a Bank Swallow foraging over the onsite crop fields, along with some Barn Swallows, was made during the spring, on May 23, 2018. No Bank Swallows were observed during either of the two breeding bird surveys and no suitable nesting locations for this species were found within the study area.

To confirm whether Common Nighthawk (and Eastern Whip-poor-will which was not on the Wilmot list) was present or absent, crepuscular bird surveys were conducted.

A crepuscular bird survey was conducted on May 29, 2018 during full moon conditions. Weather was favorable for the survey with air temperature at 23^{oC},

cloud cover was 5%, wind was 0, and no precipitation. Four locations were surveyed starting at 20:58 were completed by 22:06. A full moon also occurred in June and a second survey was conducted on June 26, 2018 around the time of the full moon (Temperature =16^{oC}, Wind=2 Beaufort, no precipitation and cloud was 50-80%). On June 26, 2018 the crepuscular survey started at 22:09 and ended at 22:55. No crepuscular birds which are listed as Species at Risk were heard or seen during either the May 29th or the June 26th survey dates.

As per the terms of reference and the requirements as outlined in the Region of Waterloo Greenlands Network Implementation Guide (2016) two evening surveys for owls were completed during suitable weather conditions. One survey was conducted on February 5, 2019 and the other on April 22, 2019. A single Eastern Screech Owl was heard calling from the FODM5-9 woodland in the southeastern corner of the study area during the February 5th survey. No owls were heard on the April 22, 2019 owl survey. It is also of note that Great Horned Owl was observed in Spring and Post-breeding season 2018.

4.4.2 Other Wildlife

Reptiles and amphibians

Based on site conditions three specific surveys were undertaken, they were: snake surveys to identify whether any hibernacula were present on site, turtle count surveys around the offsite wetland and thirdly amphibian call surveys at the offsite wetland to identify breeding amphibians. Otherwise reptiles and amphibians were recorded when observed or evidence of their presence was found incidentally during all site visits.

Searches for snakes around potential locations where hibernacula could exist were undertaken in the Spring when vegetation was limited and snakes would be out sunning after emerging from underground hibernacula. Searches were undertaken on 6 dates during spring 2018 under suitable search conditions (April 22, 30 and May1, 8, 15, and 23, 2018). Searches were focused in the south central portion of the study area where old concrete manure bunkers and farm structures had been, and debris piles in that area were also present.

No snakes were found during any of the six site visits when looking for emerging or sunning snakes. A single Eastern Garter Snake (approximately 40cm long) was observed incidentally in the Reed Canary Meadow adjacent to the on site pond. The Eastern Ribbonsnake was listed on the SAR list for Wilmot, potential habitat is present for this species around the pond area, however, no individuals were observed on any of the survey dates in 2018.

Turtle counts were undertaken in Spring while vegetation was low and turtles would be out sunning in the area of the pond. A central observation point was chosen to scan the pond and it edges with binoculars to count and identify what if any turtles were present. A total of six observation dates between April and May were made (April 22, 30 and May 1, 8, 15, and 23, 2018). Eastern Painted Turtle was observed on 4 of the 6 survey dates with a maximum of 19 individuals

counted on May 1, 2018. By May 23rd the vegetation around the pond had grown up so much that no turtles were able to be seen.

The turtles which were observed comprised of various size classes ranging from large adults to those a few years in age and small individuals (hatchlings from the previous year). Eastern Painted Turtle was the only turtle species observed at the offsite wetland. The Wilmot SAR list from MNRF included Blanding's Turtle and Snapping Turtle. Neither of these species were observed on any of the numerous turtle counts undertaken in 2018, and therefore are not believed to be present.

Confirmation of nesting by Eastern Painted Turtle was made when a nest which was dug up by a raccoon or other mammal species was found on June 26, 2018. The location of the confirmed nest is shown on Figure 1. On July 5, 2018 the field edges, area around the MAMM1-3 community, and roadway where the confirmed turtle nest was found were searched to find any additional nests, but none were found. There are no other nearby open water ponds for Eastern Painted Turtle and it is therefore anticipated that all of the individuals that were recorded overwinter in the pond.

Amphibian surveys were undertaken as per the Marsh Monitoring Program protocol, and surveys were undertaken on April 21, May 8, and May 29, 2018. The April 21, 2018 survey resulted in Spring Peeper being recorded at Call Code level 2(8-10 individuals). The May 8, 2018 survey resulted in Spring Peeper being recorded at Call Code Level 3 (>30 individuals). The May 29, 2018 survey represented the late survey date to capture late season breeding frogs and resulted in Green Frog at Call Code 1, Spring Peeper at Call Code 1, and Grey Treefrog at Call Code 1. Amphibians which were observed on site included Spring Peeper, Green Frog and Grey Treefrog, while off site a Grey Treefrog was heard in the FODM5-9 woodland to the southeast.

The Ontario Herpetofauna Atlas was reviewed for historical records, for the 17NJ30 10x10km square, within the last 20 years (1998 to 2008). Examination of the Atlas data indicated 15 different species with records for the square, with 7 frog species, 2 turtles, 2 snakes, and 4 salamanders being noted. The only provincially listed Species at Risk was Common Snapping Turtle which is listed as Special Concern. No other Species at Risk were noted to be in the Atlas square.

Mammals

Mammals which were observed or any evidence of their presence was recorded during each survey visit. Winter surveys on Feb 19, 2019 and March 6, 2019 allowed for mammal tracks to be observed and identified. A total of 7 mammal species were identified to be present on site including Eastern Cottontail, Eastern Chipmunk, Raccoon, Grey Squirrel, Coyote, Red Fox, and White-tailed Deer. There were 4 mammal species confirmed to be present offsite within 120m of the licence area boundary, they included: Eastern Chipmunk, White-tailed Deer,

Coyote, and Grey Squirrel. The Wilmot SAR list includes four bat species, which may potentially use trees as maternity roosts. None of the woodland communities offsite or adjacent to the study area are proposed for removal and therefore it is not anticipated that these species will be negatively impacted, so no bioacoustical surveys for bats were undertaken.

Winter wildlife surveys were conducted on February 19, 2019 and March 6, 2019, as per the Terms of Reference prepared for the ROW. The 2019 winter wildlife surveys indicated that there were no deer yards present anywhere on site and there were no deer tracks, scat, or evidence of winter deer browse, found within the licence area or offsite within 120m. The winter wildlife surveys resulted in tracks/evidence of Coyote, Eastern Cottontail Rabbit, Gray Squirrel and Red Fox being present within the study area.

The potential for bat habitat within the licenced area and with offsite within120m was assessed during 2018 and 2019 surveys, see discussion in report section 4.12.1 regarding potential for bat maternity colonies.

Insects

A total of 9 butterfly species were observed on site during the 2018 and 2019 surveys and two species were observed offsite. The butterflies observed on site included: Red Admiral, Black Swallowtail, Clouded Sulphur, Common Wood-nymph, Cabbage White, Mourning Cloak, Milbert's Tortoiseshell, Silver-spotted Skipper and Monarch.

The butterflies observed off-site were Cabbage White and Spring Azure. The SAR list for Wilmot includes two butterfly species: Monarch and West Virginia White. The Monarch was confirmed to be present, but no West Virginia White butterflies were observed in 2018. The West Virginia White requires moist deciduous woodlands and the presence of Two-leaved Toothwort, neither of which were found to be present in the on site or off site study area.
The Ontario Butterfly Atlas (OBA 2019) data was reviewed for observations within the 10x10km square, 17MJ30. Examination of the historical data for butterflies within the square showed 13 butterfly species records from the closer vicinity of the proposed Hallman Pit. The Monarch was the only provincially listed species from the historical records for the area.

A variety of *Odonata* (Dragonlies and Damselflies) were observed on site as a result of the permanent wetland located offsite. *Odonta* species which were identified during the 2018 and 2019 surveys include: Green Darner, Black Saddlebags, White-faced Meadowhawk, Eastern Pondhawk, Common Whitetail, Twelve spotted Skimmer, Marsh Bluet, and Common Spreadwing.

The Wilmot SAR list includes the Rusty-patched Bumble Bee, none were noted to be present within the study area during any of the surveys on site.

4.5 Fish Habitat

There is fish habitat in the off site study area due to the open water pond located centrally along the eastern study area boundary. There is no inflow or outflow from the open water pond and it provides permanent year-round aquatic habitat. On May 23, 2019 the open water pond edges were checked for fish species using a dip net and visual observations. No minnows or larger fish species were caught or observed during the nearly 2 hours of dip netting along the pond edges. Despite the negative results on May 23, 2019 it is expected that the pond contains difficult to observe small fish.

The MNRF list for known Species at Risk in Wilmot included two fish species: Black Redhorse and Silver Shiner (both Threatened species). Both of these species require streams with moderate to fast currents, and this habitat is not present on site or within the off site study area. Wavy-rayed Lampmussel was also listed on the Wilmot SAR list but there is no suitable habitat in the study area, since this species requires rivers with steady flow.

4.6 Species at Risk

The 2018 inventory visits revealed the presence of two Threatened swallow species and a species of Special Concern, the Monarch within the proposed licence boundary. Eastern Wood-Pewee (Special Concern) was the only other SAR species found to be present in 2018, but it was present outside of the proposed licence boundary, but within 120m of it (the FODM5-9B woodland).

4.6.1 Habitat of Endangered and Threatened Species

Barn Swallow

No nests were confirmed to be present on the site in 2018. Any potential nest sites would be located in off site barns 120m or more away, and are shown on Figure 1. Category 3 foraging habitat is present on the site as Barn Swallows were observed during Spring and the breeding season foraging over the onsite annual row crop fields.

Bank Swallow

No nests were present on the site as there were no areas of sandy vertical slopes which they require to create their nest burrows in. There are some sand and gravel pits in the vicinity which are more likely to be the locations where they would nest. Bank Swallow was observed on only one date, with one individual foraging over the annual row crop fields in the southern portion of the study site on May 23, 2018. The site at the most (due to only one observation over the study period) comprises of Category 3 foraging habitat for Bank Swallow.

4.6.2 Habitat of Species of Special Concern

Eastern Wood-Pewee

The Eastern Wood-Pewee was recorded on both breeding bird survey visits in 2018 within the FODM5-9 (B) woodland (designated as a Core Environmental Feature by the Region) which is located off site, but adjacent to the proposed pit. On both survey visits the Eastern Wood-Pewee was heard in the southeastern

corner of the woodland near the house in the woods, resulting in confirmed breeding, see Figure 1. No direct impact on the Core Environmental Feature woodland is anticipated, as no trees are proposed to be removed as a result of the proposed aggregate pit. The Level 2 report will indicate proposed setbacks from the Core Environmental Feature, and will consider the mitigation value of the sound berm that is proposed due to the presence of the house in the woodland.

Monarch

Monarch butterflies were observed on site during the 2018 study period in various locations. The Monarch butterfly was seen foraging in openings in the FOCM6-1 community, the TAGM5 fencerows between annual row crop fields, and the MAMM1-3 community. Common Milkweed was present in all three of the communities where the Monarch butterfly was observed in 2018. Monarchs were observed on July 5, Sept 17 and 20, 2018 which was later in the season suggesting they may have been migrants. The woodland edges and fencerows where Common Milkweed and a variety of flowering plants were seen are proposed to be left intact, as setback areas. Some of those areas will in fact be expanded as a result of implementing setbacks around various natural features which are to remain (ie. FOCM6-1, FODM5-9, TAGM5, and the MAMM1-3 communities). This means more potential areas for Milkweed and flowering plants, which are important to the Monarch's life cycle.

4.7 Significant Wetlands

No Provincially Significant Wetlands are present on the site or within 120m. The pond area located along the eastern proposed licence boundary is part of the Schindelsteddle South Wetland Complex, which is locally significant (GRCA 2018). The small portion of the locally significant wetland present in the off site study area, is surrounded by the coniferous plantation community which will remain intact. The coniferous plantation and a recommended buffer around it will provide a vegetated protection zone around the wetland. Details of the recommended buffer from the wetland and coniferous plantation are discussed in the Level 2 report.

The Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update report (CH2MHILL and North-South Environmental Inc. 2008), was reviewed in relation to the proposed undertaking, as 80% of the watershed is located within Wilmot Township. This EIS, therefore, has considered the studies' goals and recommendations and the EIS provides recommendations to help meet these goals to the greatest extent possible. This EIS speaks to the proposed undertakings potential to impact water quantity and quality, how wetlands, woodlands, linkages and wildlife are proposed to be protected, as well as protecting ground water from contamination through implementation of the EIS recommendations. The recommendations and conclusions of the EIS will help to meet the goals and objectives of the Alder Creek Watershed study.

4.8 GRCA Regulated Areas

GRCA staff confirmed in their September 7, 2018 response letter to the request for information from Dance Environmental Inc. that there is regulated area surrounding the pond along the eastern proposed licence boundary. A second location of regulated area and wetland was shown on GRCA GRINS mapping located centrally in the southern end of the study area. During the September 17, 2018 site visit with GRCA staff (Tony Zammit) this area was examined (in 2018 it was corn field) and was determined by GRCA staff to be inaccurately mapped and it would not be considered wetland. The GRCA subsequently updated their mapping to remove wetland and regulated area in this location. Figure 2 in the present document illustrates the current extent of regulated area.

4.9 Significant Woodlands

Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates that there are no Core Environmental Features (Significant Woodlands) within the proposed licence area.

The Dry-Fresh Sugar Maple –Hardwood Deciduous Forest (FODM5-9B) located adjacent to the southwestern study area boundary (within 120m) is considered a Core Environmental Feature (Significant Woodland). The designation of that woodland was confirmed by Tim Van Hinte, from the Region of Waterloo, in his response letter to our background information request. This woodland is considered a significant woodland as a result of it meeting the woodland size criterion, as set out in the Region of Waterloo O.P. (2015). The presence of the Eastern Wood-Pewee in 2018 also contributes to its designation due the presence of a Species at Risk.

A second Dry-Fresh Sugar Maple –Hardwood Deciduous Forest (FODM5-9A) is located adjacent to the southeastern study area boundary, however, it is not designated as a Core Environmental Feature in the Regional O.P. (Map 4 of Waterloo Region O.P., 2015). The southeastern FODM5-9 woodland was not designated a Core Environmental Feature due to the woodland not being large enough to meet the size criterion for designation. The presence of Species at Risk within a woodland can also contribute to a woodland being designated as a Core Environmental Feature in Waterloo Region. The 2018 surveys which were conducted did not result in any Species at Risk being confirmed to be present in the southeastern FODM5-9 (A) woodland. Based on the Region's designation criteria and the results of the 2018 surveys the woodland is not considered a Significant Woodland, nor a Core Environmental Feature.

The Level 2 report will provide recommendations for setbacks from extraction for each of the FODM5-9 woodlands.

4.10 Significant Valleylands

The Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) confirms that there are no significant valleylands within the study area.

4.11 Greenlands Network

The Region of Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates that none of the following systems or features are present within the study area: Significant Valley or Environmentally Sensitive Landscape. Within 120m of the present study area boundary, however, the Region Waterloo mapping of the Greenlands Network (Map 4 of Waterloo Region O.P., 2015) indicates there is Core Environmental Features, namely the FODM5-9 (B) woodland located adjacent to the site to the west, and is considered to be a Significant Woodland. The significant woodland is not owned by Jackson Harvest Farms, and as such there is no intention to enter or disturb the significant woodland due to the proposed undertaking. With the FODM5-9 (B) woodland being a significant environmental feature, buffers will be recommended to be implemented to reduce any potential impacts. Also due to the proximity of a residential dwelling within the significant woodland a berm will be required to be put in place between the woodland and the proposed extraction boundary. Details on recommendations for buffers and berms will be provided in the Level 2 report.

4.12 Significant Wildlife Habitat

A review of existing data was used along with site investigations to determine if Significant Wildlife Habitat exists in the study area. Analysis was completed using the Significant Wildlife Habitat Technical Guide (SWHTG) created by ONMR (2000).

Wildlife habitat was investigated in the study area to identify candidate Significant Wildlife Habitat (SWH). The ELC community mapping was used as the basis for determining the presence (or absence) of candidate SWH.

In accordance with the SWHTG (2000) the Ecoregion 6E (OMNRF 2015) Significant Wildlife Habitat Criteria Schedules were used to guide the SWH evaluation.

4.12.1 Seasonal Concentration Areas of Animals

- Waterfowl Stopover and Staging Areas (Terrestrial and Aquatic) and Shorebird Migrating Stopover Area: the required ELC Ecosites are not present, so no candidate nor confirmed SWH. Waterfowl were observed on the pond but not in the numbers of individuals required.

- Raptor Wintering Area: the required ELC Ecosites are not present, so no candidate nor confirmed SWH.

- Bat Hibernacula: no caves, mine shafts, underground foundations or Karst, no candidate nor confirmed SWH.

