THE CORPORATION OF THE TOWNSHIP OF PUSLINCH
December 4, 2019 COUNCIL MEETING

A G E N D A

DATE: Wednesday December 4, 2019
REGULAR MEETING: 1:00 P.M.

≠ Denotes resolution prepared

1. Call the Meeting to Order

2. Disclosure of Pecuniary Interest & the General Nature Thereof.

3. **CLOSED ITEMS**

   a. None

4. Adoption and Receipt of Minutes of the Previous Meeting.≠

   (a) November 6, 2019 Special Council Meeting
   (b) November 6, 2019 Closed Council Meeting
   (c) November 7, 2019 Special Council Meeting
   (d) November 7, 2019 Closed Council Meeting
   (e) November 14, 2019 Special Council Meeting
   (f) November 14, 2019 Closed Council Meeting
   (g) November 20, 2019 Regular Council Meeting
   (h) November 20, 2019 Closed Council Meeting

5. Business Arising Out of the Minutes.

6. **PUBLIC MEETINGS**

1. None

7. **COMMUNICATIONS**

   1. Report from Conservation Halton with respect to the Proposed 2020 Plan review and permit Application Fees, dated November 21, 2019.
      a. Conservation Halton Permit Fee Notes 2020

b. Conservation Halton Plan review Fees 2020

2. Correspondence from the Ministry of Finance with respect to the release of the 2020 Ontario Municipal Partnership Fund (OMPF), dated October 24, 2019.

3. **Intergovernmental Affairs≠**

(a) Various correspondence for review.

8. DELEGATIONS / PRESENTATIONS ≠

1:05 p.m. – Mark Dube with respect to a property standards matter.≠

1:15 p.m. – Sandra J. Pady with respect to the speed limit on Concession 4.≠

2:00 p.m. – Hassaan Basit, CAO, Conservation Halton 2020 Budget presentation.≠

9. REPORTS

1. **Planning and Building**

(a) County of Wellington Planning Report – Final By-laws for Approval – Farhi Holding Corporation Township of Puslinch Zoning By-law Amendment File # D14/FAR ≠

2. **Administration Department**

(a) Report ADM-2019-029 Updates to the Wellington County Chapter of the Grand River Source Protection Plan ≠
(b) Report ADM-2016-001 Council Vacancy Policy As Amended ≠
(c) Report ADM-2019-028 Annual By-law Enforcement Occurrence Update ≠

3. **Finance Department**

(a) FIN-2019-033 - Municipal Modernization Program - Intake 1 ≠
(b) FIN-2019-034 - 2020 User Fees and Charges By-law – Final ≠

4. **Puslinch Fire and Rescue Services**

(a) None

5. **Roads & Parks Department**

   (a) None

6. **Recreation Department**

   (a) None

7. **Mayor's Updates**

10. NOTICES OF MOTION

None

11. COMMITTEE MINUTES

None

12. MUNICIPAL ANNOUNCEMENTS

13. UNFINISHED BUSINESS

14. BY-LAWS ≠

(a) BL2019-067 Farhi Holdings Corporation 19/85 Being a by-law to amend by-law number 19/85, as amended, being the zoning by-law for the Township of Puslinch (Concession 2 Part Lot 26)

(b) BL2019-068 Farhi Holdings Corporation 023/18 Being a by-law to amend by-law number 023/18, as amended, being the zoning by-law for the Township of Puslinch (Concession 2 Part Lot 26)

(c) BL2019-069 - User Fees and Charges By-law and to repeal 056-2018

15. **CONFIRMING BY-LAW ≠**

(a) By-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch.

16. **ADJOURNMENT ≠**

M I N U T E S

DATE: Wednesday, November 6, 2019
CLOSED MEETING: 9:00 A.M.
SPECIAL MEETING: 9:00 A.M.

The November 6, 2019 Special Council Meeting was held on the above date and called to order at 9:00 a.m. at Wellington County Library, Puslinch Branch 29 Brock Road S.

1. **ATTENDANCE:**

Mayor James Seeley
Councillor Matthew Bulmer
Councillor Jessica Goyda
Councillor John Sepulis

STAFF IN ATTENDANCE:

1. Patrick Moyle, CAO/Clerk

2. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

None

3. **CLOSED MEETING**

Council was in closed session from 9:02 a.m. to 12:45 p.m.

Resolution No. 2019-395: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk.

CARRIED

Resolution No. 2019-396: Moved by Councillor Bulmer and Seconded by Councillor Sepulis

THAT Council moves into open session.

CARRIED

Resolution No. 2019-397: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council receives the:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk; and

That staff proceed as directed.

CARRIED

7. CONFIRMING BY-LAW

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

Resolution No. 2019-398: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That the following By-law be taken as read three times and finally passed in open Council:

By-Law 062-2019 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 6th day of November 2019.

CARRIED

8. ADJOURNMENT:

Resolution No. 2019-399: Moved by Councillor Sepulis and
Seconded by Councillor Goyda

That Council hereby adjourns at 12:47 p.m.

CARRIED

_____
James Seeley, Mayor

_____
Patrick Moyle, CAO/Clerk

M I N U T E S

DATE: Wednesday, November 7, 2019
CLOSED MEETING: 1:00 P.M.
SPECIAL MEETING: 1:00 P.M.

The November 7, 2019 Special Council Meeting was held on the above date and called to order at 1:00 p.m. at the Delta Hotel and Conference Centre 50 Stone Road W, Guelph.

1. **ATTENDANCE:**

Mayor James Seeley
Councillor Matthew Bulmer
Councillor Jessica Goyda
Councillor John Sepulis

STAFF IN ATTENDANCE:

1. Patrick Moyle, CAO/Clerk

2. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

None

3. **CLOSED MEETING**

Council was in closed session from 1:02 p.m. to 5:30 p.m.

Resolution No. 2019-400: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk.

CARRIED

Resolution No. 2019-401: Moved by Councillor Bulmer and Seconded by Councillor Sepulis

THAT Council moves into open session.

CARRIED

Resolution No. 2019-402: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council receives the:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk; and

That staff proceed as directed.

CARRIED

7. CONFIRMING BY-LAW

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

Resolution No. 2019-403: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That the following By-law be taken as read three times and finally passed in open Council:

By-Law 063-2019 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 7th day of November 2019.

CARRIED

8. ADJOURNMENT:

Resolution No. 2019-404: Moved by Councillor Sepulis and
Seconded by Councillor Goyda

That Council hereby adjourns at 5:32 p.m.

CARRIED

_____
James Seeley, Mayor

_____
Patrick Moyle, CAO/Clerk

M I N U T E S

DATE: Wednesday, November 14, 2019
CLOSED MEETING: 1:00 P.M.
SPECIAL MEETING: 1:00 P.M.

The November 14, 2019 Special Council Meeting was held on the above date and called to order at 1:00 p.m. at Wellington County Library, Puslinch Branch 29 Brock Road S.

1. **ATTENDANCE:**

Mayor James Seeley
Councillor Matthew Bulmer
Councillor Jessica Goyda
Councillor John Sepulis

STAFF IN ATTENDANCE:

1. Patrick Moyle, CAO/Clerk

2. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

None

3. **CLOSED MEETING**

Council was in closed session from 1:02 a.m. to 12:45 p.m.

Resolution No. 2019-405: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk.

CARRIED

Resolution No. 2019-406: Moved by Councillor Bulmer and Seconded by Councillor Sepulis

THAT Council moves into open session.

CARRIED

Resolution No. 2019-407: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council receives the:

(a) Confidential verbal report from Patrick Moyle, Acting CAO/Clerk regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – recruitment for a CAO/Clerk; and

That staff proceed as directed.

CARRIED

7. CONFIRMING BY-LAW

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

Resolution No. 2019-408: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That the following By-law be taken as read three times and finally passed in open Council:

By-Law 064-2019 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 14th day of November 2019.

CARRIED

8. ADJOURNMENT:

Resolution No. 2019-409: Moved by Councillor Sepulis and
Seconded by Councillor Goyda

That Council hereby adjourns at 12:47 p.m.

CARRIED

_____
James Seeley, Mayor

_____
Patrick Moyle, CAO/Clerk

MINUTES

DATE: November 20, 2019
REGULAR MEETING: 7:00 P.M.
CLOSED MEETING: Immediately following the regular meeting

The November 20, 2019 Regular Council Meeting was held on the above date and called to order at 7:03 p.m. in the Council Chambers, Aberfoyle.

1. **ATTENDANCE:**

Mayor James Seeley
Councillor Matthew Bulmer
Councillor Jessica Goyda
Councillor John Sepulis

STAFF IN ATTENDANCE:

1. Patrick Moyle, Acting CAO/Clerk
2. Mary Hasan, Director of Finance/Treasurer
3. Mike Fowler, Supervisor of Public Works and Parks
4. Courtenay Hoytfox, Development and Legislative Coordinator

2. **DISCLOSURE OF PECUNIARY INTEREST & THE GENERAL NATURE THEREOF:**

Councillor Goyda declared a potential pecuniary interest with respect to Communication Item 7(6) Various Compliance Assessment Reports, as a family member operates an aggregate operation in the Township.

ADOPTION OF THE MINUTES:

(a) November 6, 2019 Regular Council Meeting

Resolution No. 2019-410: Moved by Councillor Goyda and Seconded by Councillor Sepulis

That the minutes of the following meetings be adopted as written and distributed:

(a) **November 6, 2019 Regular Council Meeting**

CARRIED

3. **BUSINESS ARISING OUT OF THE MINUTES:**

4. **COMMUNICATIONS:**

(1) Correspondence from the Ministry of Agriculture, Food, and Rural Affairs to Warden Linton and Scott Wilson, CAO Wellington County, dated November 7, 2019.

(2) Correspondence from Ministry of Natural Resources and Forestry with respect to proposed legislative changes dated October 29, 2019.

(3) Correspondence from Halton Region to Premier Ford with respect to the Proposed Changes to the Provincial Policy Statement dated November 5, 2019.
   a. Halton Area Planning Partnership (HAPP) Joint Submission on the Proposed Changes to the Provincial Policy Statement dated October 2019.

b. Halton Region Report No. LPS105-19 Comments on the Proposed Changes to the Provincial Policy Statement: Joint Submission from Halton Municipalities and Conservation Authorities dated October 16, 2019.

(4) Correspondence from LAS AMO Business Services with respect to the Natural Gas Program 2017-2018 Period Reserve Fund Rebate dated October 23, 2019.

(5) Correspondence from the City of Guelph with respect to the City of Guelph Comprehensive Zoning Bylaw Review – Community and Stakeholder Engagement Opportunities dated November 1, 2019.

Councillor Goyda declared a potential pecuniary interest with respect to Communication Item 7(6) Various Compliance Assessment Reports, as a family member operates an aggregate operation in the Township and refrained from discussions and voting on that item.

(6) Various Compliance Assessment Reports
a. Compliance Assessment Report Licence ID# 5654
b. Compliance Assessment Report Licence ID# 5610
c. Compliance Assessment Report License ID # 5709
d. Compliance Assessment Report License ID # 15338
e. Compliance Assessment Report Licence lD # 624864
f. Compliance Assessment Report Licence lD # 5497
g. Compliance Assessment Report Licence lD # 624952
h. Compliance Assessment Report Licence lD# 625284
i. Compliance Assessment Report Licence lD# 17600
j. Compliance Assessment Report Licence lD # 129817
k. Compliance Assessment Report Licence lD # 625189
l. Compliance Assessment Report Licence lD # 5737
m. Compliance Assessment Report Licence lD # 5520
n. Compliance Assessment Report Licence lD# 5563
o. Compliance Assessment Report Licence lD# 5631

7. Intergovernmental Affairs

Resolution No. 2019-411: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That the Intergovernmental Affairs correspondence items listed on the Council Agenda for NOVEMBER 20, 2019 Council meeting be received.

AMO Watch File – 7(24) – October 24, 2019 – Council directed staff to contact the Association of Municipalities of Ontario to delegate to Council regarding the Municipal Group Buying Program including cooperative purchasing opportunities for fire trucks.

AMO Watch File – 7(27) – October 31, 2019 – Council directed staff to arrange delegations at the ROMA Conference to the following Ministries:

- **Ministry of Natural Resources and Forestry related to the amendments to the Aggregate Resources Act;**
- **Ministry of the Environment, Conservation and Parks for Water Taking Permits and levies;**
- **Ministry of Transportation with respect to the Halton truck station and heavy truck restrictions;**
- **Ministry of Municipal Affairs and Housing related to growth challenges in Puslinch**

CARRIED

8. DELEGATIONS/PRESENTATIONS

7:05 p.m. –Jen Baker, Hamilton Naturalists' Club, with respect to severance fees.

Resolution No. 2019-412: Moved by Councillor Goyda and Seconded by Councillor Sepulis

That Council receives the presentation by Jen Baker, Hamilton Naturalists' Club; and

That Council in principle supports the request to waive the County fees contingent on the Township not absorbing the fees; and

That if the severance is successful, that Council direct staff to send a letter of thanks to the property owner.

CARRIED

9. REPORTS:

1. **Puslinch Fire and Rescue Services**

(a) FIR-2019-010 - Cost Recovery Services provided by Fire Marque

Resolution No. 2019-413: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Report FIR-2019-010 regarding the Cost Recovery Services provided by Fire Marque Inc. be accepted for information purposes; and

That Council consider enacting a by-law authorizing Cost Recovery (Fees) with Respect to Fire Department Specific Response for services and supplies used by Puslinch Fire and Rescue Service at emergency events (Schedule 'A' sample by-law); and

That Council consider amending the Township of Puslinch User Fees and Charges By-law Schedule E – Fire and Rescue Services Municipal Rates and Service Charges to account for this new type of cost recovery.

CARRIED

(b) FIR-2019-011 Puslinch Fire and Rescue Service's Emergency Response Update

Resolution No. 2019-414: Moved by Councillor Goyda and Seconded by Councillor Sepulis

That Report FIR-2019-011 with respect to Puslinch Fire and Rescue Service's Emergency Response Update be received for information.

CARRIED

2. **Finance Department**

(a) Cancellation, Reduction or Refund of Taxes chapter 25, section 357 or 358 of the Municipal Act, 2001.

Resolution No. 2019-415: Moved by Councillor Sepulis and Seconded by Councillor Goyda

That Council does hereby authorize the applications for Cancellation, Reduction or Refund of Taxes chapter 25, section 357 or 358 of the Municipal Act, 2001 as follows:

Year	Application #	Roll #	Write Off Amount
2018	04/19	3-16800	$ -3.32
2019	04/19	3-16800	$ -9.78
2018	06/19	4-02850	$ -242.06
2019	07/19	4-02850	$ -455.98
2019	08/19	5-01605	$ -963.58
2019	09/19	6-02206	$ -663.79

CARRIED

3. **Administration Department**

(a) Report ADM-2019-026 Revised Proposed Property Standards By-law Report

Resolution No. 2019-416: Moved by Councillor Goyda and
Seconded by Councillor Sepulis

That Report ADM-2019-026 regarding the Proposed Property Standards By-law be received; and That the input received shall be incorporated into the revised Property Standards By-law and brought back for review at a future Council meeting;

Council directed staff to include clarification in the proposed by-law on the following:

- **natural areas/natural processes**
- **definition options for yards**
- **interior property standards wording for owner-operated buildings compared to tenants in rental properties**
- **more clearly defining excessive weeds and grass**
- **Enforcement will apply when property issues are a safety risk and severe in nature in addition to complaint driven enforcement**
- **include definitions for heritage properties as noted in the Guelph Eramosa by-law should the Township designate heritage properties in the future.**

CARRIED

(b) EM-2019-01 2019 Annual Emergency Management Programme Report

Resolution No. 2019-417: Moved by Councillor Sepulis and
Seconded by Councillor Goyda

That Council accepts the annual status report on the Township's Emergency Management Programme for 2019.

CARRIED

(c) 2019 Puslinch Township Annual Exercise After Action Report

Resolution No. 2019-418: Moved by Councillor Goyda and
Seconded by Councillor Sepulis

That the 2019 Township of Puslinch Annual Exercise After Action Reports be received for information.

CARRIED

(d) County of Wellington Report on the Rural Green Property Addressing Signage

Resolution No. 2019-419: Moved by Councillor Sepulis and
Seconded by Councillor Goyda

That County of Wellington Report on the Rural Green Property Addressing Signage be received.

CARRIED

4. **Planning and Building Department**

a. None

5. **Roads & Parks Department**

(a) PW-2019-004 Roads Ownership-Rhodes Road and Puslinch Lake Area Roads Puslinch Lake Report.

Resolution No. 2019-420: Moved by Councillor Goyda and
Seconded by Councillor Sepulis

That Report PW-2019-004 regarding the ownership of Township roads around Puslinch Lake, and specifically Rhodes Road, be received; and

That staff together with the County of Wellington develop a policy detailing the process of assuming a municipal road allowance as part of the upcoming County Official Plan update.

CARRIED

6. **Recreation Department**

None

7. **Mayor's Updates**

The Mayor gave an update regarding the spray paint vandalism occurring Morriston.

That Mayor gave an update from his meeting with MPP Michael Chong and MP Ted Arnott regarding the grant funding for the soccer fields and lighting.

10. NOTICE OF MOTION:

None

11. COMMITTEE MINUTES

(a) March 4, 2019 Puslinch Emergency Management Program Committee Meeting

(b) June 3, 2019 Heritage Committee Meeting
(c) June 17, 2019 Special Heritage Committee Meeting
(d) October 8, 2019 Committee of Adjustment Meeting
(e) October 8, 2019 Planning and Development Advisory Committee Meeting
(f) October 8, 2019 Special Heritage Committee Meeting

Resolution No. 2019-421: Moved by Councillor Bulmer and Seconded by Councillor Goyda

That the minutes of the following committee meetings be adopted as written and distributed:

(g) March 4, 2019 Puslinch Emergency Management Program Committee Meeting
(h) June 3, 2019 Heritage Committee Meeting
(i) June 17, 2019 Special Heritage Committee Meeting
(j) October 8, 2019 Committee of Adjustment Meeting
(k) October 8, 2019 Planning and Development Advisory Committee Meeting
(l) October 8, 2019 Special Heritage Committee Meeting

CARRIED

12. MUNICIPAL ANNOUNCEMENTS

(a) Councillor Sepulis gave an update on the High Speed Internet Committee and provided the new website for more information: puslinchhighspeed.ca
(b) Puslinch Santa Claus Parade this Sunday November 24, 2019

13. UNFINISHED BUSINESS

14. BY-LAWS:

(a) BL2019-065 - Chief Administrative Officer / Clerk

Resolution No. 2019-422: Moved by Councillor Bulmer and Seconded by Councillor Goyda

That the following By-laws be taken as read three times and finally passed in open Council:

(a) **BL2019-065 - Chief Administrative Officer / Clerk Being a by-law to Appoint a Chief Administrative Officer / Clerk for the Corporation of the Township of Puslinch and to repeal by-law No. 19/13**

CARRIED

CLOSED SESSION

Council was in closed session from 9:27 p.m. to 9:44 p.m.

Resolution No. 2019-423: Moved by Councillor Bulmer and Seconded by Councillor Goyda

That Council shall go into closed session under Section 239 of the Municipal Act for the purpose of:

a) Confidential verbal report from Interim CAO/Clerk Patrick Moyle regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – personnel matter.

Resolution No. 2019-424: Moved by Councillor Bulmer and
Seconded by Councillor Goyda

That Council moves into open session.

CARRIED

Resolution No. 2019-425: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That Council receives the:

a) Confidential verbal report from Interim CAO/Clerk Patrick Moyle regarding personal matters about an identifiable individual, including municipal or local board employees and labor relations or employee negotiations – personnel matter; and

That staff proceed as directed.

CARRIED

15. CONFIRMING BY-LAW

(a) By-Law to confirm the proceedings of Council for the Corporation of the Township of Puslinch

Resolution No. 2019-426: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That the following By-law be taken as read three times and finally passed in open Council:

By-Law 066-2019 being a by-law to confirm the proceedings of Council for the Corporation of the Township of Puslinch at its meeting held on the 20 day of November 2019.

CARRIED

16. ADJOURNMENT:

Resolution No. 2019-427: Moved by Councillor Bulmer and
Seconded by Councillor Sepulis

That Council hereby adjourns at 9:46 p.m.

CARRIED

_____
James Seeley, Mayor

_____
Karen Landry, CAO/Clerk

Conservation Halton

November 2019

REPORT TO: Conservation Halton Board of Directors

REPORT NO: # CHBD 11 19 08

FROM: Barbara J. Veale, Director, Planning and Watershed Management

DATE: November 21, 2019

SUBJECT: **Proposed 2020 Plan Review and Permit Application Fees**
CH File Number: ADM 049

Recommendation

THAT the Conservation Halton Board of Directors **approve the proposed 2020 fees as outlined in the staff report entitled "Proposed 2020 Plan Review and Permit Application Fees," dated November 21, 2019, with an effective date of January 1, 20 2020;**

AND

THAT the Conservation Halton Board of Directors **provide appropriate notice to municipalities and neighbouring conservation authorities; and, post the revised fee schedules to the Conservation Halton website.**

Report

In 2018, Conservation Halton initiated a Rates and Fees Study (Watson Report) undertaken by Watson & Associates Economists Ltd. (Watson) and completed in January 2019. Based on the analysis undertaken by Watson, Conservation Halton was recovering an average of 74% of the annual review cost for all categories of planning applications and 72% of the costs for all categories of permit applications.

In February 2019, the CH Board of Director approved a target cost recovery rate of 100% for the review and processing of planning and permit applications. Major changes were made to the fees, effective March 1, 2019 to achieve a cost recovery close to 100%. Since that time, CH staff asked Watson to review and assess fees for 2020. Watson has recommended that a general 3% fee increase be made, effective January 1, 2020. This increase would cover inflation and increased direct and indirect costs anticipated for 2020.

Other Conservation Authorities within the Greater Golden Horseshoe area are increasing fees by an inflationary rate including the Grand River Conservation Authority, Central Lake Ontario Conservation Authority, and Hamilton Conservation Authority. Others prefer to increase rates less often (but with a higher fee increase), mostly following a bi-yearly schedule.

The proposed 3% increase in fees has been reviewed with the development community through the Halton Chapter of the Building Industry and Land Development Association (Canada) (BILD), as suggested in guidelines provided by the Ministry of Natural Resources and Forestry. A formal response

from BILD was received on November 8, 2019 (Attachment 1). The proposed fee schedules were also shared with Planning Directors within Halton Region for comment. No comments have been received.

In addition to including an inflationary rate of 3%, the fees have been reformatted into three discrete categories: 1) fees for permit applications under *Ontario Regulation 162/06,* 2) fees for planning applications under the *Planning Act*, and, 3) fees for technical reviews not associated with permit or planning applications under 1) and 2). The notes that accompany the fees have been updated and clarified but no substantive changes have been made.

Impact on Strategic Goals

This report supports the Metamorphosis strategic theme of Taking care of our growing communities. The theme is supported by the objective to remain dedicated to ecosystem-based watershed planning that contributes to the development of sustainable rural, urban and suburban communities.

Financial Impact

The fee schedules more accurately reflect the actual cost of processing different types of permit and planning applications and have been structured to meet the 2020 budget for the review of planning and permit applications.

Signed & respectfully submitted:

Barbara J. Veale, Ph.D., MCIP, RPP
Director, Planning and Watershed Management

Approved for circulation:

Hassaan Basit
CAO/Secretary-Treasurer

FOR QUESTIONS ON CONTENT: Barbara J. Veale, 905.336.1158 x 2273; bveale@hrca.on.ca

CONSERVATION HALTON PERMIT FEE NOTES 2020

Development, Interference or Alteration Applications Pursuant to Ontario Regulation 162/06

EFFECTIVE January 1, 2020

Category	Type					2020 Fee
Letter of Permission	*No site visit or technical review*			**PL(a)**	**$**	**260**
(Note 1)	*Technical Site visit **or** technical review*			**PL(b)**	**$**	**505**
	*Technical Site visit **and** technical review*			**PL(c)**	**$**	**1,648**
Private Landowner	*Minor*			**P(a)**	**$**	**505**
Single Residential/Single Farm	*Intermediate*			**P(i)**	**$**	**1,648**
	Major			**P(b)**	**$**	**5,366**
Residential Multi-Unit Lots (RM)	*Minor*	**RM(a)**	**G(a)**	**ICI(a)**	**$**	**1,960**
Local Municipality, Utility (G)	*Intermediate*	**RM(i)**	**G(i)**	**ICI(i)**	**$**	**4,120**
Industrial/Commercial/	*Major*	**RM(b)**	**G(b)**	**ICI(b)**	**$**	**21,285**
Institutional (ICI)	*Major Scale*	**RM(c)**	**G(c)**	**ICI(c)**	**$**	**28,325**
Fill Placement	*Small (≤ 30m³)*			**FP(a)**	**$**	**505**
(Not Associated with a Planning	*Medium (> 30m³ but ≤ 200 m³)*			**FP(b)**	**$**	**3,605**+0.60/m³
Application)	*Large (> 200 m³)*			**FP(c)**	**$**	**12,360**+1.10/m³
Environmental Projects				**EP**	**$**	**130**
Fish Timing Window Extension				**FTW**	**$**	**515**
Red-Line Revisions by CH	*Minor (≤ 2 hr. to complete) (% of current fee)*					**25%**
	Major (> 2hr. to complete)				**$**	**1,585**
Client-Driven Changes	*Minor Changes to applications in progress*					**35%**
(% of current fee)	*Major Changes to applications in progress*					**75%**
	Minor Changes to approved permits					**50%**
	Major Changes to approved permits (new permit required)					**100%**
Technical Resubmissions	*Percentage of current fee for each additional technical submission after 1st resubmission*					**50%**
Additional Site Visit *(Single Residential/Single Farm)*					**$**	**230**
Additional Site Visit *(Major; Major scale) (per visit)*					**$**	**1,875**
Agreements	*(Note 2)*					

CONSERVATION HALTON PERMIT FEE NOTES 2020

Development, Interference or Alteration Applications Pursuant to Ontario Regulation 162/06

EFFECTIVE January 1, 2020

Definitions:

Minor: works are small; no technical studies are required (e.g., accessory buildings less than 20m^2; additions less than 50% floor area; on-title agreement not required; generally involving less than 30 m^3 of fill; small works such as pond outlets, maintenance dredging of intermittent watercourse and simple culvert replacement; minor repairs /maintenance of shoreline protection works).

Intermediate: works require one technical study or detailed plan; an on-title agreement may be required.

Major: works require more than one technical study; an on-title agreement may be required; multi-disciplinary technical review is required

Major Scale: works are significant in scale/scope/complexity (e.g., major creek realignments; bridge crossings; significant shoreline protection works); technical studies are required; multi-disciplinary technical review is required.

Major Changes: Changes to the nature and extent of the development approved by permit including but not limited to: size, location, footprint, number of dwelling units, use of the building or structure, or grading.

Environmental Projects: Land and water stewardship projects for environmental improvement not associated with compensatory or offsetting requirements/arrangements through other approval processes.

Development: Development is defined in the *Conservation Authorities Act* to mean:

- the construction, reconstruction, erection or placing of a building or structure of any kind (e.g., all buildings, including accessory non-habitable structure such as gazebos, decks, storage sheds, docks, stairs, retaining walls, etc.),
- any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the number of dwelling units in the building or structure,
- site grading, or;
- the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere

Alteration: any works that result in changes to a watercourse, wetland or Great Lakes shoreline**.**

Interference: any act or instance which hinders, disrupts, degrades or impedes the natural features or hydrologic and ecologic functions of a wetland or watercourse.

General Provisions:

- All applications must be deemed complete including all technical studies and fees before the submission can be processed.
- Pre-consultation to determine the scale and scope of issues and the technical reports/studies required for the application to be deemed complete is encouraged. The applicant is responsible for undertaking required technical reports/studies. Fees determined through the pre-consultation process, including fees noted in formal checklists, are approximate only and based on the fee schedules in place and information available at the time of pre-consultation. The final fee may change at the time of submission if the technical review requirements have changed due to the availability of new information or if the fee schedule has changed subsequent to the pre-consultation.
- Fees charged are for administration purposes and are non-refundable. Permit applications will be closed if additional information/studies have been requested by Conservation Halton and no submissions have been received from the applicant within one year.
- Conservation Halton reserves the right to charge additional fees, at a rate of 145.00/hr.
- Peer reviews may be required for technical reports, as necessary. The cost of peer review will be charged to the applicant.
- Where an application exceeds one year to process due to other approval processes (e.g., site plan; Niagara Escarpment Development Permit, etc.), it may remain active for a period of two years, if there are no major revisions. Where there are major revisions, a new permit application will be required.
- Except where specifically stated in the fee schedule (e.g., Letter of Permission, Inquiries), permit fees include one site visit. For major or major-scale permits not associated with single residential/single farm applications, the fee includes three site visits. A fee will be charged for additional site visits.
- Permits will be issued for the maximum of two years. Requests for permit issuance beyond the standard two-year time period (up to 5 years) will be considered for large projects such as municipal infrastructure. These permits require approval from the Conservation Halton Board of Directors and will be subject to an additional fee of 50% for each year the permit is valid beyond the standard two-year time period.
- Permit extensions and/or renewals will not be granted. However, applicants may re-apply for re-issuance of a permit for the original approved works in accordance with the most recent technical requirements. An additional fee of 50% of the current fee will be charged for each year the re-issuance of the permit is valid (up to two years). An expired permit is not valid. A new permit is required for any work which extends beyond the expiry date at the current fee rate.
- Permits are issued to current landowners and cannot be transferred to new owners. A change in ownership will require the submission of a new, complete permit application.
- In areas under the jurisdiction of the Niagara Escarpment Commission (NEC), Conservation Halton cannot issue a permit under Ontario 162/06 until a NEC Development Permit or Exemption Letter has been issued.
- Any dispute of fee calculations that cannot be resolved through consultation with Conservation Halton's Senior Manager, Planning and Regulations, Director of Planning and Watershed Management, and/or CAO's office, can be appealed to the Board of Directors:

Notes

1. Letters of Permission are issued for certain activities adjacent to wetlands as per Policies 3.38.4 and 3.39.4 in the *Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document (as amended)* **or** for minor works located within the regulated area but outside of the flood or erosion hazard that are less than 10 m^2 and require a municipal building permit, but no site visit or technical review.

2. **Restoration Agreements** will be applied where violations can be fully removed from the regulated area. An administration fee based on the current applicable category plus a 100% surcharge will be charged, except for fill removal, where an administration fee equal to the base permit application fee for fill placement will be charged. **Compliance Agreements** will be applied for violations that can meet Conservation Halton policies and regulatory requirements. An administration fee based on the current applicable category fee plus a 100% surcharge will be charged.

CONSERVATION HALTON OTHER SERVICES FEES 2020

EFFECTIVE January 1, 2020

CATEGORY	TOTAL FEE
Fees Not Requiring HST	
Solicitor, Real Estate, Appraiser Inquiries *(Note 1)*	**$ 340.00**
Clearance/No Objection Letters *(Private Landowner Single Residential, Single Farm)*	
No Site Visit	**$ 130.00**
With Site Visit *(visual inspection)*	**$ 230.00**
With Site Visit *(staking; field assessment)*	**$ 415.00**
With Site Visit & Technical Review *(includes review of one report; additional reviews are charged at the rate of $670 per submission)*	**$ 67.00**
Pre-Application Requests ***(no permit or planning application has been submitted)*** *(Private Landowner Single Residential, Single Farm) (Note 2)*	
With Site Visit *(visual inspection)*	**$ 230.00**
With Site Visit *(staking; field assessment) (per visit)*	**$ 415.00**
With One Technical Review	**$ 670.00**
Pre-Application Requests *(no permit or planning application has been submitted) (Other) (Note 2)*	
With Site Visit *(visual inspection) (per visit/per staff person)*	**$ 230.00**
With Site Visit *(staking; field assessment) (per visit/per staff person)*	**$ 415.00**
With One Technical Review	**$ 1,875.00**

Fees Requiring HST	FEE	HST	TOTAL FEE
Hard Copy Maps *(per property)*	$ 17.70	$ 2.30	**$ 20.00**
Photocopies *(per sheet up to 11" x17")*	$ 0.88	$ 0.22	**$ 1.00**
Technical Review - EIR/FSS/SIS (or equivalent)			
Base Fee *(≤ 25ha)*	$ 10,513.27	$ 1,366.73	**$ 11,880.00**
Base Fee *(> 25ha but ≤ 50ha)*	$ 21,032.74	$ 2,734.26	**$ 23,767.00**
Base Fee *(> 50ha)*	$ 31,555.75	$ 4,102.25	**$ 35,658.00**
Per gross hectare *(Note 3)*	$ 433.63	$ 56.37	**$ 490.00**
Terms of Reference Technical Review	$ 1,535.40	$ 199.60	**$ 1,735.00**
EA Review *(Notes 4 & 5)*			
Master Plan	$ 12,360.18	$ 1,606.82	**$ 13,967.00**
Individual EA	$ 12,360.18	$ 1,606.82	**$ 13,967.00**
Schedule A or A+	-		-
Schedule B *(or equivalent)*	$ 5,150.44	$ 669.56	**$ 5,820.00**
Schedule C *(or equivalent)*	$ 8,239.82	$ 1,071.18	**$ 9,311.00**
EA Addendum Reports	$ 2,175.22	$ 282.78	**$ 2,458.00**
Niagara Escarpment Plan Amendments (Applicant Driven)	$ 16,482.30	$ 2,142.70	**$ 18,625.00**
Parkway Belt Applications	$ 3,090.27	$ 401.73	**$ 3,492.00**

HST # 10746 2483 RT001

Other Services Fee Notes

1. Solicitor, real estate, or appraiser inquiries for information specific to a PIN (Property Identification Number) will be charged the inquiry fee for each PIN.
2. The pre-application fee will be deducted from the cost of an application, **if** it is received within **one (1) year** of completing the site visit or technical review. Additional technical submissions received for review prior to a formal application will be charged separately and no additional deduction will be made.
3. A gross hectare is calculated based on the geographic extent of the study area.
4. When technical reviews of studies associated with an EA go beyond two submissions, a graduated fee of 25% of the current fee for the third submission and 50% of the current fee for subsequent submissions will be charged.
5. Review fees do not apply for Region of Halton infrastructure projects as the Region funds a CH Regional Infrastructure Team.

CONSERVATION HALTON
PLAN REVIEW FEES 2020

EFFECTIVE January 1, 2020

APPLICATION TYPE	CATEGORY	FEE	HST	TOTAL 2020 FEE
Subdivisions - Residential/Condominium Multi-Residential/Mixed Use *(Note 1)*	Base fee	$ 6,147.79	$ 799.21	**$ 6,947.00**
	Residential per unit/lot (≤ 25 units/lots)	$ 277.88	$ 36.12	**$ 314.00**
	Residential per unit/lot (26-100 units/lots)	$ 223.01	$ 28.99	**$ 252.00**
	Residential per unit/lot (101-200 units/lots)	$ 177.88	$ 23.12	**$ 201.00**
	Residential per unit/lot (200+ units/lots)	$ 140.71	$ 18.29	**$ 159.00**
	Per net hectare *(Note 1)*			
	≤ 2 ha	$ 6,412.39	$ 833.61	**$ 7,246.00**
	> 2 ha but ≤ 5 ha	$ 4,991.15	$ 648.85	**$ 5,640.00**
	> 5 ha but ≤ 10 ha	$ 3,995.58	$ 519.42	**$ 4,515.00**
	> 10 ha	$ 3,185.84	$ 414.16	**$ 3,600.00**
	Clearances per phase (tech review required) *(Note 2)*	$ 3,382.30	$ 439.70	**$ 3,822.00**
	Clearances per phase (no tech review required)	$ 1,153.10	$ 149.90	**$ 1,303.00**
Subdivisions - Industrial/Commercial	Base fee	$ 6,148.67	$ 799.33	**$ 6,948.00**
	Per net hectare	$ 5,998.23	$ 779.77	**$ 6,778.00**
	Clearances per phase (tech review required) *(Note 2)*	$ 3,382.30	$ 439.70	**$ 3,822.00**
	Clearances per phase (no tech review required)	$ 1,153.10	$ 149.90	**$ 1,303.00**
Subdivisions - Revisions/Redlines	Major/Intermediate *(Note 3)*	$ 3,546.02	$ 460.98	**$ 4,007.00**
	Minor *(Note 3)*	$ 769.91	$ 100.09	**$ 870.00**
Official Plan Amendments	Large (> 2ha)	$ 16,479.65	$ 2,142.35	**$ 18,622.00**
	Major	$ 5,924.78	$ 770.22	**$ 6,695.00**
	Intermediate	$ 3,918.58	$ 509.42	**$ 4,428.00**
	Minor	$ 1,138.94	$ 148.06	**$ 1,287.00**
Zoning By-Law Amendments	Large (> 2ha)	$ 16,479.65	$ 2,142.35	**$ 18,622.00**
	Major	$ 5,924.78	$ 770.22	**$ 6,695.00**
	Intermediate	$ 3,918.58	$ 509.42	**$ 4,428.00**
	Minor	$ 1,138.94	$ 143.80	**$ 1,250.00**
Consents	Major	$ 3,605.31	$ 468.69	**$ 4,074.00**
	Intermediate (staking or one technical review)	$ 2,600.00	$ 338.00	**$ 2,938.00**
	Minor	$ 1,905.31	$ 247.69	**$ 2,153.00**
Minor Variances	Major	$ 1,650.44	$ 214.56	**$ 1,865.00**
	Intermediate (staking,visual assessment or one technical review)	$ 567.26	$ 73.74	**$ 641.00**
	Minor (visual inspection)	$ 230.09	$ 29.91	**$ 260.00**
	Minor (no site visit or technical review)	$ 130.09	$ 16.91	**$ 147.00**
Site Plans - Single Residential	Major	$ 1,650.44	$ 214.56	**$ 1,865.00**
	Intermediate (staking, visual assessment, or one technical review)	$ 567.26	$ 73.74	**$ 641.00**
	Minor (visual inspection)	$ 230.09	$ 29.91	**$ 260.00**
	Minor (no site visit or technical review)	$ 130.09	$ 16.91	**$ 147.00**
Site Plans - Commercial/Industrial/ Institutional/Multi-Residential > 2ha	Major (per gross ha)	$ 5,664.60	$ 736.40	**$ 6,401.00**
	Intermediate	$ 9,890.27	$ 1,285.73	**$ 11,176.00**
	Minor	$ 2,060.18	$ 267.82	**$ 2,328.00**
	Clearance (technical review required) (note 3)	$ 3,823.89	$ 497.11	**$ 4,321.00**
	Clearance (no technical review required)	$ 1,300.00	$ 169.00	**$ 1,469.00**
Site Plans - Commercial/Industrial/ Institutional/Multi-Residential < 2ha	Major	$ 9,825.66	$ 1,277.34	**$ 11,103.00**
	Intermediate	$ 6,384.96	$ 830.04	**$ 7,215.00**
	Minor	$ 1,376.11	$ 178.89	**$ 1,555.00**
	Clearance (technical review required) (Note 3)	$ 1,736.28	$ 225.72	**$ 1,962.00**
	Clearance (no technical review required)	$ 739.97	$ 92.03	**$ 832.00**
Municipal Site Alteration Applications	Major/Intermediate	$ 3,582.30	$ 465.70	**$ 4,048.00**
	Minor	$ 875.22	$ 113.78	**$ 989.00**
	Prior to draft plan approval	$ 8,961.06	$ 1,164.94	**$ 10,126.00**
Applicant-Driven Revisions (requiring re-circulation)	Major changes (% of current fee)			**75%**
	Minor changes (% of current fee)			**25%**
Resubmission Due to incomplete application	% of current applicable application fee	$ 9,857.52	$ 1,281.48	**25% up to $ 11,139.00**
Technical Study/Design Resubmission	Third Submission (Note 4)			**25% up to 12,500.00**
	Subsequest Submissions (per submission) (Note 4)			**50% up to 26,000.00**
Additional Site Visit	Single residential/Single farm (private landowner)	$ 230.09	$ 29.91	**$ 260.00**
	Commercial/Industrial/Institutional/Residential	$ 1,876.11	$ 243.89	**$ 2,120.00**
File reactivation (inactive for 2 or more years)	Minor (Note 5)	$ 520.35	$ 67.65	**$ 588.00**
	Intermediate/Major (Note 5)	$ 1,050.44	$ 136.56	**$ 1,187.00**
Aggregate Extraction Technical Review Associated with a Planning Application		$ 80,000.00	$ 10,400.00	**$ 90,400.00**