- Bat Maternity Colonies: There are no woodlands within the site (licence area) boundary. A section of one hedgerow in the north end of the site is proposed to be removed which contains some mature Manitoba Maples a few Black Cherry (not preferred bat roost trees). There are approximately 22 standing dead White Ash trees at the west end of the hedgerow which is not proposed for removal, and which provides the best potential habitat for bats. Other recommendations such as timing of removal of the middle part of the hedgerow, placement of bat boxes, timing of season to build proposed berms are all anticipated to address the loss of the small area of potential bat roost habitat. Through the use of the proposed mitigation measures it is anticipated that no significant impacts on any low potential maternity colony trees will occur during the maternity season for bats.

- Turtle Wintering Areas: the required ELC Ecosite is present, the pond is permanent and suitable for overwintering so there is candidate SWH. With 19 Eastern Painted Turtles being observed at one time, it is logical that there is confirmed SWH for wintering turtles.

- Reptile Hibernaculum: candidate SWH was found in the form of old concrete foundations and debris piles. Detailed searches for congregations of snakes on sunny days in Spring 2018 did not confirm the presence of a hibernaculum – no snakes were found, therefore there is no confirmed SWH.

- Colonially – Nesting Bird Breeding Habitat (Bank and Cliff): A single Bank Swallow was observed in Spring 2018,and since no vertically sloped banks for nesting habitat exist on site or within 120m candidate SWH is not present.

- Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs): none of the specified Ecosite types are present, so there is no candidate SWH.

- Colonially – Nesting Bird Breeding Habitat (Ground): no rocky island or peninsula or watercourses nor field or shrub habitat is present, so there is no candidate SWH.

- Migratory Butterfly Stopover Areas: There is forest on site (FOCM6-1) but no field habitats, and the site is not within 5km of Lake Ontario; therefore there is no candidate SWH nor confirmed SWH.

- Landbird Migratory Stopover Areas: The study site is not near Lake Ontario and there are no woodlots >10ha, so no candidate SWH or confirmed SWH.

- Deer Yarding and Deer Winter Congregation Areas: The study site contains a small area of ELC community type FOC (significantly less than the >100ha size that the SWTHTG indicates is prefered by yarding deer), however, the presence of forest means there is candidate SWH. There is no confirmed SWH as OMNRF did not identify any deer yards being present in their response to the request for information, the snow depths required as per the SWHTG outlines would not be met and the FOC community is well below 100ha in size. During the winter wildlife surveys no signs such as heavy deer browse, scat, deer bedding, or observations of numerous individuals were made. No confirmed SWH.

4.12.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

4.12.2.1 Rare Vegetation Communities

All of the rare community types were considered, namely: cliffs and talus slopes, sand barren, alvar, old growth forest, savannah, tallgrass prairie, and other rare vegetation communities. None of the pertinent ELC Ecosite types were found on the site or within 120m. No candidate or confirmed SWH is present in the study area for rare vegetation communities.

4.12.2.2 Specialized Habitat for Wildlife

All of the specialized habitat for types were considered, namely: waterfowl nesting area; Bald Eagle and Osprey nesting, foraging and perching habitat; woodland raptor nesting habitat; turtle nesting areas; seeps and springs; amphibian breeding habitat – woodland and wetlands; and area – sensitive bird breeding habitat.

Candidate SWH is present on site for waterfowl nesting area as MAM2 habitat surrounds the pond, however, it is not 120m wide. Mallard Duck is the only species listed in the SWHTG, which was observed but based on the breeding bird surveys undertaken and the number of Mallards pairs breeding (2) means that there is no confirmed SWH.

Candidate SWH was confirmed for turtle nesting area as a Painted Turtle nest that was dug up by a raccoon or other mammal was found on an old sand/gravel farm lane on site (within 100m from the on site pond). Searches for turtle nests did not result in 5 or more nesting Painted Turtles being found in 2018, therefore, there is no confirmed SWH for turtle nesting in the study area.

Candidate SWH was found for Amphibian Breeding Habitat (Woodland) due to the FOC community (FOCM6-1) along with the off site pond being an appropriate size and permanent. Monitoring in 2018 using the Marsh Monitoring Program protocol did not result in two frog species on the list being heard at Call Level Code 3, and no other criteria were met. Therefore, there is no confirmed SWH for Amphibian Breeding Habitat (Woodland).

Candidate SWH was confirmed for Amphibian Breeding habitat (wetland) due to the presence of ELC ecosite class OAO (off site pond) but the pond has limited shrub and log structure present. None of the criteria to confirm SWH for Amphibian Breeding habitat (Wetland) were met, therefore there is not confirmed SWH for this specialized habitat type.

None of the pertinent ELC Ecosites types were found on the site or within 120m for all other specialized habitat for wildlife types. No candidate or confirmed SWH is present in the study area for all of the other specialized habitat for wildlife types.

4.12.3 Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)

- Marsh Breeding Bird Habitat: There is candidate SWH due to the ELC Ecosite MAM2 being present (MAMM1-3) and Pied-billed Grebe was confirmed breeding in the pond/wetland communities. None of the confirmed SWH criteria were met. Therefore there is no confirmed SWH for Marsh Breeding Bird Habitat.

- Open Country Bird Breeding Habitat: no large grasslands are present in the study area; off site occurrences of Savannah Sparrow and Vesper Sparrow during the breeding season were along Fencerows. There is no candidate SWH as no ELC community types or habitat criteria are present. There is therefore no candidate or confirmed SWH for this factor.

- Shrub/Early Successional Bird Breeding Habitat: no large shrub areas present and only one of the indicator or common species confirmed nesting (Brown Thrasher), so evaluation of needed criteria are not met for candidate or confirmed SWH for this factor.

- Terrestrial Crayfish: There is MAM2 habitat within the study area (MAMM1-3) but no crayfish burrows or chimneys were observed on any of the numerous site visits which occurred in 2018, therefore, there is candidate SWH but there is not confirmed SWH for terrestrial crayfish.

- Special Concern and Rare Wildlife Species:
  The 2018 surveys resulted in two special concern species being confirmed to be present on site or adjacent to the study area, they include: Eastern Wood-Pewee and Monarch.

  Eastern Wood-Pewee was confirmed to be present within the off site FODM5-9 (B) woodland in the southern part of the western study area boundary. Breeding bird surveys confirmed there was a single pair of this species, breeding within the woodland, therefore, there is confirmed SWH for Eastern Wood-Pewee as an important life stage (nesting) for this species was confirmed. This area of SWH is shown on Figure 1.

Only adult Monarch butterflies were observed foraging in openings in the FOCM6-1 community, the TAGM3 fencerows between annual row crop fields, and mainly in the MAMM1-3 community. Common Milkweed was present only in small numbers in the FOCM6-1 and TAGM3 communities where the Monarch was observed. The MAMM1-3 community contains the contiguous habitat and amount of Common Milkweed and flowering plants which Monarchs were seen using (approximately half of this habitat is located on the adjacent property). The MAMM1-3 vegetation community is therefore considered the confirmed SWH for Monarch, see Figure 1.

4.12.4 Animal Movement Corridors

Amphibian breeding habitat was present within the study area but it was determined not to be SWH, based on the criteria outlined in the SWHTG. No deer wintering habitat was found to be present within the study area so there is no candidate or confirmed SWH for deer movement corridors in the study area.

SUMMARY

Review of the SWHTG criteria schedules identified one seasonal concentration area for animals was present within the study area, wintering turtle area. The wintering turtle area is restricted to the pond located centrally along the eastern study area boundary. The only area for the Painted Turtles which live in the pond to overwinter is the bottom of the pond itself as it is an isolated pond with no inlets or outlets.

4.13 Areas of Natural or Scientific Interest

No Areas of Natural or Scientific Interest (ANSI) are present within the proposed licence area or within 120m of it.

4.14 Nuisance/Problem species

Phragmites:

A small patch of Phragmites was found to be present in the south central portion of the study site at the base of the slope for the laneway in the middle of the site that leads towards the coniferous plantation. Phragmites in such a location is suggestive of it being the non-native species which can be highly invasive. It is believed that the Phragmites is there because its at the base of a slope where surface flow may accumulate periodically. When site alteration occurs due to extraction the area with Phragmites would be removed along with the laneway with is >2m in height above the adjacent fields.

Garlic Mustard:

Garlic mustard is a non-native herbaceous plant species which is highly invasive and was found in the naturalized conifer plantation on site, within the hedgerows which border the proposed extraction area and both of the off site Sugar Maple – Hardwood deciduous forests (FODM5-9) including the significant woodland to the southwest. Garlic Mustard was found in these locations but was not so abundant that it was the predominant ground layer species in those ELC communities.

4.15 Impacts of Previous Development or Site Alterations

The site is currently in agricultural use, as it has been for decades. Unused sites and manure pits have been removed over the past few years as mandated by the Township for safety reason.

These minor site alterations have not impacted the significant environmental features in the study area.

4.16 Anticipated Direct and Indirect Impacts

The details of the impact assessment are contained in the Level 2 Study report section, Chapter 7.0.

5.0 CONCLUSIONS OF LEVEL1 STUDY

Natural Environment Level 1 elements that have been confirmed on the site or within 120m are:

- Habitat of Endangered or Threatened Species –Category 3 habitat for Barn Swallow and Bank Swallow;
- Fish Habitat;
- Seasonal Concentration Area for Animals- turtle wintering area (Midland Painted Turtle);
- Special Concern Species –Eastern Wood-Pewee and Monarch; and
- Within 120m of the site there is a Core Environmental Feature, namely Significant Woodland (FODM5-9 (B) community adjacent to the southwestern study area boundary).

6.0 LEVEL 2 STUDY

A Level 2 impact analysis is required by the Aggregate Resources Act if any of the Level 1 features are present on or within 120m of the study site.

The impact assessment will also address features of interest to the Region of Waterloo and EEAC namely:

(1) wetland and pond feature;
(2) upland woodland located in the southeastern portion of the study area; and
(3) regionally significant breeding birds.

6.1 Proposed Site Alterations

As shown on Figure 3, aggregate will be extracted from an area of 52.3ha, during 3 phases. The annual extraction limit will be 750,000 tonnes.

Topsoil will be scrapped from the surface of each phase in sequence and it will be stored, for use during progressive rehabilitation.

There will be a wash plant which will consume approximately 89L of water per tonne of aggregate that is washed. The wash water ponds will be internal to the pit with no flow of water off site.

The Consulting Hydrologist has completed an analysis of the wash water use impact on the Regional Middle Nith River Groundwater Assessment area. HESL (2019) has concluded that the proposed wash water use for the Hallman Pit will not change the low stress level which currently exists for the Middle Nith River.

Noise berms are required in several locations, see Figure 4. These berms will be placed outside of setbacks from woodland.

The Consulting Hydrogeologist for this application has addressed equipment fueling and maintenance in the Spills Mitigation and Contingency Plan that is part of the Hydrogeological Evaluation (Harden Environment Services Limited 2009).

Pit phasing and final grading has been designed to ensure that there is not a reduction in volumes of water recharging the wetland/pond feature located along the central eastern margin of the study area.

The HESL (2019) report describes this grading and the predicted results as follows: "There is a "hinge" line along the final pit floor. All lands north of the "hinge" line will drain towards the on-site wetland, thus maintaining its surface water catchment area. The slope is somewhat less, thus promoting infiltration in the lands upgradient of the pond.

It is predicted that infiltration at the site will be greater than presently occurs, thereby maintaining the water table position in the vicinity of the wetland. There is a small potential increase in runoff to the wetland, however, no change in the hydroperiod of the wetland is anticipated."

In order to monitor water levels during the site development HESL (2019) has recommended that hourly water levels be recorded at MW1 and SG1. These two monitoring locations are located near the wetland/pond feature.

All woodlands present on site and around the site margins will be retained. Setbacks from the driplines of these woodlands are addressed on a case by case basis in the Impact Assessment section of this report.

Routine dust control operations in the pit should protect vegetation and wildlife from dust imparts.

6.2 Mitigation

The following recommendations are made which will contribute to minimizing the potential for impact on the natural environment.

Mitigation recommendations are as follows:

1. Clearing of any vegetation within the limit of extraction should occur between September 1 and April 15 to prevent any destruction of birds, eggs or nests.

2. Effective dust control should be maintained along the access road and in the pit so that dust does not impact adjacent vegetation and wildlife.

3. Adequate undisturbed setbacks should be established between the limit of extraction and the Level 1 features. Rationale for setback widths, locations, management and maintenance should be determined through the impact assessment process, report section 6.2.

4. Setback areas should be allowed to naturalize to wild vegetation cover, be seeded to a grass/legume mix or planted with shrubs, as specified.

5. Progressive rehabilitation should be undertaken.

6. Equipment fueling, maintenance and fuel storage should be located on the portion of the site recommended by the hydrogeologist, away from the wetland/pond feature.

7. Extraction should be kept 1.5m above the shallow ground water elevation so that there are no impacts on the wetland/pond feature.

8. Silt control fence should be installed to protect the wetland/pond to the east. See Figure 3 for where conceptually silt fence should be installed.

9. The limits of extraction should be fenced with post and wire fencing or other posts to prevent equipment from impacting the significant natural features.

10. If Bank Swallows begin to nest in the new pit margins, pertinent regulatory requirements should be followed to avoid impacts on this species.

7.0 IMPACT ASSESSMENT

Each Level 1 feature and other regionally significant features are assessed for potential impact, taking into account the mitigation recommended in report section 6.1.

7.1 Habitat of Threatened and Endangered Species

A. Bank Swallow

A single Bank Swallow was seen foraging over the proposed extraction area on a single date, May 23, 2018. No nesting sites are present on the site where flat farmland is present. No June or July breeding season occurrences were observed so there probably is no nesting of this species within 120m.

A small portion of the foraging area of Bank Swallows would be disturbed temporarily during extraction, but would be replaced as the lands are progressively rehabilitated to agriculture.

If Bank Swallows begin to nest in the new pit, pertinent regulations at the time will be followed to avoid impacts on nesting Bank Swallows.

In our opinion the proposed extraction will not negatively impact Bank Swallows.

B. Barn Swallow

During the breeding season and post-breeding Barn Swallows were observed foraging over the proposed extraction area. There were no Barn Swallow nests on the site, nor immediately adjacent.

Figure 1 shows where off site barns and sheds are located relative to the study area. All of these barns are more than 120m away from proposed extraction. This means that the present study site is a Habitat Category 3 area: habitat used for rearing, feeding and resting.

The Barn Swallows present in the study area currently contend with agricultural activity. It is our opinion that the undertaking will not negatively impact foraging Barn Swallows.

7.2 Fish Habitat

The pond located along the eastern central margin of the off site study area is permanent and has wetland and aquatic vegetative cover present. It is reasonable to assume that sticklebacks and minnows are present in this water body.

The extent of wetland and aquatic vegetation present will be protected by the presence of a coniferous plantation growing between the wetland/ pond and the eastern extent of the extraction. Extraction will be 60m or more away from the closest margin of the pond.

Water quality in the pond will be protected by silt control fence, an earth berm, and the wetland vegetation fringe would function to filter any silty runoff.

The hydrogeological study has predicted that water quality will not decline but rather the volume of surface water input reaching the wetland/pond will increase by approximately 4.4 %. This will have a positive impact by potentially increasing the areal extent of habitat.

Based on the foregoing it is concluded that there will be no negative impacts of fish habitat and that the aggregate operation may impact fish habitat positively.

7.3 Turtle Wintering Habitat

It is expected that the pond located along the eastern central margin of the off site study area provides wintering habitat for the Midland Painted Turtle population that is present.

As was described in 7.2 (the fish habitat impact analysis) the quality and quantity of water in the pond is protected, so no negative impacts on turtle wintering habitat are expected.

7.4 Special Concern Species

7.4.1 Eastern Wood-Pewee

This species was heard calling in the off site southwestern woodland during both 2018 breeding bird inventory visits.

Figure 1 shows the location and extent of the inferred territory of the Eastern Wood-Pewee present in the off site southwestern woodland. The habitat of the entire woodland will be protected by the perimeter fence placed around the pit. A 10m wide extraction setback from the southeastern edge of the woodland will result in a 65m± setback between extraction and the eastern margin of the wood-Pewee inferred territory.

A sound berm which will be constructed to the east of the woodland margin will function to reduce extraction noise within the FODM5-9 (B) woodland. This berm will be constructed between September 1 and April 15, outside the of the breeding bird season. The sound berm should mitigate any potential for noise impacts on the Eastern Wood-Pewee and other woodland nesting birds.

Once extraction proceeds below grade any noise and motion effects would be reduced considerably.

The aggregate pit is not expected to have a negative impact on the use of the FODM5-9 (B) woodland by breeding Eastern Wood-Pewees.

7.4.2 Monarch

Adult Monarchs were present in at least 3 of the wild vegetation polygons within the study area: FOCM6-1, TAGM5, MAMM1-3. These areas are woodland edges and site margin fencerows. These habitats will be protected by setbacks from the property boundary and setbacks from woodlands. Some of the area within these setbacks is currently in row crop production. Naturalization of the entire setback area will increase the area available for Common Milkweed and nectar plant growth, thus increasing the area of Monarch habitat around the margins.

Silt fence will protect some of these new wild vegetation patches from machinery intrusion and siltation, see Figure 3. This figure also shows where perimeter fencing and other fence posts will be placed whi will protect wild vegetation patches.

The increase in habitat for Common Milkweed and other flowering plants should be a positive benefit to Monarch populations in the study area.

7.5 Significant Woodland

Figure 1 shows the location of the off site woodland which is adjacent to the southwestern corner of the proposed licence. This woodland meets the size criterion for designation as a Significant Woodland.

Figure 3, which is based on the Operational Plan, shows a setback between extraction and the dripline of the Significant Woodland.

Recommendations to protect the eastern margin of this woodland are as follows:

(a) the western margin of the noise berm should be 10m or more from the dripline of the woodland;

(b) before the berm is constructed the paige wire fence which marks the licence boundary in this location should be installed, since the existing boundary fence is in disrepair. This paige wire fence will protect the core of the woodland from machinery intrusion;

(c) before the berm is constructed a silt fence should be installed 10m from the dripline of the Significant Woodland – this silt fence would mark the western margin of the noise berm and will prevent sediment from washing into the woodland;

(d) this silt fence should be inspected at weekly intervals and should be repaired as soon as is practical, as needed, until such time as the ground cover vegetation is established;

(e) the noise berm should be vegetated with a legume/grass mix to stabilize the berm surface;

(f) extraction should occur no closer than 10m from the eastern dripline of the Significant Woodland; and

(g) dust control should occur on a regular, on-going basis to ensure that dust does not leave the pit and accumulate in the Significant Woodland.

If all of the foregoing recommendations are implemented successfully no impact is expected on the features and functions of the Significant Woodland which is a Core Environmental Feature of the Greenlands Network.

7.6 Meadow Marsh and Pond

This wetland and pond are located centrally off site to the east of the proposed licence area. Figure 3 shows the plotted margin of the staked wetland edge.

Figure 3 shows mitigation elements recommended to protect the wetland and pond, namely:

(a) the entire conifer plantation, which is located upslope of the wetland and pond, is to be retained and extraction is to remain 15m away from the edge of the plantation;

(b) T-bar fence posts will define the licence boundary and extraction limit 15m away from the conifer plantation.

(c) silt fence is to be installed along the outside of the fence posts before any topsoil stripping occurs;

(d) the silt fence is to be inspected and maintained for one year and thereafter until such time as the ground cover vegetation is established;

(e) routine dust control is to occur so that the plantation, wetland vegetation and pond are not impacted by dust;

(f) as shown on Figure 3, three Red-osier Dogwoods and 5 Eastern White Cedars will be planted to provide a visual barrier between the pit and the pond where there is currently a gap in vegetation between the pond edge and the extraction, these shrubs should be 1m tall when planted; and

(g) a 0.5m high earthen berm is to be constructed to the north of the northwestern corner of the pond to intercept any runoff and to filter runoff before it flows towards the pond – this berm should be seeded with a grass – legume mix.

The hydrogeologist has predicted that there will not be any negative impacts from the aggregate operation on the surface water nor shallow groundwater quality and water quantity associated with the wetland and pond (HESL 2019).

If all of the foregoing recommendations are successfully implemented no impact is expected to the features and functions of the Meadow Marsh and pond complex.

7.7 Southeastern Woodland (FODM5-9 (A))

The upland deciduous woodland (FODM5-9 (A)) that is located off site and adjacent to the southeastern corner of the proposed licence boundary is not a Significant Woodland, however, we have included this feature in the impact analysis.

As can be seen from Figure 3 the woodland will be protected from impact by a paige wire fence along the licence boundary placed 15m from the dripline of the woodland.

A noise berm located to the north of the woodland within the licenced area would function to minimize the impact for noise and motion impacts on wildlife within the woodland.

Figure 3 shows a number of mitigation components that are recommended in this area:

(a) silt fence should be placed along the southern margin of the berm to prevent sediment transport from the berm toward the woodland;

(b) it is recommended that the 15m setback between the woodland and the licence boundary be allowed to naturalize – woodland herbs, shrubs and trees will quickly colonize this area;

(c) the berm should be planted with a legume/grass mix to prevent erosion of the berm surface;

(d) routine dust control is to occur so that the woodland is not impacted by dust; and

(e) vegetation in the existing hedgerow which connects this woodland to the marsh/pond to the north will remain along the property boundary so that this corridor is maintained.

If all of the foregoing recommendations are implemented successfully no impact is expected on this woodland.

7.8 Regionally Significant Bird Breeding Habitat

Four Regionally Significant bird species were encountered during breeding season inventories. Each species is addressed in the present impact assessment.

Pied-billed Grebe

A single adult was present from late Spring and during the 2018 breeding season. It was heard calling and seen swimming on the pond located in the central, eastern margin area. Although neither a pair nor young were seen it is probable that nesting occurred here.

This species' habitat is confined to the wetland/pond area, with no specific expected use of the adjacent upland buffer area nor the site lands.

In order to minimize the potential for motion, noise and sedimentation impacts on the Pied-billed Grebe habitat the following mitigation measures are recommended:

(a) a 50m wide undisturbed wild vegetation buffer will separate the extraction limit from the closest margin of the pond habitat;

(b) paige wire fence and/or fence posts and silt control fence will be placed at the limit of extraction to prevent machinery and sedimentation damage to the conifer plantation and other buffer vegetation;

(c) a 0.5m high earth berm will be constructed to the north of the northwestern corner of the pond to intercept runoff and to filter runoff before it flows toward the pond;

(d) as described in 7.6, above, dogwoods and cedars will be planted between the margin of the conifer plantation and the eastern property boundary; and

(e) the conifer plantation, wetland, pond and associated buffer lands should be zoned Open Space Z.11.

The hydrogeologist has predicted that there will be no negative impact on the surface water/groundwater system of the wetland/pond. With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to Pied-billed Grebe habitat nor to the population of this species at this off site location.

Eastern Bluebird, Brown Thrasher and Vesper Sparrow

These three Regionally Significant breeding birds were observed along the fencerow at the eastern property boundary, east of where the wash ponds and a noise berm are proposed. A Vesper Sparrow was present on both June 5 and 22, which suggests that a breeding territory was present.

The Eastern Bluebird and Brown Thrasher were both present only on June 5 but not on June 22, so, a breeding territory may not have been present. Also, Eastern Bluebird breeding is only considered significant when a natural cavity is being used, this was not observed. We are aware of nest boxes along the southern margin of Witmer Road, approximately 340m away. It may have been the case that the Bluebird observed, nested off site in a box along Witmer Road, if so, this would not be a breeding of Regional Significance.

Noise berms are proposed across the entire northern portion of the Phase 2 and 3 extraction areas. These berms are to be built adjacent to existing vegetated hedgerows, see FODM5-11 on Figure 3. Based on existing habitat conditions these hedgerows may provide cover and/or nesting sites for shrub nesting species.

In order to enhance habitat for the 3 Regionally Significant grassland/shrub habitat breeding bird species the following recommendations are made:

(a) construction of the noise berms located east of the wash ponds and in the northern sector of the pit should occur between September 1 and April 15 to avoid impacts on nesting birds;

(b) silt fence will be installed along the outer margins of the berm footprints before berm construction begins, so that adjacent natural features including the fencerow vegetation are protected from sedimentation;

(c) the berms will be seeded with a grass/legume mix to stabilize the berm surface against erosion; and

(d) Gray Dogwoods and Ninebark shrubs will be planted in clumps on 3m centres along the eastern half of Noise Berm 3, which has a north-south axis, to the east of the wash ponds. Similarly, Gray Dogwood and Ninebark shrubs should be planted in clumps on 3m centres along the outside slopes of Noise Berms 5, 6 and 7.

    Numbers of shrubs to be planted are shown on Figure 3. These shrubs will provide habitat for the 3 Regionally Significant breeding bird species and will reinforce and enhance the fencerow habitat and north-south/east-west linkages.

With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to grassland/shrub habitat nesting birds.

7.9 Regionally Significant Plant Species

A few Eastern Cottonwood seedlings are found scattered around the site. Several would be preserved by the setbacks from fencerows and the berms and retained fencerows will provide habitat for Eastern Cottonwood during the life of the pit.

The White Spruce present in the study area have been planted and will be protected by setbacks and fencing to be placed around the margins of the conifer plantation.

Black Walnut is widespread in the Region and in our opinion should not be considered to be a Regionally Significant species. The retained fencerows and the two upland deciduous forest polygons will protect most specimens of Black Walnut that are present in the study area.

Mitigation to protect certain fencerows, hedgerows and both upland deciduous forest blocks will provide habitat for specimens of all three Regionally Significant tree species that have been identified in the study area.

7.10 Possible Bat Habitat Trees

As noted in report section 4.12.2.1, a section of one hedgerow at the north end of the site is proposed for removal to accommodate noise berm construction and some Phase 3 extraction. The trees in this hedgerow were checked for potential as bat roost maternity colony habitat. The trees present are primarily Manitoba Maple, with a few scattered Black Cherry. No large diameter hollow trees were seen.

In order to minimize the potential for negative impact from removing this hedgerow and building a noise berm near other northern hedgerow areas (Berms 4, 5, 6 and 7) the following recommendations are made:

(1) Removal of any hedgerow trees and building of any sound berm 4, 5, 6, and 7 sections adjacent to hedgerows will occur between September 1 and April 15;

(2) Two bat boxes will be erected on the western margins of the conifer plantation, as shown on Figure 3.

With the foregoing recommendations successfully implemented we do not expect any negative impacts to occur to any bat populations that may be present.

7.11 GRCA Regulated Area

The key natural environment elements of the wetland/pond feature which the Regulated Area is meant to preserve are protected from pit activities by the following:

(a) an undisturbed setback of 50m or more from the pond margin and 30m from the flagged wetland;

(b) 1.5m T-bar posts and silt fence;

(c) new shrub plantings;

(d) extraction 1.5m or more above the water table to any existing groundwater contributions;

(e) Open Space Z.11 zoning on the buffer/wetland/pond lands for long-term protection of the area; and

(f) a 0.5m high Berm 8.

With the foregoing mitigation measures successfully implemented we do not expect any negative impacts to the wetland/pond feature within the Regulated Area.

8.0 OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT, RESTORATION, LONG TERM CONSERVATION OF ECOLOGICAL LINKAGES AND ENVIRONMENTAL FEATURES.

8.1 Ecological Enhancement

During the life of the pit new setbacks from woodland and some hedgerows present in the study area will be established on lands which currently have intensive row crop agriculture occurring. The cessation of tillage and chemical spraying on the setbacks will be an improvement over current conditions. In addition, naturalization of some setbacks, grass/legume plantings on berms and new shrub plantings on some berms will enhance conditions for grassland and shrub habitat bird species and will also enhance conditions for insect pollinators.

8.2 Restoration

Post-extraction, the lands will be returned to agriculture, so much of the top soil stored in the noise berms will be placed on the pit floor to re-create a substrate for farming. The berm margins along the outer edges of the licence could be left intact.

The setbacks along the outer margins of the former pit could be left in the naturalized condition or in the grass-legume mix that was planted on any berm margins that are left intact.

8.3 Long Term Conservation of Ecological Linkages and Environmental Features

8.3.1 Ecological Linkages

The key existing linkages are the fence rows/hedgerows which run north-south along both sides of the proposed pit. Also the east-west hedgerow present in the northern sector of the licence area connects to the two north-south pit margin linkages.

All of these linkages will benefit from naturalized site margin setbacks and/or berm plantings.

These new vegetated areas are expected to preserve and/or add to the width of the linkage polygons from the time of pit establishment onward.

8.3.2 Environmental Features

The two off site woodlands, the conifer plantation and the wetland/pond complex are the key environmental features.

The cessation of intensive row cropping and establishment of naturalized and/or planted grass/legume/shrub berms and setbacks will be a benefit during the life of the pit and into the more distant future, when these areas will probably remain untilled because of the topography of the rehabilitated agricultural lands.

In the case of the conifer plantation, the wetland/pond and adjacent buffers, these will be protected by the Open Space Z.11 zoning.

8.4 Ecologically Appropriate Boundary of the Significant Woodland

We recommend that the eastern dripline of the woodland be considered the boundary of the significant woodland adjacent to the proposed pit.

This recommendation is based on the following considerations:

1) The eastern drip line falls within lands that the proponent owns;
2) The edge is obvious and clearly defined because agricultural cropping is present up to, and along most of the interface, beneath the drip line;
3) The dripline is the functional outer edge of the woodland vegetation and the associated wildlife habitat; and
4) Given the flat topography and soils present there are no significant hydrologic contributions to the woodland from outside the drip line.

8.5 Delineation and Design of a Suitable Buffer Between the Significant Woodland and the Proposed Aggregate Operation

We recommend that a 10m wide undisturbed, ungraded buffer be established to the eastern margin of the drip line of the Regionally Significant Woodland. This width is consistent with the GNIG (2016).

We recommend that once the NETR/EIS report is accepted by all of the pertinent agencies, Dance Environmental Inc. staff should flag or stake the edge of the drip line and this demarcation should be checked in the field by Region of Waterloo staff. The final placement of the drip line that is agreed upon in the field should be surveyed by a professional third party and this line should be plotted. The plotted line will be circulated to the Regional staff person who checked the line in the field. Following agreement on the plotted drip line it should be drafted onto the Operational Plan by IBI.

Other elements of the buffer design include the following implementation recommendations:

a) Before any earthmoving occurs adjacent to the eastern margin of the buffer, silt control fence should be installed, it should be inspected at weekly intervals and repaired as soon as it is practical if repairs are necessary;
b) The 10m wide buffer should be allowed to naturalize with wild species which invade it from the Significant Woodland.
c) The closest toe of the noise berm should be located east of the silt fence, and as berm construction occurs the silt fence inspections and repairs should continue.
d) The noise berm should be seeded with a grass/legume restoration mix as soon as is practical, the germination of the seeding should be monitored and any follow up action required to achieve complete vegetation cover should be implemented; and
e) Removal of stored top soil in the berm and aggregate extraction shall occur only up to the eastern margin of the naturalized buffer, which will be 10m from the drip line of the Significant Woodland.

9.0 ECOLOGICAL MONITORING PROGRAM

The terrestrial features will be protected by buffers, setbacks, and fencing and no impacts are expected.

Although the wetland/pond features are expected to be protected by the range of mitigation measures recommended, there is a concentration of features in this location which will benefit from monitoring to ensure that impacts are not occurring. These features include:

- a Regionally Significant breeding bird;
- fish habitat;
- Significant Wildlife Habitat in the form of turtle overwintering habitat; and
- a Midland Painted Turtle population – a species which is pending status under the Ontario Species at Risk Act.

The proposal for ecological monitoring is as follows: implement the Marsh Monitoring Protocol to document the strength of amphibian choruses at one station adjacent to the pond on three nights during the breeding season. It is recommended that this monitoring occur for 5 consecutive years, to begin once extraction has begun in Phase 1.

Additional factors that will be documented will include:

- any sediment transport into the wetland;
- width and health of the wetland vegetation; and
- any other pertinent facts about wetland and pond conditions that are observed.

An annual report on monitoring results will be provided to the Region of Waterloo, GRCA, and MNRF. The amphibian chorus results will be interpreted relative to the 2018 baseline results and the water table monitoring results from the hydrogeologist at stations MW1 and SG1 will also be considered.

After 5 years, the need for continuing the monitoring will be reviewed.

10.0 SUMMARY AND RECOMMENDATIONS

10.1 Summary

Assuming that the recommended mitigation measures are successfully implemented no negative impacts on any significant natural environment features or functions are expected, this includes Level 1 factors under the ARA and significant elements of the Natural Heritage System under the Waterloo ROPP.

10.2 Recommendations

Specific recommendations are found in report sections 6.2 and 7, and the locations where many of the recommendations are to be implemented are illustrated on Figure 3.

11.0 BIBLIOGRAPHY

Argus , G.W., K.M. Pryer, D.J. Keddy. 1982-87. Atlas of Rare Vascular Plants of Ontario. Parts 1 to 4. National Museums of Canada. Ottawa.

BSC. 2011. Whip-poor-will Roadside Survey Guide. Bird Studies Canada.

Cadman, M.D. et al. 2007. Atlas of Breeding Birds of Ontario, 2001-2005. Bird Studies Canada and others. 706pp.

Chapman, L.J. and D.F. Putnam. 1973. The Physiography of Southern Ontario Second Edition. University of Toronto Press. 386pp.