HST # 10746 2483 RT001

CONSERVATION HALTON PLAN REVIEW FEE NOTES 2020

EFFECTIVE January 1, 2020

DEFINITIONS

Minor: The application is within or adjacent to the area of interest to Conservation Halton (e.g., natural heritage, natural hazard areas), but no technical studies are required by Conservation Halton

Intermediate: One technical study is required for review by Conservation Halton

Major: More than one technical study is required for review by Conservation Halton

Incomplete Submission: The application has not met all Conservation Halton's requirements as indicated in the checklist generated through the municipal pre-consultation process, including fees

Applicant-Driven Revision: An amendment or revision to an application initiated by the applicant after municipal approval has been granted

Gross Hectare: The entire area subject to a planning application or technical study

Net Hectare: The total developable area of the property including development blocks, roads, parks, schools, and stormwater management facilities, but excluding areas regulated by Conservation Halton (CH) or other natural heritage system (NHS) areas.

GENERAL

- **Plan Review Fees** – Conservation Halton's plan review fee will be paid to the municipality when the application is filed. Other review fees will be paid directly to Conservation Halton.
- **Pre-application Technical Review** – A fee will apply for the review of a technical study/analysis where a planning submission has not yet been submitted as outlined on **Schedule B – Fees for Other Services**. This fee will be paid directly to Conservation Halton and must be paid prior to review. The review of one technical submission prior to a formal application will be deducted from the cost of the planning application at the time it is submitted. Any additional technical submissions received for review prior to a formal application will be charged separately and no additional deduction will be made.
- **Pre-consultation** – Applicants are encouraged to consult with CH staff prior to the submission of a planning application to confirm the nature and extent of the information required and the appropriate fee. CH reserves the right to request a pre-consultation fee. This fee will be deducted from the application fee if a formal application is submitted within **12 months (one year)** of the pre-consultation.
- **Concurrent Applications** – Planning applications submitted concurrently for the same property will be charged at 100% of the highest fee rate and 75% the fee for each additional planning application. Fees for the technical review of EIR/FSS/SIS's or equivalent studies will be charged separately.
- **Peer Review Fees** – The cost for peer review of technical submissions will be borne by the applicant.
- **Additional Fees** – CH reserves the right to request additional fees, at a rate of $160/hour (inclusive of HST). Additional fees are required for all applicant-initiated revisions.
- **Fee Appeal Process:** - Any dispute of fee calculations that cannot be resolved through consultation with Conservation Halton's Senior Manager, Planning and Regulations, Director of Planning and Watershed Management, and/or CAO's office, can be appealed to the Board of Directors:

NOTES

1. **Subdivision Fees** - A per unit graduated fee applies to residential singles, duplexes, standard townhouses, and lane-based townhouses. The net hectare fee applies to multi-unit/mixed use residential (including, but not limited to, stacked townhouses, back-to-back townhouses, live-work units, and medium and high-rise units), industrial/commercial/institutional uses, and all other blocks as identified in the Net Hectare definition above.

   Subdivision fees include: 1) review of first and second submissions of all studies and technical analysis required to support draft plan approval; subsequent submissions will be charged as per the current CH Planning Fee Schedule, 2) one site visit prior to draft plan approval, 3) three (3) consultation meetings, 4) preparation of draft plan conditions, 5) review of the first and second submissions of all detailed design drawings and other submissions required to clear draft plan conditions; subsequent submissions will be charged as per the current CH Planning Fee Schedule, and 6) up to 2 site visits during the detailed design process (if required). The subdivision fee assumes a single phase of detailed design and registration. If the subdivision is phased after draft plan approval, additional fees for the review of detailed design at a rate of 15% of the current total subdivision fee will apply. All works associated with municipal site alteration applications and CH permit applications are separate from the subdivision review process and associated fees.

2. **Revision and Clearance Fees** – Fees will be paid directly to CH and must be paid prior to issuance of revised draft conditions, removal of a holding provision under an attendant zoning by-law, or the final clearance letter (registration, pre-servicing and assumption). A draft plan modification fee will be applicable to applicant-driven revisions to a subdivision or condominium application. The prescribed fee assumes a standard approach to the issuance of the CH clearance. Should the applicant want to consider a different approach, CH will charge additional fees to cover administrative and any legal costs. The payment of additional fees does not guarantee that the alternative approach will be accepted.

3. **Additional Subdivision Fees** – Where a subdivision has received draft plan approval, but conditions have not been cleared for a period of one (1) year after draft plan approval, CH reserves the right to request an additional plan review fee which represents the difference between the subdivision fee paid at the time of the initial review and the current subdivision fee. Similarly, where a subdivision has been draft plan approved and applicant-driven revisions are submitted subsequent to the approval, an additional plan review fee will be required.

4. **Technical Study/Design Resubmission** – A fee will be charged directly to the applicant when technical reviews of required studies, plans, drawings and models go beyond two submissions. A graduated fee of 25% of the current fee for the third submission and 50% of the current fee for subsequent submissions will be charged.

5. **File Reactivation** – A file reactivation fee will be charged for applications that have been inactive for two or more years. This fee will be charged in addition to the difference in the application fee paid with the original submission and the current approved fee. After five (5) years of inactivity, any technical or planning review will be charged the full current application submission fee.

CONSERVATION HALTON OTHER SERVICES FEES 2020

EFFECTIVE January 1, 2020

CATEGORY	TOTAL FEE
Fees Not Requiring HST	
Solicitor, Real Estate, Appraiser Inquiries *(Note 1)*	**$ 340.00**
Clearance/No Objection Letters *(Private Landowner Single Residential, Single Farm)*	
No Site Visit	**$ 130.00**
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Base Fee *(> 50ha)*	$ 31,555.75	$ 4,102.25	**$ 35,658.00**
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Individual EA	$ 12,360.18	$ 1,606.82	**$ 13,967.00**
Schedule A or A+	-		-
Schedule B *(or equivalent)*	$ 5,150.44	$ 669.56	**$ 5,820.00**
Schedule C *(or equivalent)*	$ 8,239.82	$ 1,071.18	**$ 9,311.00**
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Niagara Escarpment Plan Amendments (Applicant Driven)	$ 16,482.30	$ 2,142.70	**$ 18,625.00**
Parkway Belt Applications	$ 3,090.27	$ 401.73	**$ 3,492.00**

HST # 10746 2483 RT001

Other Services Fee Notes

1. Solicitor, real estate, or appraiser inquiries for information specific to a PIN (Property Identification Number) will be charged the inquiry fee for each PIN.
2. The pre-application fee will be deducted from the cost of an application, **if** it is received within **one (1) year** of completing the site visit or technical review. Additional technical submissions received for review prior to a formal application will be charged separately and no additional deduction will be made.
3. A gross hectare is calculated based on the geographic extent of the study area.
4. When technical reviews of studies associated with an EA go beyond two submissions, a graduated fee of 25% of the current fee for the third submission and 50% of the current fee for subsequent submissions will be charged.
5. Review fees do not apply for Region of Halton infrastructure projects as the Region funds a CH Regional Infrastructure Team.

Ministry of Finance
Office of the Minister

Ministère des Finances
Bureau du ministre

Ontario

7th Floor, Frost Building South
7 Queen's Park Crescent
Toronto ON M7A 1Y7
Telephone: 416-325-0400

7e étage, Édifice Frost Sud
7 Queen's Park Crescent
Toronto ON M7A 1Y7
Téléphone: 416-325-0400

October 24, 2019

Dear Head of Council:

We are writing to announce the release of the 2020 Ontario Municipal Partnership Fund (OMPF) allocations.

As communicated by the Premier at the Association of Municipalities of Ontario (AMO) conference, the government is maintaining the current structure of the OMPF for 2020. This means the program is the same as it was in 2019, while allowing for annual data updates and related adjustments.

We have been listening to municipalities and have heard that you need information early to allow time to plan for your budgets. That is why we are announcing allocations now – the earliest that OMPF allocations have ever been announced.

Consistent with prior years, Transitional Assistance will ensure that the 2020 funding guarantee for municipalities in northern Ontario will be at least 90 per cent of their 2019 OMPF allocation and for municipalities in southern Ontario will be at least 85 per cent of their 2019 OMPF allocation.

Northern and rural municipalities with the most challenging fiscal circumstances will continue to have their guarantee enhanced up to 100 per cent of the prior year's allocation.

As in prior years, Transitional Assistance continues to adjust in 2020 as fewer municipalities require this funding. Consequently, the 2020 OMPF will provide a total of $500 million to 389 municipalities across the province.

The Ministry of Finance's Provincial-Local Finance Division will be providing your municipal Treasurers and Clerk-Treasurers with further details on the 2020 OMPF. This information and other supporting materials will be posted online at http://www.fin.gov.on.ca/en/budget/ompf/2020.

.../cont'd

Our government respects our municipal partners and we are committed to working together to serve the people of Ontario.

Sincerely,

Original signed by

Rod Phillips
Minister of Finance

c: The Honourable Steve Clark, Minister of Municipal Affairs and Housing

The Corporation of The
Town of Amherstburg

November 25, 2019 **VIA EMAIL**

Honourable Jeff Yurek
Minister of the Environment, Conservation and Parks
College Park 5th Floor
777 Bay St.
Toronto, ON
M7A 2J3

Re: Declaration of Climate Emergency in the Town of Amherstburg

Dear Hon. Yurek,

At its meeting of November 12th, 2019, Amherstburg Town Council passed the following resolution as recommended by the Windsor-Essex County Environment Committee:

> *"**WHEREAS** the Windsor-Essex County Environment Committee is sounding the alarm and urging the City of Windsor and the County of Essex to declare Climate Emergencies and work together to reduce emissions; and,*
>
> ***WHEREAS** more than 444 Canadian municipalities (including Chatham-Kent, London, Sarnia, Hamilton, St. Catharines, Guelph, Kingston, Kitchener and the Waterloo Region) have declared Climate Emergencies, some of which are also implementing strategic plans in order to help reduce global carbon emissions and mitigate the impacts of climate change; and,*
>
> ***WHEREAS** Amherstburg distributed sandbags to residents this summer in the face of historic water levels and has 43.7 km of shoreline along the Detroit River and Lake Erie, along with 12.4 km of shoreline on inland waterways, and is thus greatly affected by water levels in the Great Lakes basin; and,*

WHEREAS *the most recent report by the UN Intergovernmental Panel on Climate Change (IPCC) has indicated that within 12 years, in order to keep the global average temperature increase to 1.5 degree C and maintain a climate compatible with human civilization, there must be a reduction in carbon emissions of about 45% from 2010 levels, reaching net zero carbon emissions by 2050; and,*

WHEREAS *based on current projections of the future impacts of human-caused climate change, climate change will adversely the local economy, local infrastructure and property, put a strain on municipal budgets and result in significant economic and health burdens for local residents, particularly our vulnerable populations; and,*

WHEREAS *climate change will jeopardize the health and survival of many local plant and animal species as well as their natural environments and ecosystems; and,*

WHEREAS *Amherstburg and the surrounding region is already experiencing climate change impacts including, but not limited to, overland flooding, heavy rain event flooding, emergence of invasive species, an increased number of high heat days, the rise of vector borne diseases, the re-emergence of blue-green algae and harmful algal blooms in our lakes and rivers; and,*

WHEREAS *municipalities are understood to produce and/or have regulatory jurisdiction over approximately 50% of carbon emissions in Canada; and,*

WHEREAS *Amherstburg is embarking on a review of the Town's Official Plan; and,*

WHEREAS *implementing climate action and making a transition to a low-carbon economy also represents a significant opportunity to stimulate economic growth, increase job opportunities and develop new technologies;*

THEREFORE BE IT RESOLVED *that Amherstburg declare a Climate Emergency and direct administration to prepare a report containing recommendations for priority actions items, implementation measures and cost requirements to accelerate and urgently work towards the reduction of emissions and preparing for our climate future."*

cc:
Doug Ford, Premier of Ontario
Association of Ontario Municipalities AMO)
Essex Region Conservation Authority (ERCA)
Ontario Municipalities
Taras Natyshak, MPP, Essex
Chris Lewis, MP, Essex
Windsor-Essex County Environment Committee

Regards,

Tammy Fowkes
Deputy Clerk
tfowkes@amherstburg.ca

The Corporation of The
Town of Amherstburg

November 25, 2019 **VIA EMAIL**

Ministry of the Attorney General
McMurtry-Scott Building
720 Bay St., 11th Floor
Toronto, ON
M7A 2S9

Re: Joint and Several Liability Consultation – Town of Amherstburg Support

At its meeting of October 15th, 2019, Amherstburg Town Council supported the Township of Springwater's Resolution regarding Joint and Several Liability Consultation ***with the exception of Section 2e – Law Society of Ontario Charges***; the Town of Amherstburg does not support this section.

cc:
Doug Ford, Premier of Ontario
Association of Ontario Municipalities AMO)
Ontario Municipalities
Taras Natyshak, MPP, Essex
Chris Lewis, MP, Essex

Encl: Correspondence – Joint and Several Liability Consultation – Township of Springwater

Regards,

Tammy Fowkes
Deputy Clerk
tfowkes@amherstburg.ca

Township of Springwater

www.springwater.ca
2231 Nursery Road
Minesing, Ontario
L9X 1A8 Canada

September 26, 2019

Ministry of the Attorney General
McMurtry-Scott Building
720 Bay Street, 11th Floor
Toronto ON, M7A 2S9

Re: Joint and Several Liability Consultation

Please be advised that in response to your letter dated July 12, 2019, the Township of Springwater provides the following comments in regards to Joint and Several Liability.

1. Please describe the nature of the problem as you see it?

In response to the Province's request for consultation, the Township has a significant issue with Joint and Several Liability (JSL) and the impact it has on the municipality.

a. No Requirement of Proof

JSL is a tool that is used by the legal industry without any discretion to the point that this municipality feels that its use is negligent and in fact unethical. Most law suits that municipalities see are frivolous and vexations as lawyers cast their nets wide and attempt to use shotgun justice for their clients that are more than often the sole cause of a claim. A statement of claim does not require any proof that there is fault. A plaintiff only has to state who they think is involved and a significant amount of court time is spent determining who should be a party to the legal claim.

b. No Consequence for Being Wrongly Identified in a Statement of Claim

To add to this, there is no consequence that lawyers and their clients face for submitting a claim against a municipality when it is clear that a municipality is not involved. Municipalities incur significant administrative costs in managing these claims and the municipalities and their insurers pay significant costs to go through a lengthy process to prove that a claim was made in error (intentionally) only to find that a judge sees no reason to compensate a municipality for cost for incorrectly being named in a lawsuit by a plaintiff. Municipalities are seen as having deep pockets by the legal industry as well as the judicial system that makes decisions on these claims. Proof of innocence is often furnished to the plaintiff and lawyer by a municipality immediately upon notification of a pending legal action of statement of claim. This information is ignored by the plaintiff's lawyer. A plaintiff and their lawyer should have to reimburse a municipality for

all administrative and legal costs when the municipality is cleared of liability. Judges rarely compensate municipalities for being wrongly named in a legal action.

A recent example from 2019 occurred when a statement of claim was made against the Township of Springwater for an accident on a County Road (not the jurisdiction of Springwater). After legal and administrative costs totaling more than $5,000, Springwater was dismissed from the claim. Unfortunately no costs were assigned to the plaintiff for wrongly naming Springwater in the statement of claim. The current system is broken and Springwater tax payers are left paying the bill.