Carmichael, I., A. MacKenzie and B. Steinberg. 2002. Photo Guide to the Dragonflies and Damselflies of Southern Ontario. The Friends of Pinery Park.

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

CH2MHILL and North-south Environmental Inc.. 2008. Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update, Final Report. Prepared for Grand River Conservation Authority.

Colla, S., L. Richardson and P. Williams. Undated. Bumble Bees of the Eastern United States. USDA Forest Service and the Pollinator Partnership.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario, FON, Toronto.

Dunkle, S.W. 2000. Dragonflies Through Binoculars, A Field Guide to Dragonflies of North America. Oxford University Press. 266pp.

Farlee, L. et al. 2010. Identification of Butternuts and Butternut Hybrids. Purdue University Forestry and Natural Resources Extension. FNR-420-W.

Fisheries and Oceans Canada 2018. Distribution of Fish Species at Risk, Grand River Conservation Authority. Distribution of Mussel Species at Risk, Grand River Conservation Authority.

Harden Environmental Services Limited. 2019. Level 1 and Level 2 Hydrogeological Evaluation for Above Water Table Aggregate Extraction, Hallman Pit, Wilmot Township.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Ulrig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources. Southcentral Science Section, Science Development and Transfer Brach. SCSS Field Guide FG-02.

Lee, H.T. et al. 2008. Ecological Land Classification for Southern Ontario, Update to ELC Community Types and Community Codes, 2008.

Legislative Assembly of Ontario. 2007. Bill 184, An Act to Protect Species at Risk and to Make Related Changes to Other Acts.

Linton, J.E. 2012. The Butterflies of Waterloo Region. Published by the Toronto Entomologists' Association.

MacCulloch, R.D. 2002. The ROM Field Guide to Amphibians and Reptiles of Ontario. ROM, Toronto.

Minister of Justice. 2010. Consolidation Migratory Birds Convention Act, 1994. S.C. 1994, C. 22. Published at http://laws-lois.justice.gc.ca.

Newmaster, S.G., A.G. Harris and L.J. Kershaw. 1997. Wetland Plants of Ontario. Lone Pine Publishing. 240pp.

Newmaster, S.G., A. Lehela, P.W.C. Ulgrig, S. McMurray and M.J. Oldham. 1998. Ontario Plant List. Ontario Ministry of Natural Resources, Ontario Forestry Research Institute, Sault Ste. Marie, Ontario. Forestry Research Information Paper No.123.

OBBA. 2001. Guide for Participants. Atlas Management Board, FON, Don Mills. Ontario Breeding Bird Atlas

OBBA. 2018. Second OBBA Summary for Atlas Square 17NJ30, retrieved April 25, 2018. Ontario Breeding Bird Atlas.

OBA. 2019. Ontario Butterfly Atlas summary for square 17NJ30, retrieved July 29, 2019. Toronto Entomologists' Association. http://www.ontarioinsects.org/atlas_online.htm.

Oldham, M.J. 1993. Distribution and Status of the Vascular Plants of Southwestern Ontario –Draft OMNR. Aylmer District.

Oldham, M.J., W.D. Bakowsky and D.A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. NHIC, OMNR, Peteborough, Ontario.

OMMAH. 2014. Provincial Policy Statement Under the Planning Act.

OMNR. 2013. General Habitat Description for the Barn Swallow (Hirundo rustica) and General Habitat Description for Bank Swallow (Riparia riparia).

OMNR. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Polity Statement 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248pp.

OMNR. 2000. Significant Wildlife Habitat Technical Guide. Ontario Ministry of Natural Resources. 151pp.

OMNRF. 2017. Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario.

OMNRF. 2016. Survey Protocol for Ontario's Species at Risk Snakes.

OMNRF. 2015a. Significant Wildlife Habitat Ecoregion 6E Criterion Schedule.

OMNRF. 2015b. The Butternut Health Assessor's Field Guide (2015 Edition).

OMNRF. 2015c. Technical Note Species at Risk (SAR) Bats. MNRF Draft Interim Guidance.

Ontario Herpetofauna Atlas. 2018. Summary of Herptofauna Atlas data for square 17NJ30 post-1980, retrieved April 25, 2018

Regional Municipality of Waterloo. 2016. Greenland Network Implementation Guideline – Final.

Regional Municipality of Waterloo. 2015. Regional Official Plan, Region of Waterloo. Approved with modifications by the Ontario Municipal Board on June18, 2015.

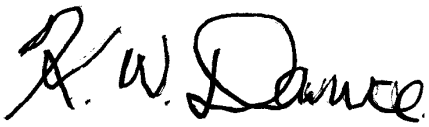
Regional Municipality of Waterloo. 1999. Significant Species List Native Vascular Plants Component.

Regional Municipality of Waterloo. 1999. Revisions to Waterloo Region's Significant Species List: Breeding Bird Component.

Rowell, J.C. 2012. The Snakes of Ontario: Natural History, Distribution, and Status.

Township of Wilmot, Official Plan. 2015. Map 4 the Greenlands Network.

Report prepared by:
Dance Environmental Inc.



K.W. Dance, M.Sc.
President

K.S. Dance, M.E.S.
Senior Terrestrial Ecologist
And Partner

APPENDIX I

Final Terms of Reference
Prepared for
EACC.
March 6, 2019.

DANCE ENVIRONMENTAL INC.

March 6, 2019

Terms of Reference
for an EIS
for the Proposed Hallman Pit
Located at 1894 Witmer Road
Township of Wilmot, Regional Municipality of Waterloo.

Prepared by:
Dance Environmental Inc.
807566 Oxford Rd. 29
R.R. #1 Drumbo, ON
N0J 1G0
519-463-6156
Attn: Kevin Dance

A. BACKGROUND

At a Pre-consultation Meeting held on November 29, 2018, GRCA and Region of Waterloo staff requested that a Terms of Reference for the Scoped EIS for the proposed aggregate pit be prepared and submitted for review by the GRCA and the Region of Waterloo.

The content of the Final Draft Region of Waterloo Greenlands Network Implementation Guideline (GNIG) dated May 18, 2016 was referred to while preparing the EIS Terms of Reference.

The requirements of the Aggregate Resources Act will also be consulted to guide the content of the Natural Environment Technical Study Level 1 and Level 2 reports. Where applicable other important documents will be consulted in the completion of the EIS including the Provincial Policy Statement, 2014 (PPS); Growth Plan for the Greater Golden Horseshoe, 2017 (and specifically within it the Mineral Aggregate Resources Section 4.2.8).

The attached Figure 2 shows the site location and certain environmental features that are present in the study area.

B. EIS TERMS OF REFERENCE

1. Purpose and Rationale

The purpose and rationale of the above water table, proposed aggregate extraction would be described.

2. **Maps**, recent air photos and the Operational Plan will be provided to illustrate the location of the Greenlands Network; GRCA wetlands and regulated areas; and features and functions mapped by or administered by OMNRF as they pertain to the site and an off site study area of 120m.

Features and functions to be mapped will include all of those listed in 2.1.1 through 2.1.13, inclusive from the Scoped EIS guidelines in the GNIG.

3. The **EIS Terms of Reference** will be included as an Appendix to the EIS.

4. Existing Conditions

4.1 Environmental features and ecological communities will be mapped on a recent air photo base using ELC vegetation type descriptors.

4.2 An assessment of on site and adjacent vegetation quality will be provided.

4.3 Ecological Inventory

Biophysical surveys are to be undertaken in order to identify natural habitat and/or populations of Regionally significant plant and animal species in the natural areas on the subject lands that might be adversely affected by the proposed aggregate operation. The following sections indicate the types of inventories and the approaches which will be taken to complete the biophysical surveys.

4.3.1 Vegetation

Spring, Summer and Autumn inventory of natural habitats will occur.

4.3.2 Breeding Birds

OBBA methods will be used for 2 visits. Crepuscular birds will also be inventoried.

4.3.3 Herpetofauna

Marsh Monitoring Program methods will be used for frog chorus inventories on three dates.

Turtle basking and nesting surveys will be conducted.

Given the presence of former barn foundations on the site, visits will be made to detect basking snakes on warm, sunny days in Spring, to determine if a snake hibernaculum is present.

4.3.4 Fish

The pond that is present on the margin of the site will be evaluated for potential as fish habitat.

4.3.5 Insects

Surveys for Lepidoptera, Odonata and Bumble bees will be conducted during appropriate weather conditions.

4.3.6 Mammals

Mammal observations will be recorded based on sightings, tracks and scat occurrence.

4.3.7 Significant Wildlife Habitat

The SWH Technical Guide and the Ecoregion 6E SWH Criteria Schedule will be used to determine which SWH criteria are confirmed to be present on site and/or in the adjacent off site study area. This section will also address the offsite Significant Woodland which is considered a Core Environmental Feature by the Region.

4.3.8 Nuisance/Problem Species

Any pertinent species will be noted.

4.3.9 Other Species at Risk

Any other SAR will be addressed.

4.3.10 Wetland

The on site wetland margin will be flagged and confirmed with GRCA staff during a site visit before the boundary is surveyed in. The wetland boundary will be plotted on the Existing Conditions Plan of the ARA application and will be shown on Figures contained in the EIS. There is no Provincially Significant Wetlands (PPSW) on the subject lands or adjacent to the subject lands. The on site wetland which extends to the adjacent property, to the east, is part of the Schindelsteddle South Wetland Complex which is locally significant. The EIS will address the locally significant wetland which is present.

4.4 Ecological, Hydrological and Hydrogeological, Economic and Social Functions.

These will be addressed for the environmental features identified in 4.3, above. The EIS will discuss maintaining quantitative and qualitative aspects of the hydrological and hydrogeological regimes sustaining the wetlands on the subject lands, based on the findings and information from the hydrogeology report produced for the proposed undertaking.

4.5 Groundwater and Surface Water

Results of groundwater monitoring and interpretation of groundwater/surface water interactions will be summarized from reporting prepared by the water resource specialist Harden Environmental.

This discussion will address implications for wetland habitat and the pond located along the eastern margin of the site.

4.6 Sub-watershed Study

Findings of the Alder Creek Sub-watershed Study will be summarized as they relate to the present study area.

4.7 Impacts of Previous Development or Site Alternations

A description of the effects of any past site alterations on the environmental features and functions will be provided.

5.0 Proposed Site Alterations

The Operational Plan will illustrate proposed grading, extraction and berming limits and sequencing.

The proposed annual extraction quantities, haul routes, dust and noise control methods will be described.

The estimated duration of extraction at the pit in years will be indicated, as will the rehabilitation proposed.

The extent and timing of grading and any vegetation clearing will be described.

6.0 Anticipated Direct and Indirect Impacts

Text descriptions of expected direct and indirect impacts on site and off site natural environmental features and functions will be prepared. The analysis will include the likelihood of occurrence, areal extent, duration and potential for reversibility of impacts.

7.0 Prevention, Minimization and Mitigation of Impacts

This chapter will indicate how potential impacts are to be prevented, minimized and mitigated. This will include descriptions of setbacks, buffers and timing of activities to reduce the potential for and duration of impacts.

An ecologically appropriate boundary of the Significant Woodland at the western boundary of the area proposed to be licensed for extraction will be identified through the EIS.

The EIS will identify and show the design of a suitable buffer between the Significant Woodland and the other woodland features and the proposed aggregate extraction operation within the subject lands.

8.0 Opportunities for Ecological Enhancement, Restoration, Long Term Conservation of Ecological Linkages and Environmental Features

The EIS will identify opportunities for ecological enhancement, restoration and long-term stewardship on the subject lands which can be incorporated into the site rehabilitation plan.

9.0 Summary, Including Recommendations

The summary will discuss any predicted adverse environmental impacts and recommended measures that will be taken to prevent, minimize and mitigate any impacts.

Recommended conditions of development will be provided.

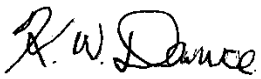
Recommendations will be made for long term management, conservation, enhancement or restoration of significant environmental features and functions on site and adjoining lands.

Recommended content of ecological monitoring will be described in terms of parameters, locations, timing, frequency and reporting. The content of a groundwater monitoring program for the proposed aggregate operation.

10.0 Appendices

Species lists including plants, ELC communities, breeding birds, Species at Risk, study methods, agencies contacted, bibliography and CV's of the EIS authors will be provided in appendices or text chapters, depending on which seems most effective to communicate the technical information.

Submitted by:



K.W. Dance, M.Sc.
President
Dance Environmental Inc.
March 6, 2019.

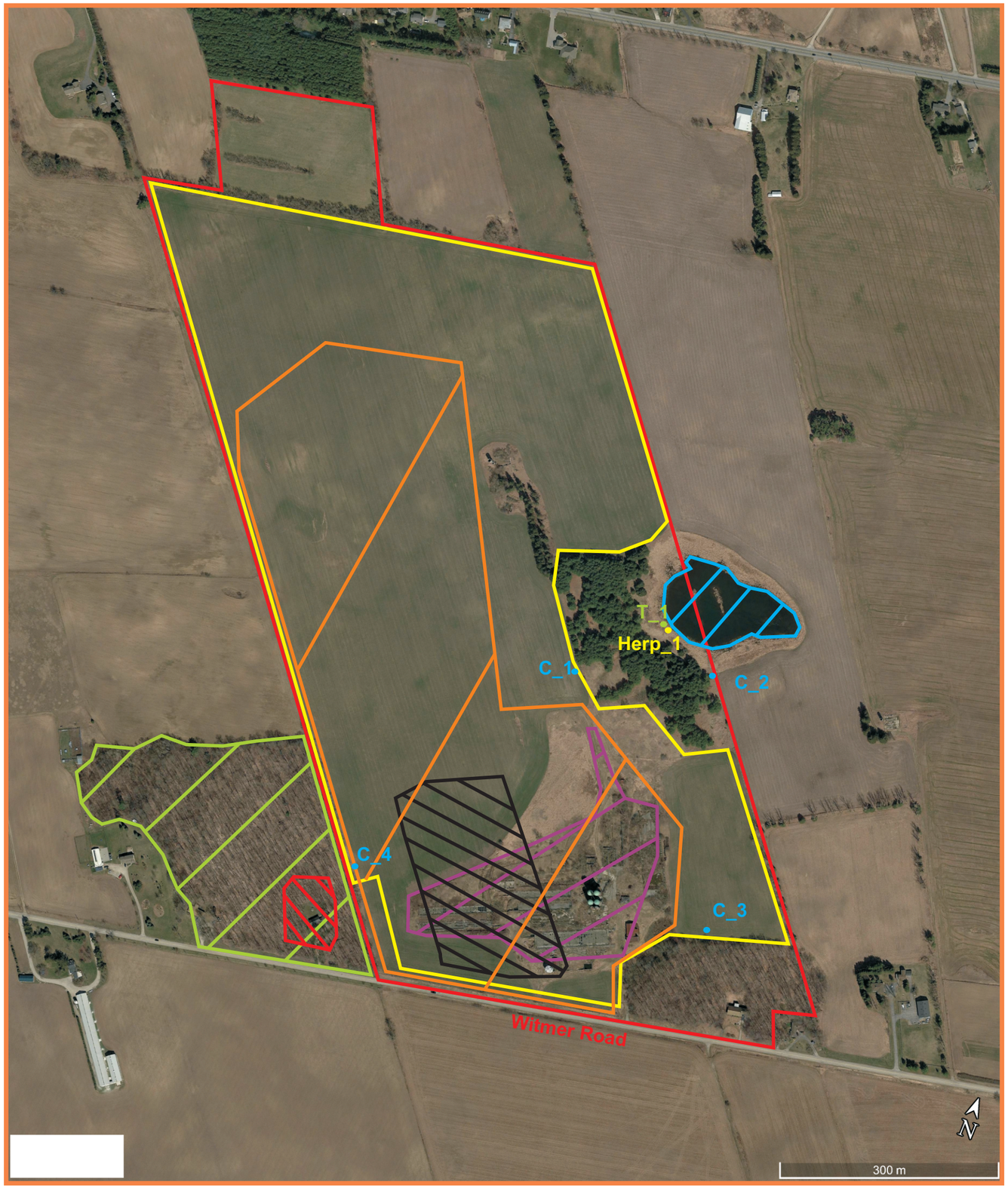


Figure 2. Study Area Boundaries and Survey Station Locations, Proposed Pit, Wilmot.

LEGEND

- Approximate Proposed Limit of Extraction Boundary
- Approximate Study Area Boundary
- Significant Woodland (Waterloo Region O.P., 20-15)
- Wintering Turtle Habitat
- Area Searched for Potential Snake Hibernacula

Areas within which SAR species were observed

- Approximate area where Eastern Wood-pewee were heard during Breeding season 2018.
- Approximate area where Barn Swallows were observed (foraging/perching).
- Approximate area where Bank Swallow were observed foraging.

Survey Station Locations, 2018

- T_1 — Turtle count location.
- C_1 — Crepuscular bird survey station location.
- Herp_1 — Herpetofauna survey station (MMP).

DANCE ENVIRONMENTAL INC.

DE-428

Nov. 21, 2018

APPENDIX II

Plant Species List
for
Study Area.

Appendix I. Herbaceous Plant Species List, Hallman Pit

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
PTERIDOPHYTES	**FERNS & ALLIES**													
Dryopteridaceae	**Wood Fern Family**													
Dryopteris carthusiana	Spinulose Wood Fern						X	5	-2		S5			
Equisetaceae	**Horsetail Family**													
Equisetum arvense	Field Horsetail		X					0	0		S5			
Pinaceae	**Pine Family**													
Picea glauca	White Spruce	X				X		6	3		S5			R+
Pinus strobus	Eastern White Pine	X				X		4	3		S5			
DICOTYLEDONS	**DICOTS**													
Aceraceae	**Maple Family**													
Acer negundo	Manitoba Maple	X			X	X		0	-2		S5			
Acer saccharum ssp. saccharum	Sugar Maple	X				X	X	4	3		S5			
Anacardiaceae	**Sumac or Cashew Family**													
Rhus hirta	Staghorn Sumac	X		X	X	X	X	1	5		S5			
Apiaceae	**Carrot or Parsley Family**													
Daucus carota	Wild Carrot			X		X			5	-2	SE5			
Aristolochiaceae	**Duchman's-pipe Family**													
Asarum canadense	Wild Ginger						X	6	5		S5			
Asclepiadaceae	**Milkweed Family**													
Asclepias syriaca	Common Milkweed	X	X	X		X		0	5		S5			
Cynanchum rossicum	Swallow-wort	X									SE5			
Asteraceae	**Composite or Aster Family**													
Achillea millefolium ssp. millefolium	Common Yarrow			X					3	-1	SE?			
Ambrosia artemisiifolia	Common Ragweed			X		X	X	0	3		S5			
Arctium minus ssp. minus	Common Burdock	X	X		X	X	X		5	-2	SE5			
Carduus nutans ssp. nutans	Musk Thistle	X	X	X					5	-1	SE?			
Cichorium intybus	Chicory			X					5	-1	SE5			
Cirsium arvense	Canada Thistle	X	X			X			3	-1	SE5			
Erigeron annuus	Daisy Fleabane		X	X				0	1		S5			
Eupatorium perfoliatum	Perfoliate Thoroughwort		X					2	-4		S5			
Euthamia graminifolia	Flat-topped Bushy Goldenrod	X						2	-2		S5			
Solidago altissima var. altissima	Tall Goldenrod		X					1	3		S5			
Solidago canadensis	Canada Goldenrod	X	X		X	X		1	3		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Solidago flexicaulis	Zig-zag Goldenrod						X	6	3		S5			
Solidago juncea	Early Goldenrod						X	3	5		S5			
Sonchus arvensis ssp. arvensis	Field Sow-thistle	X				X					SE5			
Symphyotrichum lanceolatum	Panicled Aster	X			X			3	-3		S5			
Symphyotrichum lateriflorum var. lateriflorum	Calico Aster		X	X		X	X	3	-2		S5			
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster		X								S5			
Taraxacum officinale	Common Dandelion	X		X	X	X			3	-2	SE5			
Berberidaceae	**Barberry Family**													
Caulophyllum thalictroides	Blue Cohosh						X	6	5		S5			
Boraginaceae	**Borage Family**													
Echium vulgare	Blueweed			X					5	-2	SE5			
Brassicaceae	**Mustard Family**													
Alliaria petiolata	Garlic Mustard	X			X	X	X		0	-3	SE5			
Hesperis matronalis	Dame's Rocket	X					X		5	-3	SE5			
Caprifoliaceae	**Honeysuckle Family**													
Lonicera tatarica	Tartarian Honeysuckle				X				3	-3	SE5			
Sambucus racemosa ssp. pubens	Red-berried Elderberry	X						5	2		S5			
Caryophyllaceae	**Pink Family**													
Saponaria officinalis	Bouncing-bet					X			3	-3	SE5			
Silene latifolia	Bladder Campion			X							SE5			
Chenopodiaceae	**Goosefoot Family**													
Chenopodium album var. album	Lamb's Quarters	X	X	X	X	X	X		1	-1	SE5			
Convolvulaceae	**Morning-glory Family**													
Convolvulus arvensis	Field Bindweed			X			X		5	-1	SE5			
Cornaceae	**Dogwood Family**													
Cornus alternifolia	Alternate-leaved Dogwood						X	6	5		S5			
Cornus stolonifera	Red-osier Dogwood		X	X				2	-3		S5			
Cucurbitaceae	**Gourd Family**													
Echinocystis lobata	Prickly Cucumber	X	X		X	X	X	3	-2		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Dipsacaceae	**Teasel Family**													
Dipsacus fullonum ssp. sylvestris	Wild Teasel					X			5	-1	SE5			
Fabaceae	**Pea Family**													
Coronilla varia	Variable Crown-vetch	X	X						5	-2	SE5			
Lotus corniculatus	Bird's-foot Trefoil			X					1	-2	SE5			
Medicago sativa ssp. sativa	Alfalfa	X		X	X				5	-1	SE5			
Melilotus altissima	Tall Sweet-clover			X					5	-1	SE1			
Robinia pseudo-acacia	Black Locust			X					4	-3	SE5			
Trifolium pratense	Red Clover			X					2	-2	SE5			
Trifolium repens	White Clover			X					2	-1	SE5			
Fagaceae	**Beech Family**													
Fagus grandifolia	American Beech						X	6	3		S5			
Quercus macrocarpa	Bur Oak						X	5	1		S5			
Quercus rubra	Red Oak						X	6	3		S5			
Geraniaceae	**Geranium Family**													
Geranium robertianum	Herb-robert	X					X		5	-2	SE5			
Hydrophyllaceae	**Water-leaf Family**													
Hydrophyllum canadense	Broad-leaved Water-leaf						X	8	-2		S4			
Hydrophyllum virginianum	Virginia Water-leaf						X	6	-2		S5			
Juglandaceae	**Walnut Family**													
Carya cordiformis	Bitternut hickory	X		X			X	6	0		S5			
Juglans nigra	Black Walnut				X		X	5	3		S4			R+*
Lamiaceae	**Mint Family**													
Glechoma hederacea	Creeping Charlie						X		5	-2	SE5			
Leonurus cardiaca ssp. cardiaca	Common Motherwort		X		X	X	X		5	-2	SE5			
Lycopus uniflorus	Northern Water-horehound		X					5	-5		S5			
Mentha arvensis ssp. borealis	American Wild Mint	X	X					3	-3		S5			
Nepeta cataria	Catnip			X	X		X		1	-2	SE5			
Malvaceae	**Mallow Family**													
Abutilon theophrasti	Velvet-leaf		X	X		X			4	-1	SE5			
Moraceae	**Mulberry Family**													
Morus alba	White Mulberry	X		X	X	X	X		0	-3	SE5			
Oleaceae	**Olive Family**													
Fraxinus americana	White Ash	X			X		X	4	3		S5			
Fraxinus pennsylvanica	Green Ash					X		3	-3		S5			
Syringa vulgaris	Common Lilac					X			5	-2	SE5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Onagraceae	**Evening-primrose Family**													
Circaea alpina	Smaller Enchanter's Nightshade	x					x	6	-3		S5			
Oenothera biennis	Common Evening-primrose					X		0	3		S5			
Oxalidaceae	**Wood Sorrel Family**													
Oxalis stricta	Upright Yellow Wood-sorrel				X			0	3		S5			
Papaveraceae	**Poppy Family**													
Chelidonium majus	Celandine	X					X		5	-3	SE5			
Sanguinaria canadensis	Bloodroot	X					X	5	4		S5			
Plantaginaceae	**Plantain Family**													
Plantago major	Common Plantain			X					-1	-1	SE5			
Polygonaceae	**Smartweed Family**													
Polygonum persicaria	Lady's-thumb			X					-3	-1	SE5			
Rumex crispus	Curly-leaf Dock	X		X			X		-1	-2	SE5			
Rumex obtusifolius ssp. obtusifolius	Bitter Dock			X					-3	-1	SE5			
Ranunculaceae	**Buttercup Family**													
Actaea pachypoda	White Baneberry						X	6	5		S5			
Actaea rubra	Red Baneberry						X	5	5		S5			
Anemone acutiloba	Sharp-lobed Hepatica						X	6	5		S5			
Aquilegia canadensis	Wild Columbine						X	5	1		S5			
Rhamnaceae	**Buckthorn Family**													
Rhamnus cathartica	Common Buckthorn	X		X	X	X	X		3	-3	SE5			
Rhamnus frangula	Glossy Buckthorn			X					-1	-3	SE5			
Rosaceae	**Rose Family**													
Fragaria virginiana	Wild Strawberry	X									S5			
Geum aleppicum	Yellow Avens		X					2	-1		S5			
Malus pumila	Common Apple				X				5	-1	SE5			
Potentilla argentea	Silvery Cinquefoil			X					3	-2	SE5			
Prunus serotina	Black Cherry					X	X	3	3		S5			
Prunus virginiana ssp. virginiana	Choke Cherry	X				X		2	1		S5			
Pyrus communis	Common Pear					X			5	-1	SE4			
Rubus idaeus ssp. idaeus	Red Raspberry		X		X	X	X				SE1			
Rubus parviflorus	Sparse-flowered Thimbleberry	X	X				X	7	2		S4			
Rubiaceae	**Madder Family**													
Galium triflorum	Sweet-scented Bedstraw	X	X	X		X		4	2		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Salicaceae	**Willow Family**													
Populus deltoides	Eastern Cottonwood			X	X						S5			
Populus deltoides ssp. deltoides	Eastern Cottonwood							4	-1		SU			R+
Populus grandidentata	Large-tooth Aspen				X			5	3		S5			
Salix fragilis	Crack Willow		X						-1	-3	SE5			
Salix petiolaris	Slender Willow			X				3	-4		S5			
Scrophulariaceae	**Figwort Family**													
Verbascum thapsus	Common Mullein	X	X	X	X				5	-2	SE5			
Solanaceae	**Nightshade Family**													
Solanum dulcamara	Bitter Nightshade	X		X	X		X		0	-2	SE5			
Tiliaceae	**Linden Family**													
Tilia americana	American Basswood						X	4	3		S5			
Ulmaceae	**Elm Family**													
Ulmus americana	White Elm						X	3	-2		S5			
Urticaceae	**Nettle Family**													
Urtica dioica ssp. dioica	European Stinging Nettle	X	X	X		X	X		-1	-1	SE2			
Violaceae	**Violet Family**													
Viola pubescens	Downy Yellow Violet						X	5	4		S5			
Viola sororia	Woolly Blue Violet						X	4	1		S5			
Vitaceae	**Grape Family**													
Parthenocissus inserta (or P. vitacea)	Woodbine			X	X	X	X	3	3		S5			
Vitis riparia	Riverbank Grape	X		X	X	X	X	0	-2		S5			
Araceae	**Arum Family**													
Arisaema triphyllum ssp. triphyllum	Small Jack-in-the-pulpit						X	5	-2		S5			
Cyperaceae	**Sedge Family**													
Schoenoplectus tabernaemontani	American Great Bulrush	X						5	-5		S5			
Liliaceae	**Lily Family**													
Allium tricoccum	Wild Leek						X	7	2		S5			
Asparagus officinalis	Garden Asparagus				X				3	-1	SE5			
Maianthemum racemosum ssp. racemosum	False Solomon's Seal						X	4	3		S5			
Trillium erectum	Purple Trillium						X	6	1		S5			

BOTANICAL NAME	COMMON NAME	Off Site	Off Site	On Site	On Site	On Site	Off Site	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	OMNR STATUS	COSEWIC STATUS	LOCAL STATUS WATE
	SOURCE:	FOCM6-1	MAMM1-3	IAG	FODM5-11	TAGM5	FODM5-9 A& B	OLDHAM ET AL	OLDHAM ET AL	OLDHAM ET AL	MNR RARE 4th Ed. 2009	SARO List	SARA Registry	
Trillium grandiflorum	White Trillium						X	5	5		S5			
Poaceae	**Grass Family**													
Agrostis stolonifera	Redtop			X					-3		S5			
Bromus inermis ssp. inermis	Awnless Brome	X			X	X	X		5	-3	SE5			
Dactylis glomerata	Orchard Grass	X		X	X	X	X		3	-1	SE5			
Digitaria ischaemum	Small Crabgrass			X					3	-1	SE5			
Echinochloa crusgalli	Common Barnyard Grass			X					-3	-1	SE5			
Glyceria striata	Fowl Meadow Grass						X	3	-5		S5			
Panicum capillare	Witch Grass			X		X		0	0		S5			
Phalaris arundinacea	Reed Canary Grass		X					0	-4		S5			
Phleum pratense	Timothy			X					3	-1	SE5			
Poa pratensis ssp. pratensis	Kentucky Bluegrass	X		X	X			0	1		S5			
Setaria faberi	Giant Foxtail	X			X				2	-1	SE4			
Setaria viridis	Green Foxtail	X		X	X	X	X			-1	SE5			
Typhaceae	**Cattail Family**													
Typha latifolia	Broad-leaved Cattail		X					3	-5		S5			

LEGEND

Floral Quality Index and Coefficient of Conservatism Values

General habitat values associated with the CC values are:

0-3: species found in a wide variety of communities, including disturbed sites

4-6: species associated with a specific community, but tolerate moderate disturbance

7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances

9-10: species with a high degree of fidelity to a narrow range of synecological parameters

Weediness Index

-1: little or no impact on natural areas (most non-native plants are in this category)

-2: occasional impacts on natural areas, generally infrequent or localized

-3: major potential impacts on natural areas

Wetness Index

OBL (Obligate Wetland): occurs almost always in wetlands under natural conditions (estimated >99% probability)

FACW (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability)

FAC (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability)

FACU (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability)

UPL (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)

Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:

OBL : -5	FACW-: -2	FAC-: 1	FACU-: 4
FACW+: -4	FAC+: -1	FACU+: 2	UPL: 5
FACW: -3	FAC: 0	FACU: 3	

Provincial Status

S4: Apparantly Secure; uncommon but not rare; some cause for long-term concern due to decline or other factors; usually more than 100 occurrences.

S5: Secure in Ontario; common, widespread and abundant in the province

SNR: Unranked in Ontario; conservation status not yet assessed

SU: Unrankable; currently unrankable due to lack of information or due to substantially conflicting information about staus or trends

SNA: Not Applicable - a conservation status rank is not applicable because the species is not a suitable target for conservation