2. *What are the problems that you need addressed to benefit your community?*

a. *Ethical Standard of Due Diligence Required Before Submitting a Legal Action*

Lawyer's representing plaintiff's should be required to submit documentation that provides significant research into why a claim is being made and a municipality is being named in a law suit. The claim should clearly prove authority and responsibility. The current practice of naming every party under the sun in a legal claim is negligent and unethical.

b. *Frivolous and Vexatious Suits are Costing Taxpayers*

The Township of Springwater is seeing a significant waste of administrative time and cost in managing legal claims against the municipality that are predominantly frivolous and vexatious due to JSL. Over the last seven years, the municipality has had 55 claims made against the municipality. These claims range from trips/falls resulting in broken eyeglasses to cases that unfortunately involve loss of life. The Township has no problem dealing with claims that the municipality is responsible for; however the Township does have a problem dealing with claims it does not have any responsibility for. Of the 55 claims against the municipality, 42 of these claims are frivolous and vexatious. Claims that the municipality has no responsibility for. Over the past 7 years, Springwater has paid more than $100,000 on these frivolous and vexatious claims as they work themselves through the legal process. Many of these files are still open. This does not include additional costs paid by Springwater's insurance company that are beyond the municipality's deductible.

c. *Negligent Legal Actions (Beyond Frivolous and Vexatious)*

The Township of Springwater is currently named in 4 legal actions and an additional legal action (recently abandoned) for claims that occurred in another municipality (no where near Springwater). The Township is currently named in 3 claims that occurred in the Township of Clearview west of Stayner and one claim in the Township of Brock that have nothing to do with the Township. Springwater was named in a claim that occurred

in Wasaga Beach that was abandoned recently. All of these claims cost the Springwater taxpayer in administrative and legal costs as they work their way through the process.

d. Triage System for Claims

Before a claim makes it to a court date, the file should be triaged. It is at this stage that negligent of frivolous and vexatious claims will be filtered or thrown out. This process will trigger the reimbursement of costs to municipalities by unethical law firms.

e. Law Society of Ontario Charges

Lawyers that use JSL in an unethical way should be charged by the Law Society of Ontario. If a lawyer names a municipality in a legal action that should not be named, these lawyers should be suspended and potentially lose their license to practice law. There is a significant commonality when comparing frivolous and vexatious claims and the law firms/lawyers that submit them. The current code of ethics of the Law Society of Ontario should be updated by the Province to reprimand lawyers and law firms that negligently use JSL. The Province of Ontario should be involved in creating a new Code of Ethics for Ontario's legal industry.

3. Is it increased premiums? Rising deductibles?

A recent survey by CAO's in Simcoe County shows that insurance premiums are going up between 10% at the lowest to 59% being the highest in 2019. The Township of Springwater experienced a 10.8% increase in its 2019 insurance renewal. The area that typically sees an annual increase is related to the Municipal General Liability and Excess Liability lines of the business. The municipality was advised by its insurance broker that "over the past several years, insurance companies' appetite for Municipal Insurance has remained fairly stable. Insurance rates across all lines have seen only modest increases intended to simply keep pace with inflation and the rising cost of claims. Larger rate increases have been reserved for those accounts experiencing adverse claims development; either in frequency or severity (or both). However, starting in June 2018, the insurance market as a whole has shown clear signs of "hardening". Insurance companies for all sectors are putting stricter rules in place regarding the amount and breadth of coverage they will provide, and to which clients. Since the overall insurance supply is being reduced, the demand for insurer capacity is increasing, and as such, prices are elevating."

The table below provides at a high level (includes all lines of coverage) the Township's annual insurance premiums over the past five years.

2015	2016	2017	2018	2019
$234,942	$247,262	$254,388	$274,936	$304,688

The Township continues to consult with its insurance broker in an effort to ensure that Springwater's constituents are receiving the best value for their tax dollar; however, the rising costs of insurance are not sustainable over the long run. Staff and its insurance broker have looked at increasing our deductibles in an effort to reduce the overall premium; however this has led to minimal reductions in the overall annual premium to the Township.

4. Being unfairly named in lawsuits?

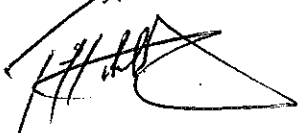
As detailed above, Springwater continues to be unfairly named in legal actions. Issues here range from a complete absence of research by legal firms on causality to the municipality being named in legal action in completely separate jurisdictions (other municipalities).

5. Feeling you cannot offer certain services because of liability risks?

More recently, with the advice of the Township's insurance broker, the Township has changed the way in which it delivers some of its recreational programs/services, especially as it relates to children's programs/activities. For example, the Township in partnership with its Community Recreation Associations will host a number of community based events throughout the year, which includes children's activities. In order to allow inflatable Bouncy castles at community events, the Township now requires the service provider to indemnify the Township and to also provide staff to monitor the safety of participants while in the inflatable Bouncy castle. Some vendors are reluctant to take on this risk.

Thank you for allowing the Township to participate in this consultation. We are open to further dialogue should you feel it necessary.

Yours truly,



Jeff Schmidt, CPA, CGA, B.A.S.
Chief Administrative Officer

Cc: Ontario Municipalities

Courtenay Hoytfox

From: Admin
Sent: Thursday, November 14, 2019 9:21 AM
To: Courtenay Hoytfox
Subject: FW: New Municipal Advisor - Heather Gushulak, MSO-West

From: "Sumbal, Saifullah (MMAH)" <Saifullah.Sumbal@ontario.ca>
Date: November 13, 2019 at 5:28:47 PM EST
Subject: New Municipal Advisor - Heather Gushulak, MSO-West

Good evening, I am pleased to share a staffing update with you. Effective November 14th, Heather Gushulak will be the new Municipal Advisor for all the municipalities in the counties of Dufferin, Wellington, Haldimand, Norfolk and Brant and for the cities of Guelph and Brantford.

Heather has recently joined us in Municipal Services Office-Western Ontario from the Ministry of Heritage, Sport, Tourism and Culture Industries where she was working as Regional Advisor in Kenora. In that role, Heather provided economic development, community development and capacity building advisory and program/project support services to 11 municipalities, 17 Indigenous communities and 4 Local Services Boards in northwestern Ontario. Previously, she worked with the former Ministry of Training, Colleges and Universities in various capacities, including as Employment and Training Consultant. Heather has also worked with the Aviation and Forest Fire Management Program of the Ministry of Natural Resources and Forestry.

Heather is very excited about this new opportunity and will be reaching out to you in the days and weeks ahead to provide advisory services and learn from your rich experience and knowledge. I hope you will join me in extending a warm welcome to her.

Heather could be reached at: Heather.Gushulak@ontario.ca or (519) 873-4037.

Sincerely,
Saif

Saif Sumbal
Manager, Local Government and Housing
Municipal Services Office-Western Ontario
Ministry of Municipal Affairs and Housing
2nd Floor, 659 Exeter Road
London, ON, N6E 1L3
Phone: (519) 873-4028
Toll Free: 1-800-265-4736

THE CORPORATION OF THE TOWNSHIP OF LARDER LAKE
69 FOURTH AVENUE, P. O. BOX 40, LARDER LAKE, ON P0K 1L0
PH: 705-643-2158 FAX: 705-643-2311
LARDERLAKE.CA

November 12, 2019

Ministry of Agriculture, Food and Rural Affairs
1 Stone Road West, Guelph, ON N1G 4Y2
minister.omafra@ontario.ca

Dear Mr. Ernie Hardeman:

Re: Main Street Revitalization Grant – Extension request

In the summer of 2018, we were advised that we were allocated main street revitalization funding. On September 4th, 2019 Municipal senior staff reached out to the representative of the distributing agency of these funds (AMO) to request an extension on the spending of the funds. Staff were told that we are not the only Municipality that has enquired about an extension but that no formal response has been received from OMAFRA to AMO about allowing an extension.

An email follow-up was sent to AMO on October 7th to see if any progress had been made on granting extensions. The email also included the following list of reasons why an extension is REQUIRED:

- We were advised of the funding in summer of a Municipal election year
- Council not knowing if they were going to be re-elected did not want to choose a project for the funds
- An entirely new Council was elected in October and sworn in in early December.
- Council orientation and 2019 budget took precedence on choosing a project
- Council has recently (end of August 2019) chosen a project.
- The project requires work outside in reasonable temperatures.
- The temperatures in Northern Ontario are not stable enough till may to perform the project.

The response from AMO, which was received on the same day, was the following:
"Thanks for this, Julie. We've outlined several these reasons in our letter to OMAFRA. I'm hopeful that I'll have some more information soon."

We have been also been told to select an alternative project that would be eligible. In small towns there are certain items that are more critical than others. In our case having our landmark refurbished is the main project we would like to get done with this funding. An alternative project will not have the same visual impact. We are pleading that you provide an extension to this funding soon as possible. The request is that the project funding be extended till end of July 2020.

If you require more information please do not hesitate to contact our office at 705-643-2158.
Yours truly,
Julie Bouthillette
Julie Bouthillette, CAO /Clerk-Treasurer

Cc: Adam Garcia AGarcia@amo.on.ca
Lorna Ruder lruder@amo.on.ca (Please share with AMO board)

THE CORPORATION OF THE TOWNSHIP OF LARDER LAKE
69 Fourth Avenue, Larder Lake, ON
Phone: 705-643-2158 Fax: 705-643-2311

MOVED BY:	SECONDED BY:	
___ ☐ Thomas Armstrong	___ ☐ Thomas Armstrong	Motion #: 24
___ ☐ Patricia Hull	___ ☐ Patricia Hull	Resolution #: 24
P.H ☐ Paul Kelly	___ ☐ Paul Kelly	Date: November 12, 2019
___ ☐ Lynne Paquette	P.H ☐ Lynne Paquette	

WHEREAS Council has discussed and edited the letter to the Ministry of Agriculture, Food and Rural Affairs; And

THEREFORE, Council directs staff to send the letter with this attached resolution as endorsement to the letter; And

FURTHER that the letter also be sent to Premier Doug Ford, Our local MPP and all other Municipalities in Ontario.

Recorded vote requested: ☐

	For	Against
Tom Armstrong		
Patricia Hull		
Paul Kelly		
Lynne Paquette		
Patty Quinn		

I declare this motion

☑ Carried
☐ Lost / Defeated
☐ Deferred to: _____ (enter date) Because:
☐ Referred to: _____ (enter body) Expected response: (enter date)

Disclosure of Pecuniary Interest*

Chair: Patricia Hull

***Disclosed his/her (their) interest(s), abstained from discussion and did not vote on this question.**

CORPORATION OF THE MUNICIPALITY OF SOUTH HURON
322 Main Street South P.O. Box 759
Exeter Ontario
N0M 1S6
Phone: 519-235-0310 Fax: 519-235-3304
Toll Free: 1-877-204-0747

November 18, 2019

Honourable Doug Ford, Premier
Legislative Building Rm. 281, Queen's Park
Toronto, ON, M7A 1A1

Attention: Honourable Premier Ford

Re: Support for Town of Prescott Resolution on the Transformation of Building Services and creation of a new Delegated Administrative Authority with regard to building service delivery

The following resolution was passed by the Council of the Corporation of the Municipality of South Huron at the Regular Council meeting on November 4, 2019;

554-2019
Moved by: T. Oke
Seconded by: B. Willard

"That South Huron Council support the Town of Prescott Resolution on the Transformation of Building Services and creation of a new Delegated Administrative Authority with regard to building service delivery; and

That this motion is sent to the Honourable Doug Ford, Premier of Ontario, The Honourable Steve Clark, Minister of Municipal Affairs and Housing, The Honourable Jim McDonnell, Parliamentary Assistant for Municipal Affairs and Housing and the Association of Municipalities of Ontario."

Sincerely,

Rebekah Msuya-Collison, Clerk
Municipality of South Huron
519-235-0310 x227
clerk@southhuron.ca

cc: The Honourable Steve Clark, Minister of Municipal Affairs and Housing,
The Honourable Jim McDonnell, Parliamentary Assistant for Municipal Affairs and Housing,
The Association of Municipalities of Ontario

TOWN OF
WHITCHURCH–STOUFFVILLE
111 Sandiford Drive, Stouffville, ON L4A 0Z8

Customer Service Centre: 905-640-1900
Toll Free: 1-855-642-TOWN (8696)
Automated: 905-640-1910
Toll Free: 1-855-642-TOWS (8697)
Fax: 905-640-7957
www.townofws.ca

VIA Email <justin.trudeau@parl.gc.ca>

November 19, 2019

Justin Trudeau
House of Commons
Ottawa, ON
K1A 0A6

RE: Ban of Single-Use Disposable Wipes

Please be advised that the above-noted matter was placed before Council at its meeting held on November 5, 2019, and the following resolution was passed:

> WHEREAS Single-use wipes are a $6 billion industry and growing, and are now being advertised as a clean alternative to toilet paper that is safe to flush; and
>
> WHEREAS Single-use wipes accumulate in the sewer system and eventually clog the sanitary sewer system, requiring significant additional repair and maintenance; and
>
> WHEREAS the Municipal Enforcement Sewer Use Group estimates non-flushable materials cause $259 million in annual repairs across Canada; and
>
> WHEREAS a 2019 study released by Ryerson University tested 101 types of single-use disposable wipes and found that all of the wipes failed basic requirements of flushable products; and
>
> WHEREAS there is no one standard for what the word “flushable’ means; and
>
> WHEREAS there is a lack of public awareness of the impact caused by non-flushable wipes being flushed down toilets and consumer education and outreach could play a large part in reducing the impact; and
>
> WHEREAS Single-use wipes, even when properly disposed of as waste, are an inefficient and unsustainable use of resources that contribute significantly to environmental degradation.
>
> NOW THEREFORE BE IT RESOLVED THAT the Town of Whitchurch-Stouffville lobby the Provincial and Federal Governments to ban single-use disposable wipes; and

TOWN OF
WHITCHURCH–STOUFFVILLE
111 Sandiford Drive, Stouffville, ON L4A 0Z8

Customer Service Centre: 905-640-1900
Toll Free: 1-855-642-TOWN (8696)
Automated: 905-640-1910
Toll Free: 1-855-642-TOWS (8697)
Fax: 905-640-7957
www.townofws.ca

THAT this resolution be forwarded to the Right Honourable Prime Minister of Canada, the Honourable Premier of Ontario, the Minister of the Environment, Conservation and Parks, the Minister of Municipal Affairs and Housing, the Association of Municipalities of Ontario, the Local Members of Provincial Parliament, York Region and all Municipalities within the Province of Ontario.

Yours truly,

Kristina Soolepp, Council Coordinator
(905) 640-1910 x 2463

cc. Honourable Premier of Ontario,
Minister of the Environment, Conservation and Parks,
Minister of Municipal Affairs and Housing,
Association of Municipalities of Ontario,
Local Members of Provincial Parliament,
York Region
All Municipalities within the Province of Ontario

Courtenay Hoytfox

From: AMO Communications <Communicate@amo.on.ca>
Sent: Thursday, November 14, 2019 10:01 AM
To: Courtenay Hoytfox
Subject: AMO WatchFile - November 14, 2019

November 14, 2019

In This Issue

AMO Matters

AMO and the Province of Ontario released the 2018/19 Joint Annual Memorandum of Understanding Statement [FR]. The Joint Statement provides an update of some of the activities and accomplishments under the MOU during 2018 and 2019.

Call for candidates for the MPAC Board. AMO is undertaking an open solicitation for expressions of interest from eligible persons to be nominated to serve on the MPAC Board. Interested candidates have until November 15, 2019 to apply. For more information, click here.

Municipal governments are expected to provide public-facing services and respond to requests from residents. Citizen relationship management (CRM) technology can help you manage these interactions with residents online. Join us on Thursday, November 28 at 12 pm for a free webinar where we will be announcing our new partnership with Frequency Foundry, AMO's preferred provider of digital CRM solutions.

Provincial Matters

The Honourable Rod Phillips, Minister of Finance introduced Bill 138 in the Legislature November 6 to implement the government's Fall Economic Statement. Bill 138 is Omnibus legislation with multiple schedules amending other Acts. It has received 1st reading. Here is a quick review of those schedules of municipal interest. Please note that Schedule 37 on supply chain management does not apply to municipal governments.

The Ontario government has launched the Job Site Challenge - a new program open to property owners and land developers across the province. They are searching for sites ranging from 500 to

1,500 acres in size capable of supporting large-scale manufacturing operations.

LAS
Join LAS on December 3 @ 2pm to learn about the Fleet Offering through our Municipal Group Buying Program. Enterprise Fleet Management will discuss the management tools and vehicle procurement options available to keep your fleet of 15+ vehicles on track. Register here.

Converting your lights to LED is a no-brainer! Take advantage of the turn-key LAS Facility Lighting Service to help with asset renewal of your municipal buildings. Read about one municipality that has already participated. Make it easy on yourself and contact Christian Tham!

LAS Blog: 2020 Pricing details have been announced for the LAS Electricity Program. Check out the LAS Blog for more information.

Municipal Wire*
4S offers training, support, and a digital management platform to ensure municipal governments comply with occupational health and safety requirements. Reach out to 4S, AMO's partner for health and safety management, for more information on how they can support your health and safety program for 2020 and beyond.

Enter promotion code 63647 when ordering and save 15% on Deluxe Canada products including customizable forms, cheques, print marketing, promo & apparel, and more. This continues AMO's member discount with the company formerly known as NEBS.

Careers
Policy Intern - AMO. Assisting senior advisors and the Director of Policy, the successful candidate will support AMO's policy development process. The Internship is a temporary position of up to 17 weeks. Please apply in confidence to: careers@amo.on.ca by Friday, January 3rd, 2020 at 12 noon.

Executive Director, Strategy Risk & Accountability - City of Burlington. Location: City Manager's Office. Job Number: CM-242-19. Closing date: November 22, 2019. To apply, please visit City of Burlington Careers and click on "View Jobs". Please note that applications are only accepted online. For assistance please contact Human Resources at 905.335.7602.

Manager, Stakeholder & Community Outreach - City of Toronto. Division: Solid Waste Management. For more information on this and other opportunities with the City of Toronto, visit Jobs at the City. To apply online, submit your resume, quoting Job ID 1408, by November 25, 2019. Information in preparing for City job competitions is available on the Job Opportunities website.

Senior Financial Analyst 2 (Job ID 10615) - Region of Durham. Reports to: Director of Financial Planning. To learn more about this opportunity, please visit Durham Region Job Postings and apply directly to Job ID# 10615 no later than December 6, 2019.

About AMO
AMO is a non-profit organization representing almost all of Ontario's 444 municipal governments. AMO supports strong and effective municipal government in Ontario and promotes the value of municipal government as a vital and essential component of Ontario's and Canada's political system. Follow @AMOPolicy on Twitter!

AMO Contacts
AMO Watch File Tel: 416.971.9856
Conferences/Events
Policy and Funding Programs
LAS Local Authority Services
MEPCO Municipal Employer Pension Centre of Ontario
ONE Investment
Media Inquiries Tel: 416.729.5425
Municipal Wire, Career/Employment and Council Resolution Distributions

Please consider the environment before printing this.