SE: Exotic; not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above

APPENDIX III

Bird Species List
For
Study Area,
2018

Appendix II. Hallamn Pit, Wilmot

Avian Species Observed and Known from Study Area

Scientific Name	Common Name	CODE	Dance Environmental Biologist Observations						GRANK	SRANK	COSEWIC	SARO	Region of Waterloo Significant Breeding Birds
			(FOCM6-1)	(IAG)	(MAMM1-3 & OAO)	(FODM5-11)	(TAGM5)	(FODM5-9 A & B)					
	Ducks, Geese & Swans												
Branta canadensis	Canada Goose	CAGO		B(o)	S, B, P				G5	S5			
Aix sponsa	Wood Duck	WODU			S				G5	S5			√*
Anas americana	American Wigeon	AMWI			S				G5	S4			√
Anas platyrhynchos	Mallard	MALL		B(o)	S, B, P				G5	S5			
Aythya collaris	Ring-necked Duck	RNDU			S				G5	S5			√
Bucephala albeola	Bufflehead	BUFF			S				G5	S4			
	Partridges, Grouse & Turkeys												
Meleagris gallopavo	Wild Turkey	WITU	S	S					G5	S5			
	GREBES												
Podilymbus podiceps	Pied-billed Grebe	PBGR			S, B, P				G5	S4B, S4N			√
	HERONS & BITTERNS												
Ardea herodias	Great Blue Heron	GBHE	B(o)	B(o)			B(o)		G5	S4B			√
	VULTURES												
Cathartes aura	Turkey Vulture	TUVU		S, B(o), P(o)		P(o)		S(o)	G5	S5B			√
	HAWKS, KITES & EAGLES												
Accipiter striatus	Sharp-shinned Hawk	SSHA		P(o)					G5	S5		NAR	√
Accipiter cooperii	Cooper's Hawk	COHA		W(o)					G5	S4	NAR	NAR	√
Buteo jamaicensis	Red-tailed Hawk	RTHA		S(o), B(o), W(o)			B(o)	S, B	G5	S5	NAR	NAR	
	CARACARAS & FALCONS												
Falco sparverius	American Kestrel	AMKE		S					G5	S4			
	PLOVERS												
Charadrius vociferus	Killdeer	KILL		S	S(o)		B		G5	S5B, S5N			
	SANDPIPERS & PHALAROPES												
Actitis macularia	Spotted Sandpiper	SPSA			B				G5	S5			
	GULLS, TERNS & SKIMMERS												
Larus delawarensis	Ring-billed Gull	RBGU			S				G5	S5B, S4N			
Hydroprogne caspia	Caspian Tern	CATE			P				G5	S3B	NAR	NAR	√
	PIGEONS & DOVES												
Columba livia	Rock Pigeon	ROPI		S, B					G5	SNA			
Zenaida macroura	Mourning Dove	MODO		B(o), P		B, P	P		G5	S5			
	TYPICAL OWLS												
Otus asio	Eastern Screech-Owl	EASO						W	G5	S4	NAR	NAR	
Bubo virgianus	Great Horned Owl	GHOW	S, P	S(o)				S	G5	S4			
	WOODPECKERS												
Melanerpes carolinus	Red-bellied Woodpecker	RBWO						S, P	G5	S4			√
Picoides pubescens	Downy Woodpecker	DOWO	P				B	S, B, P, W	G5	S5			
Picoides villosus	Hairy Woodpecker	HAWO	B						G5	S5			
Colaptes auratus	Northern Flicker	NOFL		S				S, B, P	G5	S4B			
	TYRANT FLYCATCHERS												
Contopus virens	Eastern Wood-Pewee	EAWP						B	G5	S4B	SC	SC	
Sayornis phoebe	Eastern Phoebe	EAPH		S, B					G5	S5B			
Myiarchus crinitus	Great Crested Flycatcher	GCFL						S, B	G5	S4B			
Tyrannus tyrannus	Eastern Kingbird	EAKI	B		S, B		B	B	G5	S4B			
	VIREOS												
Vireo olivaceus	Red-eyed Vireo	REVI						S, B, P	G5	S5B			
	CROWS & JAYS												
Cyanocitta cristata	Blue Jay	BLJA	P	B(o), P(o)		P		S, B, P, W	G5	S5			
Corvus brachyrhynchos	American Crow	AMCR	B, P, W(o)	, B(o), P(o), W(	S	B, P	B, P(o)	S, B, W	G5	S5B			
	LARKS												
Eremophila alpestris	Horned Lark	HOLA		S, B			B		G5	S5B			
	SWALLOWS												
Tachycineta bicolor	Tree Swallow	TRES		S(o)	S, B				G5	S4B			
Riparia riparia	Bank Swallow	BANS		S					G5	S4B			
Hirundo rustica	Barn Swallow	BARS	S(o)	S(o), B(o), P			B(o)		G5	S4B	T	**THR**	
	CHICKADEES & TITMICE												
Poecile atricapillus	Black-capped Chickadee	BCCH	S, B, P, W		S			S, B	G5	S5			
	NUTHATCHES												
Sitta carolinensis	White-breasted Nuthatch	WBNU						S	G5	S5			
	WRENS												
Troglodytes aedon	House Wren	HOWR		B		B		S, B, P	G5	S5B			
	KINGLETS												
Regulus satrapa	Golden-crowned Kinglet	GCKI	S					S	G5	S5B			√
Regulus calendula	Ruby-crowned Kinglet	RCKI	S						G5	S4B			√
	THRUSHES												
Sialia sialis	Eastern Bluebird	EABL					B		G5	S5B	NAR	NAR	√
Catharus guttatus	Hermit Thrush	HETH						S	G5	S5B			
Turdus migratorius	American Robin	AMRO	S	S, B		B, P	P	B	G5	S5B			

Scientific Name	Common Name	CODE	(FOCM6-1)	(IAG)	(MAMM1-3 & OAO)	(FODM5-11)	(TAGM5)	(FODM5-9 A & B)	GRANK	SRANK	COSEWIC	SARO	Region of Waterloo Significant Breeding Bir
	MOCKINGBIRDS & THRASHERS												
Dumetella carolinensis	Gray Catbird	GRCA						B	G5	S4B			
Toxostoma rufum	Brown Thrasher	BRTH					B		G5	S4B			√
	STARLINGS												
Sturnus vulgaris	European Starling	EUST		S, B		P	P	S, B	G5	SNA			
	WAXWINGS												
Bombycilla cedrorum	Cedar Waxwing	CEDW	B						G5	S5B			
	WOOD-WARBLERS												
Dendroica petechia	Yellow Warbler	YWAR	B						G5	S5B			
Dendroica pinus	Pine Warbler	PIWA	S						G5	S5B			√
	SPARROWS												
Spizella arborea	American Tree Sparrow	ATSP		W					G5	S4B			
Spizella passerina	Chipping Sparrow	CHSP	S, B, P	B	S		B	B	G5	S5B			
Pooecetes gramineus	Vesper Sparrow	VESP		B, P			B, P		G5	S4B			√
Passerculus Sandwichensis	Savannah Sparrow	SAVS		B		B			G5	S4B			
Melospiza melodia	Song Sparrow	SOSP	S, B, P	S, B, P	S, P	B	B	S, B, P	G5	S5B			
Zonotrichia albicollis	White-throated Sparrow	WTSP	S, P				P	P	G5	S5B			√
Junco hyemalis	Dark-eyed Junco	DEJU		W					G5	S5B			
	CARDINALS & ALLIES												
Cardinalis cardinalis	Northern Cardinal	NOCA	S, B, P			B	B	S, B	G5	S5			
Passerina cyanea	Indigo Bunting	INBU	B	B		B	B	S, B	G5	S4B			
	BLACKBIRDS												
Agelaius phoeniceus	Red-winged Blackbird	RWBL	S, B	S, B	S, B, P		B, P		G5	S4			
Quiscalus quiscula	Common Grackle	COGR		S, B(o), P(o)	S	B		S, P	G5	S5B			
Molothrus ater	Brown-headed Cowbird	BHCO		S, B	S		B	B	G5	S4B			
Icterus galbula	Baltimore Oriole	BAOR		B(o)		B		S, B	G5	S4B			
	FINCHES												
Carduelis flammea	Common Redpoll	CORE		W					G5	S4B			
Carduelis tristis	American Goldfinch	AMGO	S, B	B(o), P(o)	S	B	B, P	S, B, P	G5	S5B			
	OLD WORLD SPARROWS												
Passer domesticus	House Sparrow	HOSP						S	G5	SNA			

LEGEND

Season of Observion

S= Spring 2018 (April 21, 22, 30; May 1, 8, 15, 23, 29)
B= Breeding season 2018 (June 5 and 22)
P= Post-breeding season 2018 (July 5; Sept 17, 20)
W=Winter 2019 (Feb 5, 19, March 6)

G-Rank (Global Rank)

G4- Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5- Secure	Common; widespread and abundant.

S-Rank (Provincial Rank)

S3- Vunerable	Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4- Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5- Secure	Common, widespread, and abundant in the nation or state/province.
SNA- Not Applicable	A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

COSEWIC (National Status)

T (Threatened)	A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC (Special Concern)	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
NAR (Not at Risk)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

SARO (Provincial Status)

THR =Threatened	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC =Special Concern	A species with characteristics that make it sensitive to human activities or natural events.

Waterloo Region:
√ Regionally Significant
√* Significant only when nesting in natural circumstances

APPENDIX IV

Second OBBA
Breeding Bird Data
For
Square 17NJ30

Hallman Pit: 2nd OBBA Summary, Square 17NJ30

Species list for square 17NJ30 (number of entries returned: 101)

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
7	17NJ30	Canada Goose	NE	CONF	1	Fraser Gibson				
7	17NJ30	Wood Duck	FY	CONF	1	Fraser Gibson				
7	17NJ30	Mallard	FY	CONF	1	Fraser Gibson	3	11.11	0.5556	1
7	17NJ30	Blue-winged Teal	A	PROB	1	Fraser Gibson				
7	17NJ30	Hooded Merganser	V	PROB	1					
7	17NJ30	Ruffed Grouse	H	POSS	1	Fraser Gibson				
7	17NJ30	Wild Turkey	FY	CONF	1	Fraser Gibson				
7	17NJ30	Pied-billed Grebe	T	PROB	1	Fraser Gibson				
7	17NJ30	Green Heron	T	PROB	1	Fraser Gibson				
7	17NJ30	Turkey Vulture	FY	CONF	1	Fraser Gibson				
7	17NJ30	Northern Harrier	H	POSS	1	Fraser Gibson				
7	17NJ30	Sharp-shinned Hawk	FY	CONF	1	Fraser Gibson				
7	17NJ30	Cooper's Hawk	NY	CONF	1	Fraser Gibson				
7	17NJ30	Red-tailed Hawk	NY	CONF	1	Fraser Gibson				
7	17NJ30	American Kestrel	CF	CONF	1	Fraser Gibson				
7	17NJ30	Virginia Rail	T	PROB	1	Fraser Gibson				
7	17NJ30	Sora	T	PROB	1	Fraser Gibson				
7	17NJ30	Common Gallinule	T	PROB	1					
7	17NJ30	Killdeer	FY	CONF	1		4	14.81	0.1481	1
7	17NJ30	Rock Pigeon	NU	CONF	1	Fraser Gibson	4	14.81	0.6667	1
7	17NJ30	Spotted Sandpiper	FY	CONF	1	Fraser Gibson				
7	17NJ30	American Woodcock	DD	CONF	1					
7	17NJ30	Mourning Dove	AE	CONF	1	Fraser Gibson	13	48.15	0.8889	1
7	17NJ30	Yellow-billed Cuckoo	S	POSS	1	Fraser Gibson				
7	17NJ30	Black-billed Cuckoo	S	POSS	1	Fraser Gibson				
7	17NJ30	Eastern Screech-Owl	T	PROB	1	Fraser Gibson				
7	17NJ30	Great Horned Owl	NY	CONF	1	2 atlassers				
7	17NJ30	Long-eared Owl	T	PROB	1	Fraser Gibson				
7	17NJ30	Common Nighthawk	P	PROB	1	Fraser Gibson				
7	17NJ30	Chimney Swift	V	PROB	1	Fraser Gibson				
7	17NJ30	Ruby-throated Hummingbird	T	PROB	1					
7	17NJ30	Belted Kingfisher	T	PROB	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Red-headed Woodpecker	CF	CONF	1	Fraser Gibson				
7	17NJ30	Red-bellied Woodpecker	CF	CONF	1	Fraser Gibson				

7	17NJ30	Yellow-bellied Sapsucker	S	POSS	1	Fraser Gibson				
7	17NJ30	Downy Woodpecker	NY	CONF	1	Fraser Gibson				
7	17NJ30	Hairy Woodpecker	NY	CONF	1	Fraser Gibson				
7	17NJ30	Northern Flicker	AE	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Pileated Woodpecker	V	PROB	1					
7	17NJ30	Eastern Wood-Pewee	NY	CONF	1	Fraser Gibson	2	7.41	0.1481	1
7	17NJ30	Willow Flycatcher	CF	CONF	1	Fraser Gibson				
7	17NJ30	Least Flycatcher	T	PROB	1	Fraser Gibson				
7	17NJ30	Eastern Phoebe	T	PROB	1	Fraser Gibson				
7	17NJ30	Great Crested Flycatcher	AE	CONF	1		1	3.7	0.037	1
7	17NJ30	Eastern Kingbird	CF	CONF	1	Fraser Gibson	3	11.11	0.1481	1
7	17NJ30	Yellow-throated Vireo	S	POSS	1	Fraser Gibson				
7	17NJ30	Blue-headed Vireo	S	POSS	1	Fraser Gibson				
7	17NJ30	Warbling Vireo	AE	CONF	1	Fraser Gibson				
7	17NJ30	Red-eyed Vireo	T	PROB	1		1	3.7	0.0741	1
7	17NJ30	Blue Jay	AE	CONF	1	Fraser Gibson	4	14.81	0.1852	1
7	17NJ30	American Crow	CF	CONF	1	Fraser Gibson	16	59.26	1.5556	1
7	17NJ30	Horned Lark	CF	CONF	1		11	40.74	0.8148	1
7	17NJ30	Tree Swallow	NY	CONF	1	Fraser Gibson	4	14.81	0.3704	1
7	17NJ30	Northern Rough-winged Swallow	FY	CONF	1		1	3.7	0.0741	1
7	17NJ30	Bank Swallow	AE	CONF	1	Fraser Gibson				
7	17NJ30	Cliff Swallow	NU	CONF	1	Fraser Gibson				
7	17NJ30	Barn Swallow	AE	CONF	1	Fraser Gibson	4	14.81	0.2222	1
7	17NJ30	Black-capped Chickadee	NY	CONF	1		4	14.81	0.2593	1
7	17NJ30	Red-breasted Nuthatch	P	PROB	1	Fraser Gibson				
7	17NJ30	White-breasted Nuthatch	CF	CONF	1	Fraser Gibson	1	3.7	0.0741	1
7	17NJ30	Brown Creeper	P	PROB	1	Fraser Gibson				
7	17NJ30	House Wren	NY	CONF	1	Fraser Gibson				
7	17NJ30	Winter Wren	H	POSS	1	Fraser Gibson				
7	17NJ30	Blue-gray Gnatcatcher	P	PROB	1	Fraser Gibson				
7	17NJ30	Eastern Bluebird	NE	CONF	1	Fraser Gibson	3	11.11	0.1111	1
7	17NJ30	Wood Thrush	NY	CONF	1	Lyle Friesen	1	3.7	0.0741	1
7	17NJ30	American Robin	NY	CONF	1	Fraser Gibson	18	66.67	1.5556	1
7	17NJ30	Gray Catbird	CF	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Brown Thrasher	CF	CONF	1	Fraser Gibson				
7	17NJ30	European Starling	NY	CONF	1	Fraser Gibson	23	85.19	5.6296	1
7	17NJ30	Cedar Waxwing	T	PROB	1	Fraser Gibson	5	18.52	0.2963	1
7	17NJ30	Yellow Warbler	NE	CONF	1	Fraser Gibson	2	7.41	0.0741	1
7	17NJ30	Chestnut-sided Warbler	T	PROB	1					

7	17NJ30	Black-throated Green Warbler	P	PROB	1	Fraser Gibson				
7	17NJ30	Black-and-white Warbler	S	POSS	1	Fraser Gibson				
7	17NJ30	American Redstart	FY	CONF	1	Fraser Gibson				
7	17NJ30	Ovenbird	S	POSS	1					
7	17NJ30	Mourning Warbler	T	PROB	1					
7	17NJ30	Common Yellowthroat	CF	CONF	1	Fraser Gibson	1	3.7	0.037	1
7	17NJ30	Chipping Sparrow	CF	CONF	1	Fraser Gibson	13	48.15	0.6296	1
7	17NJ30	Clay-colored Sparrow	T	PROB	1	Fraser Gibson				
7	17NJ30	Field Sparrow	FY	CONF	1		1	3.7	0.037	1
7	17NJ30	Vesper Sparrow	P	PROB	1	Fraser Gibson				
7	17NJ30	Savannah Sparrow	NY	CONF	1	Fraser Gibson	10	37.04	0.7407	1
7	17NJ30	Grasshopper Sparrow	T	PROB	1	Fraser Gibson				
7	17NJ30	Song Sparrow	NE	CONF	1	Fraser Gibson	21	77.78	1.3704	1
7	17NJ30	Swamp Sparrow	T	PROB	1					
7	17NJ30	Scarlet Tanager	S	POSS	1	Fraser Gibson				
7	17NJ30	Northern Cardinal	CF	CONF	1	Fraser Gibson	5	18.52	0.3333	1
7	17NJ30	Rose-breasted Grosbeak	AE	CONF	1					
7	17NJ30	Indigo Bunting	CF	CONF	1	Fraser Gibson	4	14.81	0.1852	1
7	17NJ30	Bobolink	CF	CONF	1	Fraser Gibson	2	7.41	0.1111	1
7	17NJ30	Red-winged Blackbird	NY	CONF	1		19	70.37	2.9259	1
7	17NJ30	Eastern Meadowlark	T	PROB	1	Fraser Gibson	2	7.41	0.0741	1
7	17NJ30	Common Grackle	NE	CONF	1	Fraser Gibson	17	62.96	2.6667	1
7	17NJ30	Brown-headed Cowbird	NE	CONF	1	Fraser Gibson	8	29.63	0.4815	1
7	17NJ30	Baltimore Oriole	NY	CONF	1		2	7.41	0.1111	1
7	17NJ30	Purple Finch	S	POSS	1					
7	17NJ30	House Finch	FY	CONF	1		6	22.22	0.2222	1
7	17NJ30	American Goldfinch	NY	CONF	1	Fraser Gibson	16	59.26	0.963	1
7	17NJ30	House Sparrow	NY	CONF	1	Fraser Gibson	16	59.26	1.8889	1

Download results

LEGEND	
Breeding Evidence **Max BE:** Highest Breeding Evidence recorded **Categ:** Highest Breeding Category recorded (OBS=observed, POSS=possible, PROB=probable, CONF=confirmed) **#Sq:** Number of squares with species (Breeding Evidence) **Atlasser name:** Name of atlasser who reported the highest breeding evidence (if they accepted that their name be displayed). If more than one person provided the same breeding evidence code, then only the number of atlassers is listed.	**Point Counts** **#PC:** Number of Point Counts with species **%PC:** Percent of Point Counts with species **Abun:** Average number of birds per Point Count **#Sq:** Number of squares with species (Point Counts)

APPENDIX V

C.V.’s of E.I.S.
Authors:
K.W. Dance, M.Sc.
K.S. Dance, M.E.S.