Association of Municipalities of Ontario
200 University Ave. Suite 801,Toronto ON Canada M5H 3C6

Courtenay Hoytfox

From: AMO Communications <Communicate@amo.on.ca>
Sent: Thursday, November 21, 2019 10:01 AM
To: Courtenay Hoytfox
Subject: AMO WatchFile - November 21, 2019

November 21, 2019

In This Issue

Guest Column*

Ontarians pay the highest policing costs in the country. On behalf of property taxpayers, AMO is advocating for policing regulations that can improve the effectiveness and efficiency of policing. In AMO's Watchfile Guest Column, Dr. Christian Leuprecht makes the case for civilianizing non-core policing to help manage pressure on the property tax dollar and improve effectiveness.

AMO Matters

Municipal governments are expected to provide public-facing services and respond to requests from residents. Citizen relationship management (CRM) technology can help you manage these interactions with residents online. Join us on Thursday, November 28 at 12 pm for a free webinar where we will be announcing our new partnership with Frequency Foundry, AMO's preferred provider of digital CRM solutions.

Provincial Matters

MMAH has written to municipalities about the Municipal Modernization Program first intake which is now open for expressions of interest until December 6. The province is providing up to $125 million through 2022-23 to help municipalities achieve efficiencies. In the first intake, municipalities can apply individually or collectively, to undertake independent third-party reviews. Future intakes will be aimed at implementation. Questions can be directed to Municipal.Programs@ontario.ca.

The Ministry of Environment, Conservation and Parks has launched consultations on the Blue Box. The first webinar takes place on November 27. To register, please contact Marc Peverini at Marc.Peverini@ontario.ca.

Eye on Events
2020 ROMA Conference - Don't miss the opportunity to connect with your rural municipal colleagues and provincial representatives at the only conference in Ontario designed for rural elected officials. See you January 19-21, 2020 in Toronto!

AMO's Social Media webinar series is back by popular demand! Elected officials live in the spotlight making effective communication essential. With the rise of social media and decline of local news, the communications landscape has changed. These 1/2 day workshops will help promote good news, manage issues professionally, and leverage traditional and social media. Register now for 1 or all 4 webinars, designed to help you navigate social media more effectively and safely.

LAS
Mark December 3 @ 2 pm on your calendars! LAS will be hosting a webinar about the Fleet Offering through our Group Buying Program. Enterprise Fleet Management will discuss procurement options and tools available to optimize your fleet of 15+ vehicles. Register here.

Office supplies are now available through the LAS Group Buying Program. Everything from pens to furniture, and coffee supplies to promotional materials. Join our webinar on December 11 at 10 am to learn how you can take advantage of preferential pricing through Staples Business Advantage! Register here.

Municipal Wire*
4S offers training, support, and a digital management platform to ensure municipal governments comply with occupational health and safety requirements. Reach out to 4S, AMO's partner for health and safety management, for more information on how they can support your health and safety program for 2020 and beyond.

Enter promotion code 63647 when ordering and save 15% on Deluxe Canada products including customizable forms, cheques, print marketing, promo & apparel, and more. This continues AMO's member discount with the company formerly known as NEBS.

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Policy Intern - AMO. Assisting senior advisors and the Director of Policy, the successful candidate will support AMO's policy development process. The Internship is a temporary position of up to 17 weeks. Please apply in confidence to: careers@amo.on.ca by Friday, January 3rd, 2020 at 12 noon.

Chief of Emergency Management - Ontario Public Service. Location: Ministry of the Solicitor General (SolGen), Downsview. Duration: Permanent. Additional information: Interviews to be held week of January 6. Please apply online, only, by Sunday, December 1, 2019, by visiting Ontario Public Service Careers, and following the instructions to apply online.

Recreation and Culture Manager - Town of Cobourg. Reports to: Director of Community Services. Position Status: Regular, Full Time. Applicants should forward their resume in confidence no later than 4:30 pm Thursday, December 5, 2019 to the attention of: Human Resources Department, Corporation of the Town of Cobourg, 55 King Street West, Cobourg, ON K9A 2M2. Fax: 905.372.8819; Email: careers@cobourg.ca.

City Manager - City of London. The ideal candidate is a seasoned executive in the public or private sectors with significant knowledge of municipal policies and operations. To explore this opportunity further, please contact Julia Robarts at Odgers Berndtson at 1.866.962.1990 or submit your resume and letter of interest online to Odgers Berndtson Opportunities by December 18, 2019.

About AMO
AMO is a non-profit organization representing almost all of Ontario's 444 municipal governments. AMO supports strong and effective municipal government in Ontario and promotes the value of municipal government as a vital and essential component of Ontario's and Canada's political system. Follow @AMOPolicy on Twitter!

AMO Contacts
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ONE Investment
Media Inquiries Tel: 416.729.5425
Municipal Wire, Career/Employment and Council Resolution Distributions

Association of Municipalities of Ontario
200 University Ave. Suite 801,Toronto ON Canada M5H 3C6

Courtenay Hoytfox

From: AMO Communications <Communicate@amo.on.ca>
Sent: Thursday, November 28, 2019 10:03 AM
To: Courtenay Hoytfox
Subject: AMO WatchFile - November 28, 2019

November 28, 2019

In This Issue
- Time to book your accommodations for AMO's 2020 AGM!
- ROMA Conference 2020 - Key deadlines.
- A barrier-free web solution for AMO members.
- The Journey Towards a Digital CRM Solution for AMO Members.
- Fleet Management webinar: Municipal Group Buying Program.
- Office Supplies webinar: Municipal Group Buying Program.
- Participate in energy training including a treasure hunt!
- ONE Investment - Holiday transaction schedule.
- Municipal health and safety compliance.
- Save 15% off Deluxe Canada products.
- Careers with AMO, Goderich, Durham Region and North Glengarry.

Eye on Events
The 2020 AMO Annual General Meeting and Conference will be held in Ottawa from August 16-19, 2020. AMO has arranged hotel accommodations for delegates at various hotels in downtown Ottawa. Guest rooms can only be booked as of Tuesday, **January 7, 2020 at 10:00 a.m**. Hotels have been instructed to decline reservations for AMO delegates until that time. Please click here to book your rooms and for all information on accommodations.

2020 ROMA Conference - please note key deadlines: Request for delegations with the government closes **December 2**; Hotel booking closes **December 6;** and pre-registration closes **January 16, 12:00 pm**.

A quality, accessible website is the face of your municipality and is important to engaging and serving residents effectively. As part of AMO's Digital Toolkit, we have partnered with eSolutions to offer members cost-effective website solutions that meet accessibility requirements. Join us on Thursday, December 12 from 3 pm to 4 pm EST for a free webinar where we will introduce our latest partner.

LAS
Learn how AMO came to partner with Frequency Foundry, our preferred partner for a digital citizen relationship management/online 3-1-1 solution.

Less than a week away! LAS is hosting a webinar on **December 3 @ 2pm** about the Fleet Offering under our Group Buying Program. Enterprise Fleet Management will discuss their procurement options and available tools to optimize your fleet of 15+ vehicles. Register here.

Did you know the LAS Group Buying program offers Office supplies. Everything from pens to furniture, and coffee supplies to promotional materials. Join our webinar on **December 11 at 10am** to learn how you can take advantage of preferential pricing through Staples Business Advantage! Register here.

Did you know that LAS and TdS Dixon's custom Energy Training Workshops include a treasure hunt? AND this training is eligible for up to 75% IESO incentives. Book your Spring 2020 Workshop now! Contact Christian Tham for more info.

ONE
Holiday Schedule Update: Please note, AMO Offices and Toronto Stock Exchange will have special hours during holidays. Click here to find detailed schedule for processing of ONE HISA Transactions and ONE (Portfolio) Transactions.

Municipal Wire*
4S offers training, support, and a digital management platform to ensure municipal governments comply with occupational health and safety requirements. Reach out to 4S, AMO's partner for health and safety management, for more information on how they can support your health and safety program for 2020 and beyond.

Enter promotion code 63647 when ordering and save 15% on Deluxe Canada products including customizable forms, cheques, print marketing, promo & apparel, and more. This continues AMO's member discount with the company formerly known as NEBS.

Careers
Policy Intern - AMO. Assisting senior advisors and the Director of Policy, the successful candidate will support AMO's policy development process. The Internship is a temporary position of up to 17 weeks. Please apply in confidence to: careers@amo.on.ca by Friday, January 3rd, 2020 at 12 noon.

Director of Operations - Town of Goderich. To learn more about this leadership opportunity, please visit Career Opportunities. Please email a cover letter and resume in one PDF document to goderichinfo@goderich.ca or, mail or drop off to the following address: Town of Goderich – Human Resources, 57 West Street, Goderich, Ontario, N7A 2K5. Application Deadline: 4:00 pm, December 6, 2019.

Program Coordinator - Climate Change (Job ID# 12369) - Durham Region. Reports to: Manager of Sustainability, Office of the Regional Chair & CAO. To learn more about this opportunity, please visit Durham Region Job Postings and apply directly to Job ID# 12369 no later than December 15, 2019.

Director of Public Works - Township of North Glengarry. Reports to: Chief Administrative Officer. A copy of the draft job description and this ad can be found on the Township's website. Resumes will be accepted in strict confidence through email until 4:30 pm, Thursday, December 19, 2019 to cao@northglengarry.ca.

About AMO
AMO is a non-profit organization representing almost all of Ontario's 444 municipal governments. AMO supports strong and effective municipal government in Ontario and promotes the value of municipal government as a vital and essential component of Ontario's and Canada's political system. Follow @AMOPolicy on Twitter!

AMO Contacts
AMO Watch File Tel: 416.971.9856
Conferences/Events
Policy and Funding Programs
LAS Local Authority Services
MEPCO Municipal Employer Pension Centre of Ontario
ONE Investment
Media Inquiries Tel: 416.729.5425
Municipal Wire, Career/Employment and Council Resolution Distributions

Please consider the environment before printing this.

Association of Municipalities of Ontario
200 University Ave. Suite 801,Toronto ON Canada M5H 3C6

TOWNSHIP OF PUSLINCH

PROGRESSING TOGETHER

Township of Puslinch
Delegate Request

Meeting Date: *

Dec 4 2019 (1 pm)

Applicant Information

Last name *

DUBE

First name *

MARK

Mailing address *

[redacted]

Telephone number *

[redacted]

Email address *

[redacted]

Purpose of delegation (state position taken on issue, if applicable): *

Application to allow Bennet steel to do a complete clean up of #4314 Concession 11 by no later than June 30, 2020.

6985 Concession 4
Puslinch, ON N0B 2J0

November 29, 2019

Dear Mayor Seeley:

This letter is being written on behalf of the residents of Puslinch Concession 4 (see attached petition), who reside between Sideroad 20 and Wellington Road 35 (Downey Road). Our purpose is to request of the Puslinch Township Council that the speed limit on this part of Concession 4 be lowered from 80 kph and posted at 60 kph.

Our request for this lowering of the speed limit is based upon our experiences of life on this roadway where there are almost daily near-miss accidents between cars and pedestrians and/or between passing cars and residents attempting to access their properties.

This section of road is 1 ½ km in length and there are now 18 driveways and 4 field accesses along the distance. Eleven of the resident families have owned their properties for 30 years or more and they have seen, first-hand, the changes in traffic densities and speeds.

We make this request based upon the following considerations:

- The road is very much a thoroughfare for commuters to and from Guelph, Kitchener and Cambridge. Traffic density and speed has increased yearly during morning and evening rush hours over a thirty-year period.
- On the occasions when highway 401 is closed, and Wellington Road 34 is congested, our road is used as an alternate. At these times the traffic is frequently bumper to bumper, travelling at high speeds.
- The speed limit on the Hanlon Expressway is 80 kph and that road is a four-lane highway with wide shoulders and controlled access points. Surely our narrow roadway, Concession 4, should have a lower, safer speed.
- The Aberfoyle Waste Facility is located on this section of Concession 4. On Saturdays, in particular, there is heavy traffic along the road, turning in and out of the Facility. There is a marked increase on Wednesdays and Fridays as well since these are the Facilitiy's other two open days.
- To all intents and purposes, there are no shoulders or walkways on this section of Concession 4. It is dangerous to walk at the sides and/or to go out to collect the mail. Riding a bicycle on this stretch is a precarious endeavor.

- Residents are able to provide first hand testimony of cars that regularly travel 100 kph on this section of road.
- Several of the driveways have limited sight ranges. Extreme caution is required whenever a resident leaves his or her property.
- Frequently, gravel trucks travel this section and often at high speeds

In closing I would like to add that the existing 80 kph speed limit was established over 70 years ago when population and traffic densities were dramatically lower. In 2019, this is not the case and the residents of Concession 4 between Sideroad 20 and Downey Road should not have to fear for their lives every time they leave or enter their properties due to the exponential increase in traffic density and speed of travel in recent decades.

We would welcome the opportunity to present our request to Puslinch Council at a forthcoming meeting.

Thank you for your attention to this matter.

Yours sincerely,

Sandra J. Pady

[redacted]

[redacted]

WE THE UNDERSIGNED RESIDENTS OF PUSLINCH TOWNSHIP REQUEST THAT THE SPEED LIMIT ON PUSLINCH CONCESSION 4 BETWEEN SIDEROAD 20 AND WELLINGTON COUNTY ROAD 35 BE REDUCED FROM 80 KPH TO 60 KPH.

NAME	ADDRESS	SIGNATURE
SANDRA BADY	6985 Conc 4	[redacted]
E. BRUNNMEIER	6982 CONC. 4	
Isabella Brunnmeier	6982 Conc. 4	
[illegible]	6992 Conc 4	
Peter Prior	7000 Conc. 4	
DAVID BADY	6985 CON 4	
MINA MAGLIETTA	6985 Conc. 4	
SCOTT & MONICA LAWSON	6999 CONC. 4	
DOROTHY & MICHAEL BRIGGS.	7004. CONC. 4	
MICHAEL BRIGGS	7004 Conc 4	
Barbara Crump	6890 Con 4A	
LAURIE BALL	6968 CONC 4	
Greg Bowles	6968 Con. 4	
ADAM BOWMAN	6981 Con. 4	
Sarah Straughan	6981 Con 4	
Irene Lapointe	6925 Conc 4	
JENNIFER TOLPIN	6996 CONC 4	

2020

BUDGET PRESENTATION

Conservation Halton

CONSERVATION HALTON

261,600
Acres of Watershed Area

10,600
Acres of Owned Area

625,000
Watershed Population

$35M
Annual Revenue

142
Permanent Staff

934
Seasonal Staff

$4.6M
Seasonal Wages

180
Reviews

217
Permits

94%
Minor permits
processed in 30 days

94%
Major permits
processed in 90 days

40%
area with enhanced flood forecasting

80%
flood-prone area with rain gauges

90%
area with real-time climate stations

KEY PRIORITIES

CONSERVATION HALTON

1M+	20,000	36,000	13,300	6,500	4,000
Park Visits	Parks Members	Snow Rentals	Water Rentals	Hops and Harvest	Challenge Course

116	190	5,700	82,200	1,800
Kilometers of Trail	Stations Monitored	Ash Trees Removed	Trees and Shrubs Planted	Stream Restored (m)

103	62	$27.11
New Land in Stewardship (ac)	Stewardship Projects	Partnership Dollar Ratio

63,800	3,900	3,800
Education Participants	Water Festival	Ways of the Woods

2	2	3	4	6
Donkeys	Rabbits	Goats	Sheep	Horses

STRATEGIC PLAN

This is the strategic plan that has been guiding us for the last three years.

STRATEGIC

Objectives → Initiatives → Activities → Tasks

OPERATIONAL

Budgets → Annual plans → Individual work plans → Performance review

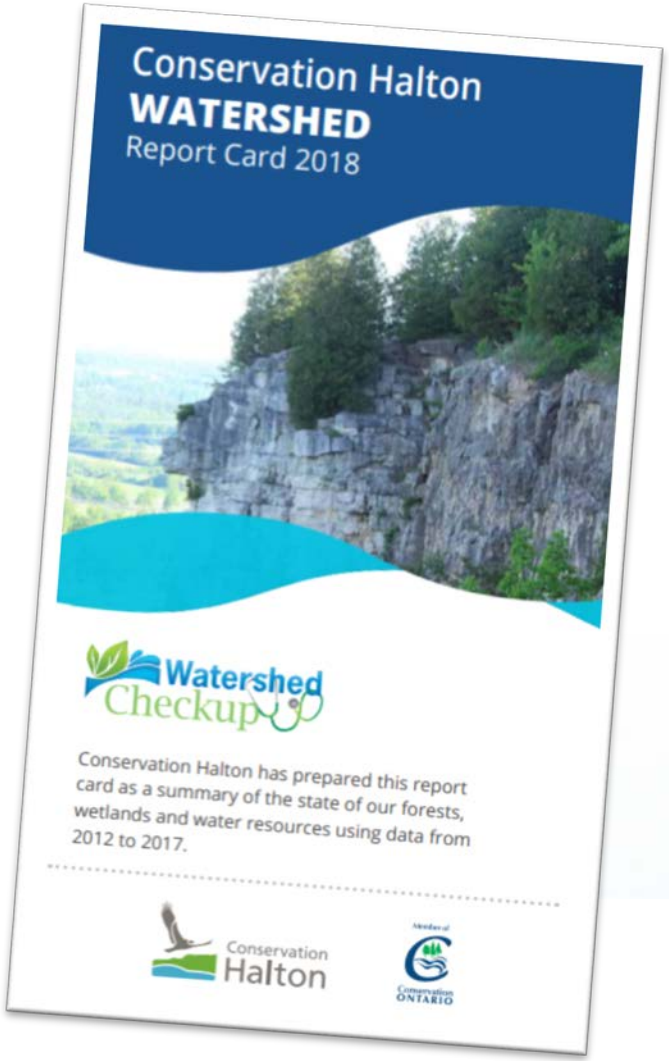
ANNUAL REPORT

This is the annual report that we have used to track progress on our strategic priorities.

- Positive upward trend
- Positive downward trend
- Negative upward trend
- Negative downward trend
- Neutral trend

- On track
- On track with minor issues
- Off track

REPORT CARD



This is the report card that is used to monitor conditions within our watershed.