DANCE ENVIRONMENTAL INC.

KEN DANCE, M.Sc.
CONSULTING BIOLOGIST

EDUCATION

- M.Sc., Biology, 1977; University of Waterloo
- B.Sc., Honours Biology, 1975; University of Waterloo

COURSES

- Butternut Health Assessment Workshop & Update – OMNR, 2010 & 2013
- Preparation of E.I.S. Reports – OMNR, 1995
- Bioassessments & Biological Criteria for Warmwater Streams – AFS 1993
- Ontario Wetland Evaluation System, 3rd Edition – OMNR, 1993
- Creating and Using Wetlands – University of Wisconsin, 1992
- Fluvial Geomorphology – University of Guelph and AFS, 1992

PROFESSIONAL EXPERIENCE

1991 to date. Consulting Biologist and President, Dance Environmental Inc.
The firm has completed over 425 assignments.

Mr. Dance has been consulting for 41 years and has gained extensive experience on the following types of studies: ecological inventory, biological monitoring, environmental planning, Species at Risk Overall Benefit and Management Plans, watershed management, no net loss of fish habitat, tree saving plans, vegetation management, wetland Environmental Impact Studies, non-game wildlife and environmental assessments.

He also has experience in biological resource inventory, impact prediction, management option development and comparison, attendance at public information centres and as an expert witness before boards and tribunals.

1988-1991 Senior Biologist, Ecologistics Limited. As Senior Biologist, Ken was responsible for review of all biological projects. He consulted to private and public sector clients on management of fish, vegetation, and wildlife resources. Including projects for First Nations.

1985-1988 Associate and Manager of Biological Services, Gartner Lee Limited. Mr. Dance consulted to industrial and government clients.

1982-1985 Senior Biologist and Project Manager, Gartner Lee Limited.

1977-1982 Biologist and Project Manager, Ecologistics Limited. Including projects for First Nations Bands.

1975-1976 Research Technician, University of Waterloo. Mr. Dance acted as a research technician on a PLUARG contract study of two streams.

PROJECT EXAMPLES

E.I.S. Reports

Undertook inventory, site assessments and reporting for over one thousand sites relating to residential, industrial, aggregate and waste management proposals.

Highways and Roads

Examples of Environmental Assessment and highway construction projects, which Mr. Dance has worked on follow.

- Parkhill Road and Bridge, Cambridge – inspection of in-water construction to minimize erosion and sedimentation and construction of fish pool habitat.
- Highway 60 at Huntsville – inspection of in-water work during replacement of 4 culverts, including trout habitat; inspection of tree and shrub plantings.
- Highway 35 Minden – inspection of stream habitat restoration construction and inspection of tree and shrub plantings.
- Wellington County Roads – fisheries assessments for 3 culvert replacements.

Aggregate NETR and EIS Projects

Several aggregate studies in Bruce, Huron and Grey Counties. Detailed snake hibernaculum and snake population monitoring study of three snake species at an old quarry.

Wastewater Management

- Thunder Bay Water Pollution Prevention Study – biological consultant addressing fish, wildlife, forests, wetlands and Lake Superior near shore habitat.
- Cincinnati and Cleveland, Ohio – CSO Review Studies: biological consultant addressing existing impacts on aquatic ecosystems and advice regarding solution options.
- Wastewater Treatment Plant Class E.A.s: biological consultant for Ayr, Flesherton, Ingersoll, Keswick, Lambeth, Tavistock and Wellesley plant upgrades/expansions.

Water Supply

Biological/fisheries assessment regarding water taking and/or facility siting for projects in Elmira, Georgetown, Acton, Cambridge, Caledon and Brampton.

Publications

Published chapters in three books. Over forty papers on fish, wildlife, wetland and vegetation management, as well as water quality and fisheries. Articles in publications such as Ontario Birds, Ontario Field Biologist, Newsletter of the Field Botanists of Ontario, Recreation Canada, Landscape Architectural Review and the Water Research Journal of Canada.

03/18

DANCE ENVIRONMENTAL INC.

KEVIN DANCE, M.E.S.
TERRESTRIAL BIOLOGIST AND PROJECT MANAGER

EDUCATION

- M.E.S., Masters of Environment and Resource Studies, 2011; University of Waterloo.
  Thesis Title: "Raptor Mortality and Behavior at Wind Turbines Along the North Shore of Lake Erie During Autumn Migration 2006-2007"
- B.E.S., Honours Bachelor of Environment and Resource Studies with Parks Option, 2006; University of Waterloo.

CERTIFICATIONS & PROFESSIONAL ASSOCIATIONS

Workshops/Certifications:

- Bat Survey Solutions LLC. Bat Acoustic Fieldwork and Data Management Workshop. Instructors: Janet D. Tyburec and Joseph M. Szewezak (creator of SonoBat and Professor at Humbolt State University, California). February 2016, Punta Gorda, Florida.
- Wildlife Acoustics: Bat Acoustics Training with Dr. Lori Lausen, February 2015, Miami, Florida
- Butternut Health Assessment Workshop, BHA #486, July 16, 2014.
- Dragonfly and Damselfly Identification Workshop, 2013, Guelph Arboretum.
- OMNR, Ontario Wetland Evaluation System, Northern Manual and Southern Manual. North Bay, 2012
- OMNR Ecological Land Classification for Southern Ontario, Lindsay, 2010
- Diploma of Environmental Assessment, University of Waterloo, 2006
- Transportation of Dangerous Goods, Safety Services Canada, 2008
- Member, Bird Studies Canada (BSC)
- Member, Ontario Field Ornithologists (OFO)
- Member, Kitchener-Waterloo Field Naturalist Club (KWFN)

AREAS OF PROFESSIONAL EXPERIENCE

Kevin Dance has over 10 years of consulting experience on a wide range of projects throughout Ontario. Kevin specializes in inventories, evaluations, research, and impact studies of natural resources. He is experienced in identifying important natural features and evaluating the significance and sensitivity of these features. Kevin regularly works with multidisciplinary study teams focusing on the management of terrestrial and wetland ecosystems.

Terrestrial Vegetation and Wildlife Studies

Kevin has worked on various studies investigating a variety of wildlife habitats, determining wildlife populations including numbers and seasonal trends and monitoring of long-term impacts of developments on species. Kevin has conducted a wide range of monitoring surveys and inventories to identify the presence of wildlife on study sites as well as species specific guided surveys for Species at Risk and Species of Conservation Concern including:
Bobolink, Barn Swallow, Bank Swallow, Eastern Meadowlark, American Badger, Eastern Milksnake, Blanding's Turtle, Wood Turtle, Jefferson Salamander, Common Nighthawk, Whip-poor-will, Henslow's Sparrow, Short-eared Owl, Least Bittern, Eastern Milksnake, and all Endangered *Myotis* bat species.
He has completed numerous detailed vegetation community mapping inventories and conducted vegetation monitoring at permanent sample plots, as well as transects and random sample

Address: #807566 Oxford Rd. 29, R.R. #1 Drumbo, ON N0J 1G0
Tel. (519) 463-6156 Email: kevin_dancenv@rogers.com

quadrats to assess short-term and long-term impacts of developments on vegetation. Kevin is trained and experienced in applying the Ecological Land Classification System in projects in Southern Ontario to delineate, describe and map vegetation communities.

Kevin's specific terrestrial expertise includes:

- wildlife and vegetation habitat mapping, evaluations, and research.
- surveys of plants, birds, mammals: including bats, reptiles, amphibians, dragonflies and butterflies.
- identification of rare and sensitive species and habitats.
- bat acoustic monitoring and data analysis for Ontario bat species
- development of monitoring methodologies for Species at Risk
- preparing Overall Benefit Plans and Management Plans for Species at Risk
- obtaining permitting from MNR to conduct Jefferson Salamander trapping surveys, and snake coverboard surveys
- over 15 years of bird identification experience
- identification and analysis of potential wildlife corridors.
- short-term and long-term monitoring techniques for flora and fauna

Wetland Studies

Kevin is certified to conduct Ontario Wetland Evaluations and has worked in habitats throughout Ontario using the Ontario Wetland Evaluation System for Wetlands in Southern and Northern Ontario. Kevin has also participated in numerous studies focusing on the impact of development on wetland ecology and function.

Kevin's specific wetland expertise includes:

- inventories and mapping of wetland flora and fauna.
- wetland evaluations using the Ontario Wetland Evaluation System (OWES).
- wetland boundary delineation, and regularly working with relevant Conservation Authority staff to obtain approval of boundaries
- wetland Environmental Impact Studies (EISs).

Aquatic Studies

Kevin has assisted with numerous long-term fish monitoring programs using electrofishing to sample reaches of streams to assess and monitor development impacts to cold water streams. Kevin has experience collecting fish during electrofishing sampling, fish identification, marking and measuring. He also has experience identifying aquatic and wetland vegetation as well as collection of aquatic habitat data including stream depth, temperature, stream bed composition, flow speed and invertebrate sampling. Kevin has assisted with electrofishing surveys and aquatic habitat assessments within Wellington County and the Region of Waterloo.

Renewable Energy Projects:

Kevin has extensive experience conducting and organizing both pre-construction and post-construction studies at wind farms in Ontario, Manitoba and Alberta. Kevin has been developed monitoring methodologies for mortality searches, scavenger removal trials and searcher efficiency studies. Kevin has been involved in post-construction studies at four large scale wind farms and has conducted pre-construction studies at over a fifteen wind farms throughout Ontario, Manitoba and Alberta.

Kevin's specific renewable energy expertise includes:

- development of mortality search methodologies and conducting mortality searches, organizing and conducting scavenger removal studies and searcher efficiency trials
- identification of bird and bat fatalities
- developing study methods for pre-construction wind farm studies, including: migration surveys (dawn and dusk), daytime soaring surveys, waterfowl surveys, shorebird surveys, winter raptor and diurnal owl surveys, walking transect surveys, and driving transect surveys.

Address: #807566 Oxford Rd. 29, R.R. #1 Drumbo, ON N0J 1G0
Tel. (519) 463-6156 Email: kevin_dancenv@rogers.com

EMPLOYMENT HISTORY

Terrestrial Biologist and Project Manager
Dance Environmental Inc., Drumbo, Ontario. 2011 to present

Terrestrial and Wetland Biologist
Natural Resource Solutions Inc., Waterloo, Ontario. 2008 to 2011

Environmental Scientist
Stantec Ltd., Guelph, Ontario. 2006 to 2007

Avian Field Technician –Breeding ecology and impacts of urban development on Wood Thrush in the Region of Waterloo. Bird banding crew leader, nest searcher, nest monitoring.
Canadian Wildlife Service and University of Waterloo, Waterloo, Ontario 2003 to 2005

Terrestrial Biologist
Dance Environmental Inc., Drumbo, Ontario 2001 to 2003

PUBLICATIONS, PRESENTATIONS, AWARDS

Dance, K.S. 2017. Bats in Urban Natural Areas: A case Study of Kitchener Natural Areas. Oral Presentation. Nature in the City Speaker Series, Kitchener Public Library. November 15, 2017.

Dance, K.W., K.S. Dance, & M.B. Dance. 2012. Giant Ragweed (*Ambrosia trifida*) as a Food Source for Autumn Migrants and Winter Birds in the Grand River Basin. Ontario Birds 30(3):148-164.

Dance, K.S. 2012. Manipulation of Caterpillars for Consumption by Eastern Bluebirds. Ontario Birds 30(2):102-108.

Dance, K.W., K.S. Dance. 2012. Wetlands: What are they Good For? Oral Presentation. Princeton Historical Society. Princeton, Ontario. September 24, 2012.

Dance, K.S. 2011. "Raptors and Wind Farms". Oral Presentation. Ruthven Park 2nd Annual For The Birds Festival. September 17, 2011.

Dance, K. S. 2010. On the Wind: A Discussion of Raptors and the Wind Industry. Oral Presentation. Owen Sound Field Naturalist Club (OSFN). September 9, 2010.

Dance, K. S., Dance, K. W. 2010. "Raptors on the Wind". Oral Presentation. Kitchener-Waterloo Field Naturalist Club (KWFN). March 22, 2010.

Dance, K. S., Dance, K. W. 2010. Review of Raptor and Turbine Interaction Literature: the Case of the Erie Shores Wind Farm. Oral Presentation. RARE Charitable Research Reserve, Cambridge, ON. January 23, 2010.

Dance, K. S., R. James, L. Friesen, S. Murphy. 2009. "Raptor Behavior and Mortality (Erie Shores Wind Farm)". Poster Presentation. Canadian Wind Energy Association Annual Conference & Exhibition. September 20-23, 2009.

Dance, K. S., R. James, L. Friesen, S. Murphy. 2009. "Migrant Raptor Behavior and Mortality (at the Erie Shores Wind Farm)". Poster Presentation, 3rd place winner. A.D. Latornell Conservation Symposium. Nottawasaga, Ontario.

Do We Need Another Pit?
Are There Better Alternatives to Concrete/Asphalt

Residents Aren't Saying There is No Need for Aggregate.

Scrutinize every application with strict focus on public and environmental risks.

Do not allow aggregate licenses to be approved in areas with a specific density of homes within a 3-kilometre radius.

Expect that new technology is used to monitor air, water, dust, noise and blasting. Monitored by the MNRF, paid by aggregate operators, with oversite from all other government agencies.

No Need to Show Need

The Provincial Policy Statement 2020 retains the controversial statement that the "aggregate industry has "no need to show need" when applying for new aggregate licenses or expansions"

"enough quarries had been already opened to supply Ontario long into the future, somewhere above the 100-year mark"

"measuring the use from licensed pits, active and dormant, against more current and accurate predictions of need for virgin aggregate" GravelWatch Ontario

Eco-Friendly Alternatives To Traditional Concrete

ASHCRETE

BLAST FURNACE SLAG

PAPERCRETE OR FIBROUS CONCRETE

CONCRETE DEBRIS

POST-CONSUMER GLASS

PLASTIC WASTE

New Innovations that Positively Impact our Environment

Permeable Pavement

Mass Timber

Local Solutions in St. Thomas and Ayr

Supported by FedDev

Sent from my iPhone

Good evening Council, Staff, Fellow Delegates, and citizens joining in tonight, from the safety of your homes.

My name is Aaron Fewkes and I join you this evening, representing The Community Players of New Hamburg. I have the pleasure of serving as TCP's President and having been involved with this group since I was a wee little lad, I remain proud of our foundations, current commitments to Wilmot and the aspirations this group of performing artists continues to dream of for ourselves but more importantly, our community.

While I know many of you around the Zoom horseshoe will be familiar with TCP, some at home tonight may not be as aware, so I will begin there, briefly. TCP is a non-profit community theatre group operating in Wilmot Township. We are a registered Canadian charity whose mandate is to present "community theatre at its very best." TCP was founded in 1984 by a group of enthusiastic individuals at the Trinity Lutheran Church in New Hamburg to celebrate their 150th anniversary through theatrical performance. Over 37 years, we have evolved into The Community Players or more affectionately, "TCP." In 2000, we began performing our large-scale Spring musicals on the New Hamburg arena floor. 14 years later we extended our season to include a smaller, non-musical offering produced in the New Hamburg Community Centre. Each year, over three weekends of shows, we welcome approximately 6400 theatre-going patrons to downtown New Hamburg.

Much of TCP's success is based on the musicals and plays we tackle. We transform unexpected spaces into unique ones and our greatest advantage to do so is through our ability to engage volunteers. Each year it takes approximately 150 volunteers - those are Leadership, Production, actors, orchestra, backstage, and front of house teams - contributing 150,000 volunteer hours to bring our shows to the stages in Wilmot. Our volunteer base ranges from 37 years of involvement to brand new or familial to individual involvement.

The generosity of local partners and strong ticket sales have always been a reality of TCP. Since 2016, TCP's partnership program has grown 300%. These successes, coupled with grant funding have allowed TCP to make intentional investments into capital assets such as staging, audience riser, and microphone purchases. Arena renovations - at a cost of $180,000 - left our savings decimated. However, we have restored these savings to a point where we feel confident earmarking money for capital projects once again. We are looking to partner with those who see the potential in TCP and the strength we have acquired through our proven track record, on whatever level that is: artistic, operational, or community-focus.