- Groundwater Quality
- Surface Water Quality
- Forest Conditions
- Impervious Cover

CUSTOMER, TECHNOLOGY AND CAPITAL DRIVERS

POPULATION GROWTH

AGING INFRASTRUCTURE

CHANGING TECHNOLOGY

FINANCIAL SUSTAINABILITY

SERVICE DELIVERY

CARBON FOOTPRINT

2020 BUDGET

2020 BUDGET REQUEST

- Sustainable management of provincial funding reduction
- 1.5% municipal funding increase within regional guidelines
- Asset Management Plan (Phase 2) in support of State of Good Repair Levy
- Continued transition to full cost recovery for program fees

2020 BUDGET SUMMARY

2020 BUDGET SUMMARY

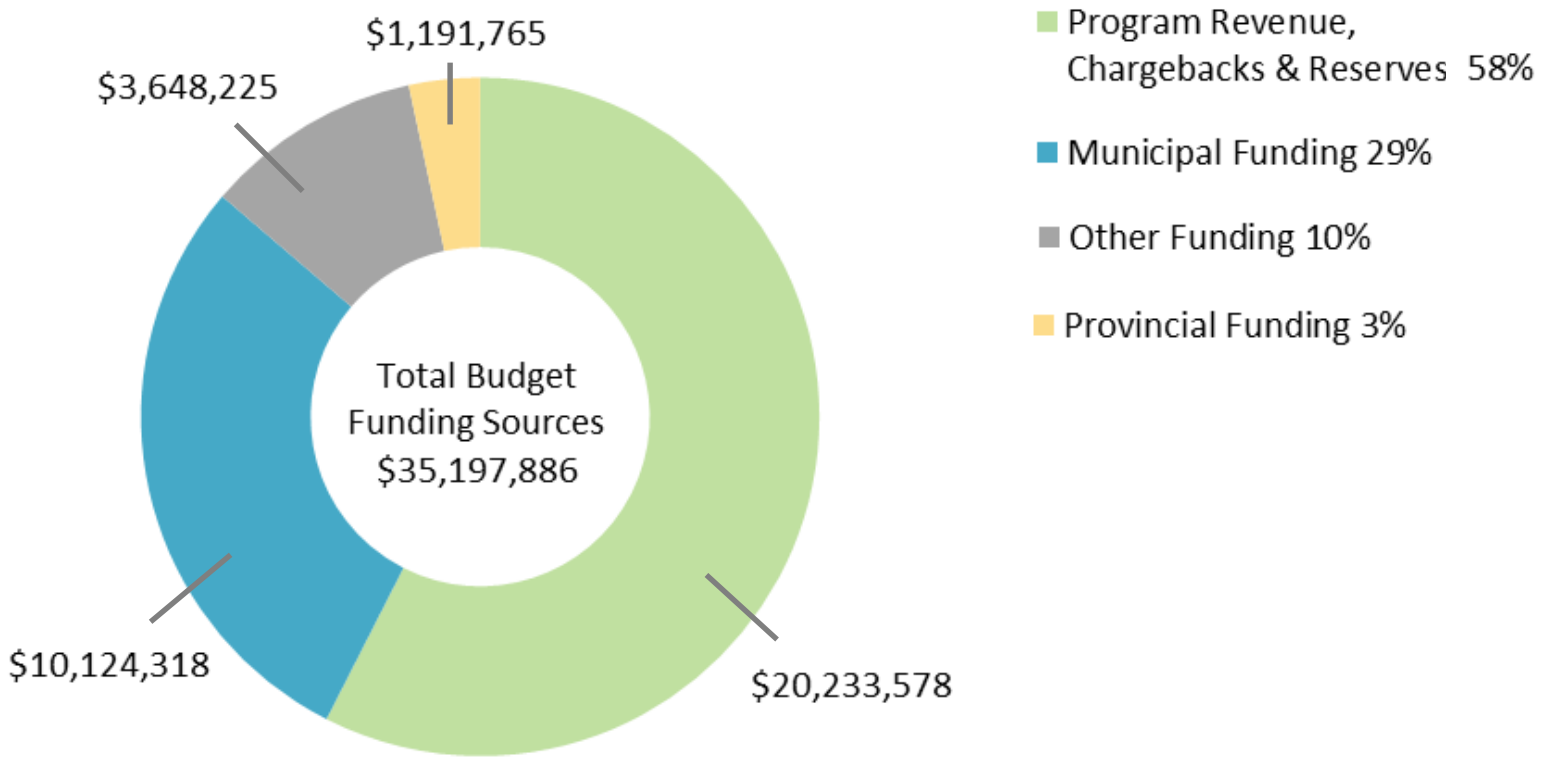
	2020 Budget	2020 Municipal Funding	2019 Municipal Funding	Municipal Funding increase (decrease)
Operating Budget	$30,026,175	$9,221,118	$8,916,785	3.4%
Capital Budget	$4,732,511	$464,000	$647,013	(28.3%)
State of Good Repair Levy	$439,200	$439,200	$414,200	6.0%
TOTAL	$35,197,886	$10,124,318	$9,977,998	1.5%

2020 MUNICIPAL FUNDING

MUNICIPAL APPORTIONMENT

Municipalities	Apportionment	Municipal Funding 2020	Municipal Funding 2019	Change
Halton	87.76%	$8,884,859	$8,746,484	1.6%
Hamilton	7.21%	$730,054	$722,966	1.0%
Peel	4.81%	$487,405	$486,378	0.2%
Puslinch	0.22%	$22,000	$22,170	(0.8%)
TOTAL	100%	$10,124,318	$9,977,998	1.5%

2020 BUDGET FUNDING SOURCES



2020 PRIORITIES

Floodplain mapping

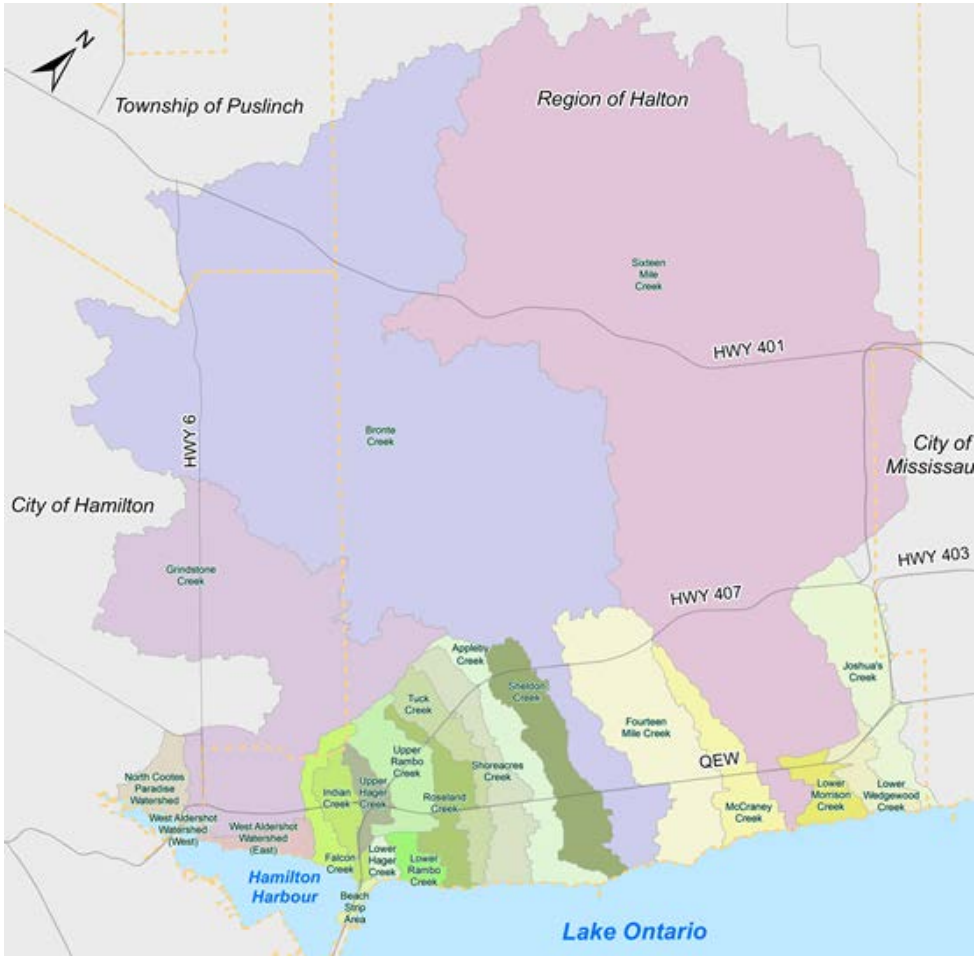
Capital infrastructure

Digital transformation

Financial sustainability

Service delivery

HALTON REGION **FUNDING REQUEST**



2020 Budget: $330,000

2021-2029 Forecast: $2,840,000

THANK YOU

for your continued support.

Conservation Halton

PLANNING REPORT
for the TOWNSHIP OF PUSLINCH

Prepared by the County of Wellington Planning and Development Department

DATE:	November 27th, 2019
TO:	Patrick Moyle, CAO/Clerk (Acting) Township of Puslinch
FROM:	Meagan Ferris, Senior Planner County of Wellington
SUBJECT:	**PLANNING REPORT - Final By-laws for Approval - Farhi Holding Corporation** **Township Zoning By-law Amendment File #D14/FAR** **Concession 2, Part of Lot 26 (No Municipal Address)**

RECOMMENDATIONS

1) That Council receive this Planning Report by the County of Wellington Planning and Development Department; and,

2) That Council approve the zoning by-law amendments prepared by staff and attached to this report.

SUMMARY

This proposal is to amend the Town of Puslinch Zoning By-law to allow for industrial and commercial uses on the subject lands. This application is related to an Official Plan Amendment (Amendment #110). The zoning by-law amendment proposed by staff is consistent with the Provincial Policy Statement, the Growth Plan, maintains the intent and purpose of the County of Wellington Official Plan, and represents good planning.

The applicant has identified some concerns regarding the staff prepared zoning by-law amendments and requests that the by-laws be amended. For Council's review, the requested changes have been highlighted in a letter which is attached to this report.

If Council is in support of the proposed by-laws, as prepared by staff, we recommend that Council approve the zoning by-law amendment.

BACKGROUND

The subject application and draft by-laws were presented to Council on November 6th and the related Official Plan Amendment proposal (Amendment #110) was heard and approved by the County of Wellington Planning Committee on November 14th. The by-law for the Official Plan amendment is to be considered at the November 28th County Council meeting for final approval and adoption.

As previously identified in the 'Planning Recommendation' report (dated October 31st) heard on November 6th, this final report includes the proposed zoning by-laws for Council's approval as the related Official Plan amendment has now been heard by the County Planning Committee. This report also includes a letter, for Council's consideration, from the applicant's agent. The applicant's planning consultant has two concerns regarding the by-laws prepared by staff and this can be seen in the attached letter (Attachment 1).

SUMMARY OF APPLICANT'S CONCERNS AND PLANNING STAFF'S OPINION

The applicant has proposed two changes to the amending by-laws proposed by staff. The first change is to permit a transportation terminal and the second change is to permit outdoor storage. The proponent's planning consultant proposes that the staff prepared by-laws be amended to include the requested changes and to incorporate a provision for screening to address visibility from Highway 401.

In planning staff's opinion, the inclusion of a transportation terminal and permissions for outdoor storage is not appropriate for this specific site due to: land use compatibility as there are existing, surrounding sensitive land uses; concerns expressed by an immediate neighbor (Slovenski Park); the prestige location of the site, including the visibility from the Highway 401; and the direction identified in the Council approved Puslinch Design Guidelines (dated February 2010) which provides guidelines for 'Promoting Quality Development' and has policies that speak to prohibiting outdoor storage for commercial, industrial, and institutional uses that have highway visibility.

In planning staff's opinion, the amending by-laws proposed by staff are consistent with applicable planning policies and represent good land use planning.

Respectfully submitted
County of Wellington Planning and Development Department

Meagan Ferris

_____

Meagan Ferris, RPP MCIP
Senior Planner

Appendix 1: Planning consultant's letter regarding staff prepared by-laws
Appendix 2: Amending by-law prepared by staff for By-law #19/85
Appendix 3: Amending by-law prepared by staff for By-law #023/18

APPENDIX 1: Planning consultant's letter regarding staff prepared by-laws

November 11, 2019

Meagan Ferris, Senior Planner
County of Wellington
74 Woolwich St.
Guelph, Ontario N1H 3T9

Re: Draft Zoning Bylaw, Township of Puslinch (Farhi)

Further to our recent discussions, we are hoping to resolve a couple of issues with the draft zoning bylaw for the Farhi property in Puslinch before a decision is made on the zoning amendment. Our concerns relate to two provisions in the draft bylaw:

1) The proposed list of permitted uses has been scaled back from the list that is found in the Industrial section of the Township's Comprehensive Zoning Bylaw. We note that one of the uses that has been removed is "*transportation terminal*". As discussed, given the proximity to major transportation corridors (Highway 401 and Highway 6), this area is ideally suited for this type of use. We understand that there are other existing transportation terminals in this area (e.g., TransX, Schneider) and as far as we know this has not created any issues of land use compatibility. We have no concern with the proposed removal of other permitted uses in the draft bylaw (e.g., *body shop, contractor's yard, fuel depot*) but request that "*transport terminal*" be included as a permitted use. We believe that this would be consistent with other industrial zoned properties in this area.

2) The draft zoning bylaw would add a prohibition on outdoor storage. We note that the new Township Comprehensive Zoning Bylaw includes a restriction on outdoor storage within the Industrial Overlay Area, as shown on Map B-4, however, this overlay does not include the Farhi lands. It appears that other industrial lands adjacent to Highway 401 have also been excluded from the Area shown on Map B-4.

We also reviewed the Township of Puslinch Design Guideline Study, 2008, which looked at Wellington Road 46 Corridor and Highway 6 south of Maltby Road. The Farhi lands are outside of the area that was part of the 2008 study and there are no specific design guidelines currently developed for this area.

There are a number of proposed permitted uses in the draft bylaw that, by their very nature, could be expected to include some form of outdoor storage (e.g., equipment rental establishment, garden centre, farmers market, retail lumber and building supply).

We suggest that appropriate screening can be incorporated at site plan stage if visibility from Highway 401 is the concern with outdoor storage at this location. We note that other site specific industrial zones include the following provision which could also be incorporated here:

Harrington McAvan Ltd • Landscape Architects
41 Main Street, Unit 102, Unionville, Ontario L3R 2E5 Phone: (905)294-8282 Fax: (905)294-7623
Visit us on the web at www.harringtonmcavan.com

"Outdoor storage areas shall not be visible from a public road or adjacent property and shall be in accordance with the provisions of Section 3 (General Provisions)".

As we discussed, the industrial properties in the Puslinch area are ideally suited for many uses which are not well suited for the Guelph industrial park due to 2 main characteristics- 1) lack of municipal services 2) proximity to highway 401

We understand that the Farhi Zoning Amendment request is scheduled to be considered by Puslinch Township Council in December. We respectfully request that the draft Bylaw be revised to incorporate the comments provided here.

Should you have any questions, or require further information, please feel free to contact me at 416-709-4046.

Sincerely,

Melanie Horton, MCIP, RPP
Director of Planning

Encl.

APPENDIX 2: Amending by-law prepared by staff for By-law #19/85

ZONING BY-LAW AMENDMENT to By-law 19/85

for

Farhi Holdings Corporation

CON 2 PT LOT 26, PUSLINCH

Township Rezoning Application D14/FAR

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

A BY-LAW TO AMEND BY-LAW NUMBER 19/85, AS AMENDED, BEING THE ZONING BY-LAW OF THE TOWNSHIP OF PUSLINCH

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-Law Number 19/85 pursuant to Sections 34 and 36, of the *Planning Act*, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ENACTS AS FOLLOWS:

1. That Schedule "A" of By-law 19/85 is hereby amended by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND-12) ZONE** subject to **HOLDING ZONE PROVISIONS (h-10)** and **NATURAL ENVIRONMENT (NE) ZONE**, as shown on schedule "A" of this By-law.

2. That subsection 15(4) SPECIAL PROVISIONS of the Industrial Zone is amended by adding the following site specific provision:

"(l) **IND-12 (Farhi Holdings Corporation)**
Con 2 PT LT 26

Notwithstanding Section 15(2) of this by-law, within the lands zoned IND-12 on Schedule "A" hereto, the following provisions shall apply:

(i) **Permitted Use**

(a) Business or professional office
(b) Catering establishment
(c) Equipment rental establishment
(d) Factory outlet
(e) Feed mill
(f) Grain storing, weighing and drying operation
(g) Industrial equipment rental establishment
(h) Industrial use
(i) Public use
(j) Retail lumber and building supply
(k) Restaurant
(l) Service trade
(m) Service or repair establishment
(n) Warehouse
(o) Public indoor storage facility
(p) Garden centre
(q) Farmers market
(r) Agricultural service and supply establishment
(s) Ancillary retail, showroom, administrative office, and other uses, buildings and structures to an above listed permitted use

(ii) **Prohibited Uses**

(a) Outdoor and/or open storage;
(b) Uses obnoxious by way of noise, odour, dust, debris, effluent.

(iii) **Zone Requirements**

Notwithstanding the Zone Requirements of Section 15(3), the following shall also be applicable:

(a) Setbacks:
  i) All buildings, structures, septic systems, stormwater management facilities, parking and driveway aisle shall be setback a minimum of 14 metres from the south property line.
  ii) All wells shall be setback a minimum of 30 metres from the south property line.

iii) Development and site alteration shall maintain a minimum 30 metre setback from the wetland and significant woodlands located at the north end of the property.

(iv) **Additional Zone Requirements**

(a) All permitted uses are required to be 'dry' uses. For the purpose of this by-law, 'dry' is defined as:

No water or sewage disposal requirements, that would trigger the need for a permit to take water and/or Environmental Compliance Approval, are necessary for a permitted use, including but not limited to associated manufacturing, processing, fabrication, repair, and packaging.

(b) A freestanding office building shall be less than 4000 m^2 in floor area.

(v) **Site Plan Control**

(a) Development of the subject lands shall be subject to site plan control as per Section 41 of the *Planning Act.*

3. That unless otherwise provided, the subject land as shown on Schedule "A" to this By-Law shall be subject to all applicable regulations of Zoning By-Law 19/85, as amended.

4. That Section 4(6) HOLDING ZONES - 'h' of the by-law be amended to apply holding provision 'h-10' on the subject lands and by adding the following:

(j) **HOLDING ZONE PROVISIONS (Farhi Holdings Corporation) Con 2 PT LT 26**

(i) **Purpose of 'h-10'**

The purpose of this holding provision is to ensure that the following items have been addressed, once a use is known:

i. An updated Traffic Impact Study is submitted to the satisfaction of the Township and County;
ii. An updated Environmental Impact Study is submitted to the satisfaction of the Township;
iii. An updated Storm water Management Report is submitted to the satisfaction of the Township;
iv. As part of the site plan review process the Township and property owner will consider an alternative access/easement on the subject lands in favour of the Slovenski Park;
v. That Grand River Conservation Authority approval has been obtained and permits have been issued;
vi. That Ministry of Transportation approval has been obtained and permits have been issued;
vii. That a Stage 2 Archaeological Assessment in relation to the natural features on site has been completed and accepted by the Ministry of Tourism, Culture and Sport; and
viii. Site plan approval has been completed and the site plan agreement has been registered on title;

(ii) At such time in the future that the Council of the Township of Puslinch is satisfied that the requirements in (j)(i) and any other requirements deemed necessary have been addressed, Council may remove the holding symbol 'h-10' by amendment subject to the requirements of Section 36 of the Planning Act, R.S.O. 1990, as amended.