The year that was 2020, affected everyone greatly, each in a different way. In March 2020 at the onset of the pandemic, TCP's Leadership and Directing Teams made the decision to postpone our half-blocked and ready-to-go production of Beauty and the Beast. While the weight of that decision on our foundation of volunteers was heavy, it was the right, safe decision. In 2020 we pivoted to produce an online Spring Revue in May and a Holiday Special in December. Each of those opportunities was a chance for us to bring warmth to people's homes at no cost to the viewer. TCP's model is one of nimbleness and the leadership of our volunteers through this year has remained strong. Did we lose money? Yes. But did our TCP Family respond when we asked? Yes, and enough to see our investments untouched until the end of 2023 if we did nothing between now and then.
But TCP is not known for sitting on its haunches.

Planned for June 2021, TCP is pursuing outdoor, live theatre. We are calling it "Take Two: A series of two-person plays presented by TCP." Five shows will be presented over two weekends, adhering to health guidelines at the time. I'd like to ask you all to cross your fingers please...and toes. Casting has just occurred for all five shows - to which a record number of auditions were accepted electronically - and rehearsals will begin online before transitioning to in-person as late as possible.

That is who TCP is, where we have been, how COVID-19 has affected our organization and where we are headed artistically next. But: Why is TCP presenting tonight?

In Fall 2019, Wilmot Township partnered with TCP in application for federal and provincial funding - the Investing in Canada Infrastructure Program. The funding was to cover a proposed 6.75 million dollar reconstruction of the New Hamburg Arena. Within this application was an approximately $1 million provision which would have seen an additional 2800 sq feet of storage added for TCP at this location. This additional space, coupled with other provisions - such as booking alignments, other available space within the facility, etc - would have accommodated and consolidated TCP's current operational needs in one location. While our model is nimble, it can also be taxing on an entirely volunteer-run organization; the logistics are unbelievable unless you've experienced it. I want it to be clear tonight that in the submission of the ICIP grant, TCP agreed to cover the Township's portion of the additional square footage and made a $250,000 financial commitment to Wilmot. We also provided a list of benefits to the arts community if such a facility were supported through funding, which staff used in the application. As we all know, that application was denied funding and therefore, apart from the ongoing third ice pad discussions, discussions have halted.

Until last week when TCP requested to talk to staff, to debrief the ICIP application. Thank you to Mr. Whittington, Mr. Kelly, and Ms. Jackson for their time. From their advice and discussion TCP is moving toward getting a better understanding of the tangible and intangible impacts we have on Wilmot and the communities of people we serve. We will also be pursuing a business feasibility study which will bring greater clarity on our needs for the future.

Let me say it again tonight, in open council: TCP wants to partner with those who see the potential in TCP as well as the arts, culture and heritage groups in our rural community. While we remain thankful for the support of staff with the operational aspects of all that volunteer groups do in the community, volunteer groups also see and feel the structure you operate in: strategic plans, master plans, work programs. TCP feels that direction and commitment needs to be started at the council level for greatest success; we are here tonight to recommit ourselves and hope that you will do the same. After all, I am sure all members of council will agree that we live in a pretty awesome, arts-culture-and-heritage-rich community that deserves vision and support.

On those grounds...

The 2021 Work Program presented this evening has been built to achieve alignment between the Township's strategic plan, master plans, and needs studies.

After reviewing the newest version of Wilmot's strategic plan, the Arts & Culture master plan, the previously-completed ice needs study, and in anticipation of Monteith Brown's third ice pad conceptual design and location analysis, TCP believes that the 2021 Work Program being discussed tonight presents the perfect opportunity for council to improve quality of life, community engagement, and economic prosperity for Wilmot.

TCP is here this evening to actively and specifically ask for council's support in having the 2021 Work Program amended to include:

That staff will work with TCP in pursuit of finding a feasible, permanent location for an integrated production facility specific to TCP's needs in growth and the possibility for additional community usage but specifically for arts, culture and heritage groups.

Thank you for your time. I would be happy to answer any questions or receive comments that you may have.

Zone Change Application 07/20 Revised
Caiden-Keller Homes Inc. / Dryden, Smith & Head Planning Consultants
Part of Lot 27-28, Plan 532A
18 Hincks Street, New Hamburg

One lot of land in an established neighbourhood.
How much is too much development?

Ceri Nelmes
10 Steinman Street, New Hamburg

Your Vote Matters to All Residents in Wilmot Township

18 HINCKS STREET | PROPOSED DEVELOPMENT

Ceri Nelmes

Mayor Armstrong & Council

It matters because...

you buy property in the Township because you love it, you do your research on the neighbourhood, but you don't expect a single family dwelling, in an established neighbourhood, will get knocked down to be replaced by a six unit development.

All current and future residents of the township should be aware that the home beside them could be knocked down and completely change their neighbourhood and the enjoyment of their homes.

Wilmot could be seen as a place for a cash grab rather than a safe, strong, welcoming community that cares for it's history and it's existing residents. Residents need to feel like they matter.

Personal privacy and safety of residents could be at risk by developers with a general disregard for rules, the community, and its values just so they can profit.

How many minor variances and changes make a major change?

This proposal is about changing the established rules with a multitude of variances (including smaller size residences) to sever a lot to jam more residences than is actually allowed in your planning rules without variances. I believe there are rules and regulations for the best interests of all parties and shouldn't be predicated on the amount of revenue developers can generate for themselves – especially those who have already demonstrably bullied and impacted the safety of the New Hamburg residents and ignored the rules already put in place by the Township.

If all of this goes through, what does it say to residents?

- That the current planning rules don't matter because they can all be changed? (This isn't A variance.)
- That the intent isn't to have a small-town community feel, but to jam houses in, no matter what the local residents want? Your voice doesn't matter?
- That dollars, not people, matter here?

If this project goes through, it allows anyone to come in, change the neighbourhood, for profit, and leave the residents and the Township with the fall out.

Square peg into round hole?

I love New Hamburg.

I loved that my first day here, I saw a group of small children playing outside without Parents. I love that Nith Valley Butcher keeps lemon tarts for me every week for my 83 year old Mother (and has the best bacon), the Goco team helped me open cans and fix the Velcro on my sling when I broke my arm, that Cindy from the New Hamburg Vet Clinic came to my house when my Hurricane Katrina rescue dog had to be put down and then called a few days later to see how I was doing, that the two Kathy's from Skowron Decorating and Kathie Jordan Design always spend time helping me solve design issues for my century home, the Home Hardware in town is truly a wealth of knowledge (and oddly have everything), that I can get Fish n Chips on Friday from Scran and Dram in a literal five minutes, that the trails are so amazing that someone has carved a seat from a stump, that there is rollerskating on Friday nights, that Nithy's Emporium sponsors a virtual PokemonGo gym for kids, that the Remembrance Day events are so heartfelt, that I get to hear hooves clop down Waterloo Street, the dog park (with Pixie the real owner of the park), the tennis courts, the river with it's amazing water wheel, the trout at Puddicombe House and smoked chicken salad at Adam Bremmners and my neighbours – who are quiet, respectful and care. That residents give so freely to the homeless and offer to help anyone during Covid.

BUT NOW I DO NOT FEEL SAFE AND THIS ISN'T WHAT I SIGNED-UP FOR

I am leaving New Hamburg 100% because of this development.

I have nowhere to go, as of now.

I do not believe the developer will respect the neighbours during construction/demolition. I cannot afford my livelihood to be threatened because I work from home.

I chose to still speak today because I care about my home from 1885. I care about the neighbourhood, and people of New Hamburg.

NIMBY? NIMH?

I don't have a backyard so does that make it NIMH? Not in MY House?

Ihis development isn't being built beside my house, it is literally beside my bedroom, bathroom, living room, dining room. If it was the side of my house it wouldn't be so invasive and feel creepy and unsafe.

18 Hincks Street residents can look into my living space - 6 feet away!!! Not a stairwell or hallway. The length of a male.

The greatest part of my backyard (9ft) is now apparently smaller (6ft). My view becomes people getting in and out of their one car residence. and one parking width away, a brick wall.

How are there not exceptions to planning in cases like this? For safety?What if I had kids? Blackout curtains? For privacy and safety, now my home becomes a cave and greatly impacts the enjoyment of my home and access to natural light.

RECOMMENDED DISTANCE TO SIT BACK FROM YOUR TV

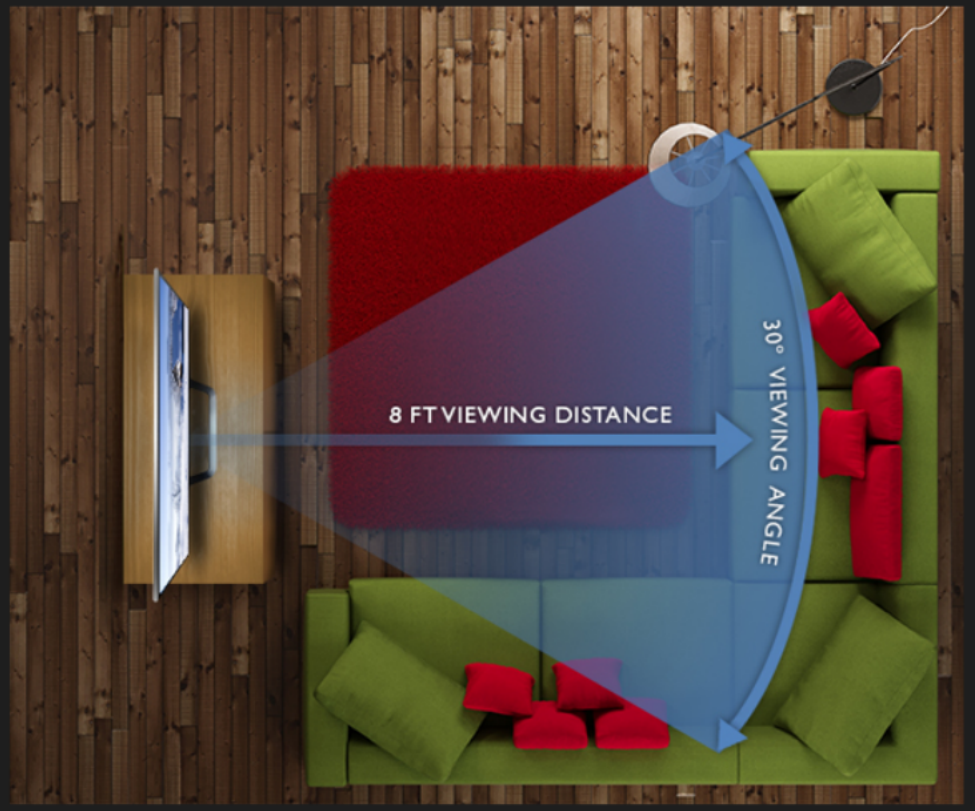


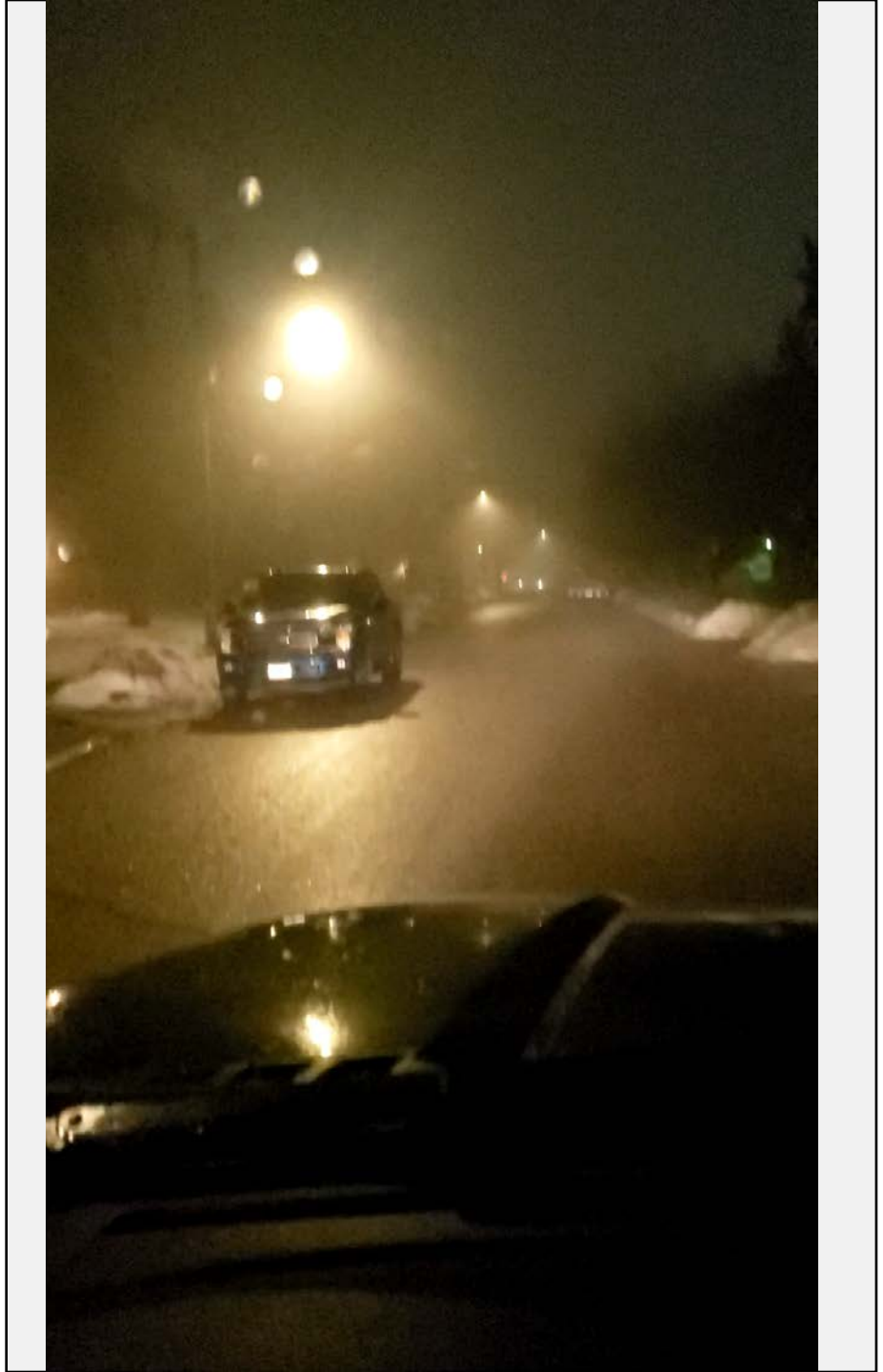
IMAGE SOURCE:HTTPS://WWW.BHPHOTOVIDEO.COM/EXPLORA/HOME-ENTERTAINMENT/TIPS-AND-SOLUTIONS/SITTING-TOO-CLOSE-YOUR-TV%3F-WHY-DISTANCE-MATTERS#:~:TEXT=A%20GENERAL%20GUIDELINE%20IS%20TO,8.3%20FEET%20FROM%20THE%20SCREEN.

Nov. 27, 2020 Text messages

Hey Carrie, Corey from Caiden Keller homes I own the adjoining property 18 Hanks my surveyors were there the other day while serving they found out that your fence sits quite a bit on my property which is okay , however they just want it to gain access to the portion of my property that is restricted by your fence so they could finish off the survey.
I'm asking for your permission to allow them to do so, if not I'm going to have to actually take down the fence that's on my property to allow them on the portion of my property that is restricted by your fence please let me know I would like to avoid having to rip down the fence on you just need simple access.

I am not sure why you are threatening or bullying me. I had a man knock on my door without warning, while I was on a conference call. Maybe, you could have given us a heads-up that someone was coming? Also, your text could have been nice to ask without threatening. This is my home, and my privacy and I have the right to protect it. It is not personal.

This is our livelihoods and safety. What will happen during demolition & construction? Are there rules and recourse to protect us?



The blatant disregard for rules includes asking you to bend the rules, in the way of variances and severances.

Feb 28, 2021 9:38pm

Parking is a major issue with the neighbourhood with this proposal, yet they are asking you to vote to change the rules while they don't abide by the existing ones?

(What happens when they are not seeking approval?)

People matter. We need your help.

Please do not approve the severance based on its plethora of variances of literally every part of the plan – how many variances make a major change? Without the severance perhaps the developer could centralize the development and provide more parking?

Please hold the developer to task with guidelines of working hours, notice to residents during construction and police them.

Please ask the developer to provide a fence to all neighbouring properties.

Please ask the developer to keep trees as they said they would and address the other items from my last presentation.

Is there an environmental plan to protect neighbours from lead paint, asbestos, any other contaminants during demolition?

Please provide a plan for recourse for the neighbours if the developers cut off internet, power, are loud during meetings, etc. to neighbours that work from home and lose portions of their livelihoods during construction.

Thank you, I've loved living here.

Thank You

Ceri Nelmes

519.654.6132

cerianelmes@gmail.com