(iii) Until the holding symbol 'h-10' is removed, no use, buildings or structures shall be permitted."

5. That this By-law shall be deemed to conform with the County Official Plan on and after the day the by-law is passed; and

6. That this By-law shall become effective from the date of passage of an associated Official Plan Amendment by County Council and shall be deemed to not be passed if the amendment to the County Official Plan does not come into effect.

READ A FIRST AND SECOND TIME THIS _____ OF _____, 2019.

_____ _____

MAYOR CLERK

READ A THIRD TIME AND PASSED THIS _____ OF _____, 2019.

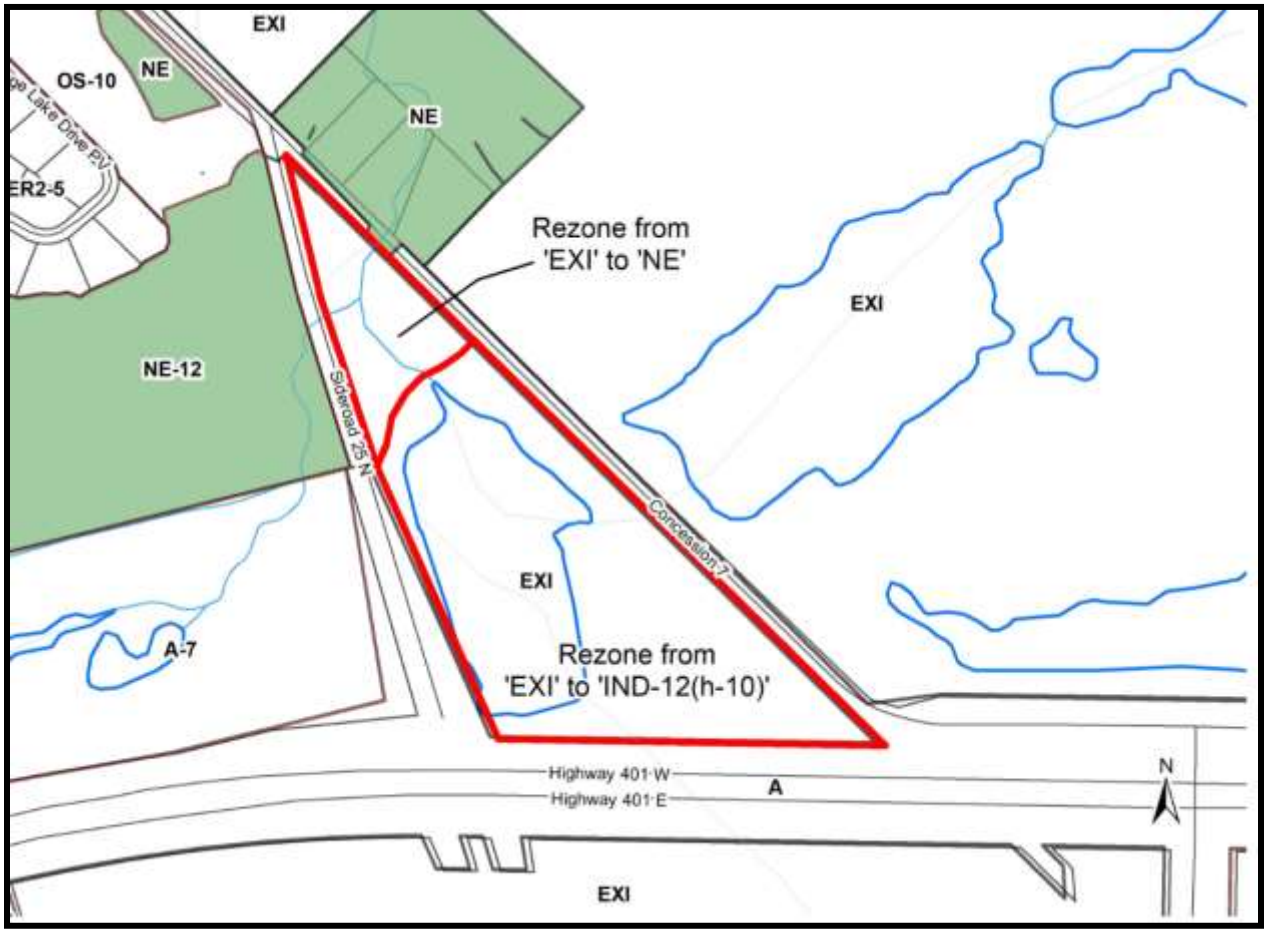
_____ _____

MAYOR CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

Schedule "A"



Highlighted area to be rezoned from "EXI" Zone to a site specific **"IND-12" Zone**, subject to a holding provision **"h-10"**, and **"NE" Zone.**

This is Schedule "A" to By-law No._____

Passed this ____ day of _____, 2019.

_____

MAYOR

_____

CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

EXPLANATION OF BY-LAW NO. _____

By-law Number _____ amends the Township of Puslinch Zoning By-law 19/85 by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND-12) ZONE** subject to **HOLDING ZONE PROVISIONS ('h-10')** and **NATURAL ENVIRONMENT (NE) ZONE.**

The subject property is approximately 9.53 hectares (23.5 acres) in size and vacant of any structures. Access is available via Concession 7 and Sideroad 25 N, with an existing access onto Concession 7.

The purpose of the subject zoning by-law amendment is to rezone the subject lands to a scoped, site specific Industrial (IND-12) Zone that also allows some commercial uses on the subject lands. The subject amendment also establishes a prohibition of certain uses and additional zone requirements; places the subject lands within a holding provision ('h-10') to ensure technical items are addressed when a use/user is known; and limits development within the existing, natural features on the subject lands by placing a portion of the site within the Natural Environment (NE) Zone.

The subject application is also related to an amendment to the County Official Plan (amendment #110) which is to incorporate the subject lands into the Puslinch Economic Development Area by including the lands within PA7-1. Special policy area PA7-1 establishes permissions for additional after-uses for former aggregate pits.

The proposed development is subject to a holding provision and site plan control. The holding provision requires that a series of technical studies and permit issuance be addressed once a development and intended use is known. The site plan process will evaluate on-site functionality, setbacks, technical matters related to the natural features on site, grading, servicing and storm water management, design, etc. No development will take place until such time that site plan approval has been achieved and the holding provision has been removed.

APPENDIX 3: Amending by-law prepared by staff for By-law #023/18

ZONING BY-LAW AMENDMENT to By-law 023/18

for

Farhi Holdings Corporation

CON 2 PT LOT 26, PUSLINCH

Township Rezoning Application D14/FAR

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

A BY-LAW TO AMEND BY-LAW NUMBER 023/18, AS AMENDED, BEING THE ZONING BY-LAW OF THE TOWNSHIP OF PUSLINCH

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-Law Number 023/18 pursuant to Sections 34 and 36 of the Planning Act, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ENACTS AS FOLLOWS:

1. That Schedule "A" of By-law 023/18 is hereby amended by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND SP92) ZONE,** subject to **HOLDING PROVISIONS (h-10),** and **NATURAL ENVIRONMENT (NE) ZONE**, as shown on Schedule "A" of this By-law.

2. That Schedule "B", "Map B-4" of By-law 023/18 is hereby amended by including the subject lands, as shown on Schedule "A" to this by-law, within the Industrial Design Overlay.

3. That Section 14 Site-Specific Special Provisions is amended by adding the following site specific provision:

No.	Parent Zone	Additional Permitted Uses	Prohibited Uses	Site Specific Special Provision
92	IND	Only the following uses shall be permitted: Business or professional office; Catering establishment; Equipment rental establishment; Factory outlet; Feed mill; Grain storing, weighing and drying operation; Industrial equipment rental establishment; Industrial use; Public use; Retail lumber and building supply; Restaurant; Service trade; Service or repair establishment; Warehouse;	Outdoor and/or open storage; Uses obnoxious by way of noise, odour, dust, debris, effluent.	All permitted uses, including ancillary uses, are required to be 'dry' uses. For the purpose of this by-law, 'dry' is defined as: No water or sewage disposal requirements, that would trigger the need for a permit to take water and/or Environmental Compliance Approval, are necessary for a permitted use, including but not limited to associated manufacturing, processing, fabrication, repair, and packaging. A freestanding office building shall be less than 4000 m^2 in floor area.

		Public indoor storage facility; Garden centre; Farmers market; Agricultural service and supply establishment; Ancillary retail, showroom, administrative office, and other uses, buildings and structures to an above listed permitted use.		

4. That unless otherwise provided, the subject land as shown on Schedule “A” to this By-Law shall be subject to all applicable regulations of Zoning By-Law 023/18, as amended.

5. That Section 15(1) HOLDING PROVISIONS of the by-law be amended to apply holding provision ‘h-10’ on the subject lands and by adding the following:

No.	Zone Designation	Permitted Uses	Conditions for Removal	Date Enacted
10	IND (SP92)	Until the holding symbol ‘h-10’ is removed, no use, buildings or structures shall be permitted.	x. An updated Traffic Impact Study is submitted to the satisfaction of the Township and County; x. An updated Environmental Impact Study is submitted to the satisfaction of the Township; i. An updated Storm water Management Report is submitted to the satisfaction of the Township; xii. As part of the site plan review process the Township and property owner will consider an alternative access/easement on the subject lands in favour of the Slovenski Park; iii. That Grand River Conservation Authority approval has been obtained and permits have been issued; xiv. That Ministry of Transportation approval has been obtained and permits have been issued; xv. That a Stage 2 Archaeological Assessment in relation to the natural features on site has been completed and accepted by the Ministry of Tourism, Culture and Sport; and xvi. Site plan approval has been completed and the site plan agreement has been registered on title.	

6. That this By-law shall be deemed to conform with the County Official Plan on and after the day the by-law is passed; and

7. That this By-law shall become effective from the date of passage of an associated Official Plan Amendment by County Council and shall be deemed to not be passed if the amendment to the County Official Plan does not come into effect.

READ A FIRST AND SECOND TIME THIS _____ OF _____, 2019.

_____ _____

MAYOR CLERK

READ A THIRD TIME AND PASSED THIS _____ OF _____, 2019.

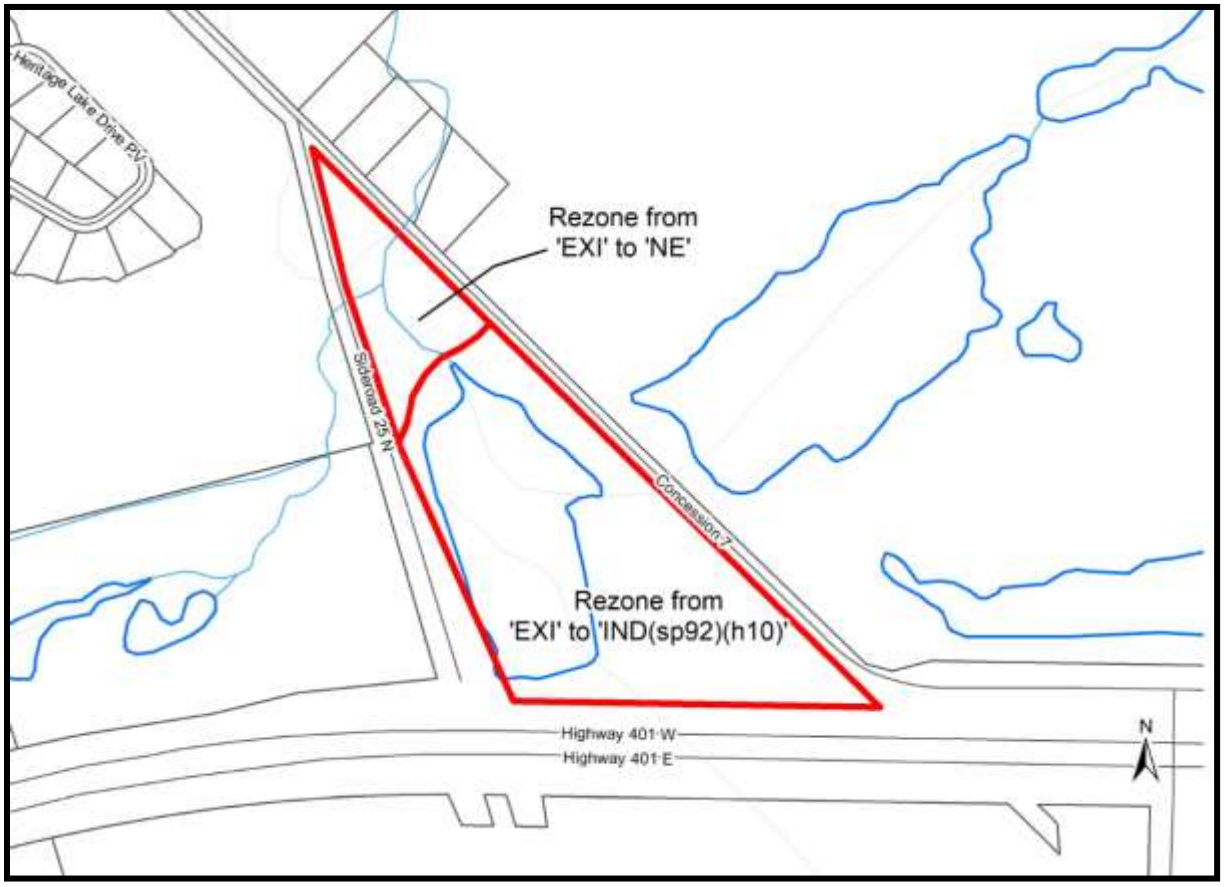
_____ _____

MAYOR CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

Schedule "A"



Highlighted area to be rezoned from "**EXI" Zone** to a site specific **"IND (SP92)" Zone**, subject to a holding provision **(h10),** and **"NE" Zone.**

This is Schedule "A" to By-law No._____

Passed this ____ day of _____, 2019.

_____

MAYOR

_____

CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

EXPLANATION OF BY-LAW NO. _____

By-law Number _____ amends the Township of Puslinch Zoning By-law 19/85 by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND SP92) ZONE** subject to **HOLDING ZONE PROVISIONS (h-10)** and **NATURAL ENVIRONMENT (NE) ZONE.**

The subject property is approximately 9.53 hectares (23.5 acres) in size and vacant of any structures. Access is available via Concession 7 and Sideroad 25 N, with an existing access onto Concession 7.

The purpose of the subject zoning by-law amendment is to rezone the subject lands to a scoped, site specific Industrial (IND SP92) Zone that also allows some commercial uses on the subject lands. The subject amendment also establishes a prohibition of certain uses and additional zone requirements; places the subject lands within a holding provision ('h-10') to ensure technical items are addressed when a use/user is known; and limits development within the existing, natural features on the subject lands by placing a portion of the site within the Natural Environment (NE) Zone.

The subject application is also related to an amendment to the County Official Plan which is to incorporate the subject lands into the Puslinch Economic Development Area by including the lands within PA7-1. Special policy area PA7-1 establishes permissions for additional after-uses for former aggregate pits.

The proposed development is subject to a holding provision and site plan control. The holding provision requires that a series of technical studies and permit issuance be addressed once a development and intended use is known. The site plan process will evaluate on-site functionality, setbacks, technical matters related to the natural features on site, grading, servicing and storm water management, design, etc. No development will take place until such time that site plan approval has been achieved and the holding provision has been removed.

REPORT ADM-2019-029

TO: Mayor and Members of Council

FROM: Kyle Davis, Risk Management Official

MEETING DATE: December 4, 2019

SUBJECT: Updates to the Wellington County Chapter of the Grand River Source Protection Plan

File:

RECOMMENDATION

That Report ADM-2019-029 regarding Updates to the Wellington County Chapter of the Grand River Source Plan and Associated Assessment Report be received for information; and

And that Council hereby provides a Municipal Resolution in support of the proposed revisions to the Grand River Source Protection Plan and associated Assessment Report.

Background

The Township of Puslinch is part of two Source Protection Regions, including the Lake Erie Source Protection Region – Grand River Source Protection Plan. The Grand River Source Protection Plan came into effect on July 1, 2016. This report summarizes proposed revisions to the Grand River Source Protection Plan and outlines staff comments on the proposed revisions.

Following the Lake Erie Source Protection Committee meeting on October 3, 2019, the Grand River Source Protection Authority initiated pre-consultation with affected municipalities, provincial ministries and other implementing bodies on proposed changes to the Wellington County Chapters of the Grand River Source Protection Plan and Assessment Report. Attachment 1 provides the pre-consultation notice dated October 7, 2019 including draft, updated policy applicability maps for Wellington County and proposed policy changes. Attachment 2 provides the draft Assessment Report and draft Source Protection Plan chapters.

The proposed changes are a locally initiated amendment (initiated by the Source Protection Authority / Source Protection Committee and the municipalities) under Section 34 of the Clean Water Act. That Section of the Clean Water Act requires Council resolutions from affected municipalities prior to public consultation. A municipality may be considered "affected" if it is located within a geographic area related to the amendments, and / or the municipality is responsible for taking actions or otherwise implementing source protection policies related to the amendments. Seven of the eight Wellington County municipalities are considered affected by the proposed changes

including the Township of Puslinch and the County of Wellington. Council resolutions will be required from all seven affected municipalities. A resolution is attached for Council's consideration.

Public consultation on this amendment is scheduled for January / February 2020 depending on the receipt of Council resolutions. The Source Protection Committee may also decide to proceed with public consultation in advance of all Council resolutions being received.

A related topic, changes to vulnerable area mapping from Region of Waterloo water systems, was previously reported to Council on April 3, 2019. A copy of that report is available here. Council passed a resolution, at that time, in support of only the mapping changes. This report now focuses on the policy changes that will apply to the mapping changes outlined in the April 3, 2020 report.

Purpose

Two documents are being updated as part of the proposed changes: the Grand River Assessment Report and the Grand River Source Protection Plan. For reference, an Assessment Report describes the municipal wellfields and water systems and the science related to delineating wellhead protection areas while the Source Protection Plan outlines the legal requirements or policies that apply within the wellhead protection areas and other vulnerable areas.

Updates to the Wellington Chapter of the Grand River Assessment Report

The proposed revisions include mapping and text changes within the Wellington County Chapter (Chapter 6). The only revisions that apply to the Township of Puslinch are:

- Updates to the methodology, terminology and typographical error updates or corrections for all municipalities.

The majority of the Assessment Report revisions apply to mapping changes related to the Township of Centre Wellington and Township of Guelph / Eramosa. As discussed above, the mapping changes affecting the Township of Puslinch were addressed in an earlier update outlined in a report to Council on April 3, 2019.

Updates to the Wellington Chapter of the Grand River Source Protection Plan

The proposed revisions include mapping and text changes within the Wellington County Chapter (Chapter 7). The full text of the proposed policy changes are provided in Attachment 1 and 2. The proposed policy changes were completed by Wellington Source Water Protection and County staff, in consultation with municipal and GRCA staff.

The policy changes were primarily because new Chloride Issue Contributing Areas in Centre Wellington and Puslinch are proposed. An issue contributing area (ICA) is delineated for municipal wells when a water quality parameter, such as chloride, is increasing over time in the well or exceeds provincial standards or objectives. Chloride ICAs in Puslinch and Centre Wellington triggered a municipal review of prescribed drinking water threat policies related to chloride. As a result of that review, proposed new drinking water quality policies have been developed and amendments made to approved policies as required. The proposed policy changes are based on

common and best practice in other municipalities with chloride issue contributing areas. In particular, policies applicable in the Region of Waterloo, Town of Orangeville, Region of Halton, City of Barrie, York Region among others were reviewed.

Policy work primarily focused on proposed new drinking water quality policies and amendments to approved policies for the following drinking water threats:

- the Application of Road Salt,
- the Handling and Storage of Road Salt,
- the Storage of Snow, and
- Sewage System or Sewage Works.

The proposed policies include:

- Prohibitions for uncovered road salt storage in any quantity and covered road salt storage in quantities greater than 100 kilograms within 100 metres of municipal wells.

- Prohibition for large quantities of snow storage (typically greater than one hectare) within 100 metres of municipal wells.

- Requirement for risk management plans for road salt storage, road salt application and snow storage within the ICA. Properties must meet certain thresholds related to parking lot / hard surface area (greater than 200 square metres) and land use (residential use less than four units are exempt).

- Land use planning policies to encourage future development to be designed following best management practices for road salt storage, road salt application, snow storage and stormwater management to minimize sodium and chloride infiltration to groundwater.

- Inclusion of new definitions for stormwater management facility, salt application area, and salt.

- Addition of a new policy (WC-MC-3.8) to manage existing and new stormwater management facilities where chloride could leach into groundwater.

- Policies related to municipal road maintenance and design including updates to existing Salt Management Plans as required.

- Policies related to private well maintenance and decommissioning where poorly maintained wells may become a transport pathway for chloride to enter the groundwater.

- Education policies to encourage best management practices for road salt storage, road salt application and snow storage for all land uses including single family residential.

- Update to monitoring policy WC-MC-1.14 to include Well F1 in Centre Wellington and Station Street Wells 1 and 2 in Guelph/Eramosa.

- Addition of a clarification in the current prohibition policy for new sewage treatment plants (policy WC-MC-3.4) to ensure existing plants are not affected.

- Incentive policies WC-CW-1.6, 1.7, 1.8 and transport pathway policy CW-CW-1.20, have not been amended, however, are in effect and allow incentive policies to be developed, if desired, to assist property owners with the proposed policy requirements.

In addition to the policy changes related to road salt and the chloride ICAs, other policies were amended to address implementation challenges or changes to provincial guidance.

Other proposed revisions include:

- Updates to policy text to align with policies from neighbouring Source Protection Regions to ensure consistency in implementation across the County. This includes edits to the Risk Management Official written direction policy that provides guidance on how planning and building applications are screened for review pursuant to the Clean Water Act.

- Update to contaminated sites policy WC-NB-1.18 to reduce the meeting frequency from six months to once every calendar year.

- Removal of Sodium and Chloride ICA from Education and Outreach policy for septic systems and holding tanks. This change is in response to changes to provincial requirements.

- Revisions to policies related to application and storage of manure, application and storage of fertilizer, livestock, and septic systems to remove reference to land being phased in under the Nutrient Management Act. This removes a policy gap and implementation challenge where the current policy only applied to portions of farms that were phased in. Note that agricultural policies only apply within vulnerability score 10 or within a Nitrate ICA.

- Addition of Nitrate ICA to risk management plan or septic inspection policies related to application and storage of manure, application and storage of fertilizer, livestock, and septic systems to ensure consistency with Non-Agricultural Source Material (NASM) policies and policies in neighbouring source protection plans (CTC). Previously these activities were addressed through education and outreach policies.

- Inclusion of a minimum 25 litre threshold to require risk management plans for Dense Non- Aqueous Phase Liquid (DNAPL) storage and handling (policies WC-CW-16.1 and 16.3). Currently, risk management plans are required for any quantity in industrial, institutional, commercial and agricultural land uses. This change was proposed to introduce consistency with other County Source Protection Plans (Maitland and Saugeen) and to allow some flexibility for agricultural properties where quantities stored are similar to residential properties. Currently, residential properties are managed through education policies and under this proposal, quantities under 25 litres, at the other referenced land uses, would also be managed through education policies.

At the October 3, 2019 Lake Erie Source Protection Committee, some members commented that the 25 litre threshold seemed high for locations within 100 metres of municipal wells or in high vulnerability scoring. In response to these comments, Wellington Source Water Protection staff are recommending retaining the requirement for any quantity of DNAPLs to require a risk management plan within 100 metres of municipal wells or within a vulnerability score of 10. It should be noted that there are no changes proposed to the current policy that prohibits future handling or storage of DNAPLs within 100 metres of a municipal well (WC-CW-16.2).

If approved by the Province, the Assessment Report and Source Protection Plan changes would not be in legal effect until, at the earliest, Fall 2020. The Grand River Source Protection Plan outlines the timelines for meeting the new requirements (Policy WC-CW-1.1.2). The timelines vary, depending on the requirement, with most being multiple years from the effective date. Risk Management Plan implementation remains at the discretion of the Risk Management Official.

Analysis of Impact to Property Owners

As reported to Council in the April 3, 2019 report, Township staff identified approximately 30 properties located within the proposed Chloride issues contributing area that may require a risk management plan for salt storage and / or application if those activities are occurring at the properties. These are properties that appear to have large parking lots or paved surfaces, based on the 2015 air photos. The properties included are primarily multi-residential, industrial, commercial, institutional properties and parks, car pool lots or conservation lands with parking lots. There are some farm properties included when there appeared to be a large parking lot or paved surface present. To date, no field verification of these properties have been completed. Risk Management staff will be conducting that work in the future and will directly discuss potential requirements with affected property owners. The owners will also receive notification from the GRCA regarding the January / February 2020 public consultation. Some of the owners did attend the previous public consultation period in March 2019 or called Risk Management staff. The vast majority of the properties within the Chloride ICA in the Township are rural residential or agricultural where only the proposed education and outreach policies apply, not the risk management plan policies. These properties will also receive notification from the GRCA regarding the January / February 2020 public consultation.

Next Steps

The purpose of this report is to provide Council the opportunity to review and consider the proposed changes to the Wellington County Chapters of the Grand River Source Protection Plan and Assessment Report and to provide comments. The proposed changes are based on common and best practice in other jurisdictions. In addition to comments received during the report's presentation, comments can be directed, through the Clerk, to the Township Risk Management Official, Kyle Davis. Although the pre-consultation notice indicates a date of November 12, 2019 for comments and November 29, 2019 for Council resolutions, GRCA staff have indicated that comments can be provided along with the Council resolutions. GRCA staff have also indicated that the November 29, 2019 date for Council resolutions is flexible and is only intended as a guide due to their Source Protection Committee schedule. The Lake Erie Source Protection Committee is scheduled to receive an update on these proposed changes on December 12, 2019 and to make a decision on whether to begin public consultation in January 2020. A resolution is attached to the report for Council's consideration. Comments received from Council or staff are being compiled by Wellington Source Water Protection staff and will be forwarded to the Lake Erie Source Protection Committee as part of the formal pre-consultation or public period.

Financial Implications

The proposed changes, especially the increase in area of the Chloride issue contributing areas, will result in an increased number of properties with source protection requirements. This will result in increased municipal costs to implement the source protection program. The majority of the properties in the Chloride ICA are rural residential or farm properties without large paved surfaces, and therefore managed through education policies. There will be a cost related to the increased education policies and that is included in the draft County operating budget for consideration, as County wide, there is an overall increase in education requirements.

As noted above, there are approximately 30 properties in the Township that will require risk management plans for the application and / or storage of road salt. The properties requiring risk management plans will also require inspections and follow-up to ensure compliance by the Risk Management Official and Inspector. Future development within the issues contributing areas may be subject to increased planning review and there are policies related to municipal road salt management. It is noted that the Township is considering a change to blue salt (magnesium chloride), this is a proactive step that assists the Township in meeting some of the proposed municipal road salt management policies. Although these different policy approaches will require different levels of staff involvement and cost, overall there will be an increase in Township Risk Management staff workloads and financial cost to meet these requirements. Partially related to this, there is a proposal in all the local municipal 2020 budgets to make the shared Risk Management Inspector position permanent. Currently, the Inspector position is on a three year contract ending July 2020. A complete analysis of the increased workload is ongoing. Regional staff have indicated a willingness to meet and discuss costs related to the expanded wellhead protection areas.

If approved by the Province, the Assessment Report and Source Protection Plan changes would not be in legal effect until, at the earliest, Fall 2020. Therefore, it is anticipated that the analysis of the increased workload will be presented as part of 2021 budget considerations at the earliest.

Applicable Legislation and Requirements

Clean Water Act
Grand River Source Protection Plan

Attachments

Attachment 1 – October 7, 2019 Pre-consultation Notice – Draft Updated Grand River Source Protection Plan

Attachment 2 – Draft, Updated Wellington County Chapters of Grand River Source Protection Plan and Assessment Report

October 7, 2019

Notice of Pre-Consultation – Draft Updated Grand River Source Protection Plan

You are being provided this notice and information because your ministry/municipality may be affected by recent updates to water quality Wellhead Protection Areas (WHPA) and/or are responsible for the implementation of source protection plan policies.

The Ministry of the Environment, Conservation and Parks (MECP) approved the first iteration of the Grand River Assessment Report and Source Protection Plan on November 26, 2015. Since approval, additional technical studies have been completed in the Township of Centre Wellington and the Township of Guelph/Eramosa. These studies included WHPA updates for the Rockwood and Hamilton Drive municipal supply systems and a WHPA update and delineation of Issue Contributing Areas (ICAs) for the Centre Wellington municipal supply system.

New water quality policies have been developed and additional revisions have been made to existing policies (**Appendix A**) related to:

- The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage
- The application of road salt
- The handling and storage of road salt
- The storage of snow

The Grand River Source Protection Authority is the lead authority in the Lake Erie Source Protection Region and as such along with the Lake Erie Region Source Protection Committee initiated an update to the Grand River Source Protection Plan and Assessment Report under s.34 of the *Clean Water Act, 2006*.

The draft updated policy applicability maps for Wellington County are included in **Appendix B.**

Please review the source protection plan updates as they relate to your requirements for implementation and provide any comments by **November 12, 2019** to:

Martin Keller
Source Protection Program Manager
Lake Erie Source Protection Region
400 Clyde Rd., Box 729, Cambridge, ON N1R 5W6
519-620-7595
mkeller@grandriver.ca

The Grand River Source Protection Authority has been working on this update closely with Wellington Source Water Protection, a partnership of the Wellington County municipalities. Wellington Source Water Protection, County and local municipal staff have been involved in the drafting of the enclosed changes. For the Wellington County municipalities, Kyle Davis, Risk Management Official (RMO) will be in contact shortly to discuss staff reports and presentations to Council.

If you would like to discuss any of the material provided in this notice, please contact Martin Keller, Source Protection Program Manager, at the phone number or email listed above.

Municipal Endorsement and Public Consultation

As required by S.34(3) of the Clean Water Act, 2006, the Grand River Source Protection Authority must obtain municipal council resolutions from Wellington County, Township of Puslinch, Township of Guelph/Eramosa, Township of Centre Wellington, Township of Mapleton, Township of Wellington North and the Town of Erin prior to formal public consultation.

The Grand River Source Protection Authority is requesting resolutions from the Councils of Wellington County, Township of Puslinch, Township of Guelph/Eramosa, Township of Centre Wellington, Township of Mapleton, Township of Wellington North and the Town of Erin by November 29, 2019, if possible. The resolutions can be sent to Martin Keller at the address above.

The public consultation period on the Draft Updated Grand River Source Protection Plan is scheduled to start on Monday, January 6, 2020, and closes on Wednesday, February 19, 2020.

Following the public consultation period, the Lake Erie Region Source Protection Committee will consider any comments received at their meeting on March 12, 2020 and direct staff to revise the Draft Updated Grand River Source Protection Plan, as necessary. The revised Draft Updated Plan will then be released to the Grand River Source Protection Authority for submission to the MECP in the spring 2020.

Sincerely,

Source Protection Program Manager
Lake Erie Source Protection Region

Appendix A:
Draft updated policy amendments for Wellington County

Policy Number	Source Protection Plan Policies within the County of Wellington
Transitional Policies and Implementation Timing	
WC-CW-1.1.1 *Implement. & Timing*	This source protection plan came into effect on July 1, 2016, the effective date specified in the Notice of Approval posted on the Environmental Registry of Ontario. Amendments to the Source Protection Plan are permitted in accordance with the *Clean Water Act, 2006,* and the General Regulations. The effective date for amended policies, only including but not limited to the addition of new drinking water threats and regulated areas and activities, is the date of posting of the Notice of Approval of the amendment provisions on the Environmental Registry of Ontario.
Uses and Areas Designated as Restricted Land Use	
WC-CW-1.3 *Part IV- RLU*	In accordance with Section 59 of the *Clean Water Act*, *2006*, all land uses, except solely residential uses, where significant drinking water threat activities have been designated for the purposes of Sections 57 and 58 of the *Clean Water Act, 2006* are hereby designated as Restricted Land Uses and a written notice from the Risk Management Official shall be required prior to approval of any Building Permit, *Planning Act or Condominium Act* application. Despite the above policy, a Risk Management Official may issue written direction specifying the situations under which a planning authority or Chief Building Official may be permitted to make the determination that a site specific land use is, or is not, designated for the purposes of section 59. Where such direction has been issued, a site specific land use that is the subject of an application for approval under the *Planning Act* or for a permit under the *Building Code Act* is not designated for the purposes of Section 59, provided that the planning authority or Chief Building Official, as applicable, is satisfied that: a. The application complies with the written direction issued by the Risk Management Official; and b. The applicant has demonstrated that a significant drinking water threat activity designated for the purposes of section 57 or 58 will not be engaged in, or will not be affected by the application. Where the Risk Management Official has provided written direction designating a land use for the purpose of section 59, a written Notice from the Risk Management Official shall be required prior to approval of any Building Permit under the *Building Code Act, 1992* as amended, in addition to *Planning Act* and *Condominium Act* applications in accordance with Section 59 of the *Clean Water Act, 2006*.
Annual Reporting	
WC-CW-1.9 *Monitoring*	The municipality and / or County shall provide a report to the Source Protection Authority, by February 1st of each year, summarizing the actions taken to implement the Source Protection Plan policies, where specifically required by the policies. Where the municipality and / or County is required to implement education and outreach programs as the primary means of managing the risk associated with significant drinking water threats, the report must indicate, at minimum additional details on how the significant drinking water threat was managed and/or ceased to be significant.

Policy Number	Source Protection Plan Policies within the County of Wellington
WC-CW-1.14 *Monitoring*	The municipality shall provide a report to the Source Protection Authority, by February 1st, of each year, for the wells within its jurisdiction. This report shall summarize the actions taken the previous year to assess the chloride concentrations related to Municipal Well E3 in Elora and Municipal Well F1 in Fergus and / or sodium and chloride concentrations related to Station Street Wells 1 and 2 in Rockwood, including recommendations for further study or monitoring, if required. The report shall include a conclusion on whether the chloride concentrations should be a described issue in accordance with the *Clean Water Act* and technical rules.
Conditions	
WC-NB-1.18 *Existing Specify Action Condition Sites Identified* *Monitoring*	To address conditions resulting from past activities that are significant drinking water threats the Ministry of Environment, Conservation and Parks and the County and/or municipality: a. Shall meet at a minimum frequency of once a calendar year for the purpose of mutually sharing information on Condition sites; b. Should mutually share information related, as appropriate, to technical investigations or remediation, technical data, actions taken by Ministry of Environment, Conservation and Parks or by the County and/or municipality, inspections, other relevant information; and c. Should develop an Information-Sharing Process document including requirements, if any, for meeting agendas, participants, the nature and format for the types of information to be mutually shared, and the Information-Sharing Process document should be developed within six months from the date the Source Protection Plan takes effect.

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
2. Establishment, Operation or Maintenance of a System That Collects, Stores, Transmits, Treats or Disposes of Sewage	
Sewage System or Sewage Works – Onsite Sewage Systems and Onsite Sewage System Holding Tank	
WC-CW-3.1 *Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT)*	To ensure existing or new onsite sewage systems and onsite holding tanks with a design flow of less than or equal to 10,000 Litres per day and subject to approval under the *Ontario Building Code Act* or the *Ontario Water Resources Act* within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ-1 or Nitrate ICA, cease to be or never become a significant drinking water threat the municipality shall implement an on-site sewage system maintenance inspection program. Inspections shall be prioritized based on the proximity to the drinking water supply.
WC-CW-3.2 *Existing/Future Education & Outreach WHPA-A-v.10;*	To ensure existing or new onsite sewage systems and onsite holding tanks with a design flow of less than or equal to 10,000 Litres per day and subject to approval under the *Ontario Building Code Act* or the *Ontario Water Resources Act* within a WHPA-A or B with a vulnerability score equal to ten (10), IPZ-1, or Nitrate ICA cease to be or never become a significant drinking water threat, the municipality

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WHPA-B-v.10; IPZ-1-v.10; ICA (NIT)	shall develop and implement an education initiative about small onsite sewage systems and holding tanks. The education program shall encourage the use of beneficial management practices that reduce the impact on groundwater.
Sewage System or Sewage Works – Sewage Works Storage - Treatment or Holding Tanks Sewage System or Sewage Works - Sewage Treatment Plant Effluent Discharges (Includes Lagoons) Sewage System or Sewage Works – Sewage Treatment Plant By-Pass Discharge to Surface Water	
WC-MC-3.4 *Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; WHPA-B-v.8; WHPA-C-v.8; IPZ-1_v.10; ICA(NIT/TCE/CHL)*	To ensure the establishment of new sewage treatment plants with effluent and/or bypass discharge or new sewage treatment plants with sewage storage tanks never become a significant drinking water threat, where these activities would be a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall prohibit these activities within the Environmental Compliance Approvals process. This policy does not apply to the expansion, modification, optimization, re-rating, operation, maintenance or replacement of existing sewage treatment plants.
Sewage System or Sewage Works – Sanitary Sewers and Related Pipes	
WC-MC-3.5 *Existing/ Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1_v.10; ICA(NIT)*	For any existing or new sanitary sewers and related pipes, industrial effluent discharge and /or existing sewage treatment plants, where these activities are, or would be, a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to incorporate terms and conditions that, when implemented, will ensure that these activities cease to be or never become a significant drinking water threat. The terms and conditions may include requirements for regular maintenance, monitoring and inspections conducted by the proponent.
Sewage System or Sewage Works – Discharge from a Stormwater Management Facility	
WC-MC-3.7 *Existing/Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA(NIT/CHL)*	For any existing or new stormwater management facility that discharges stormwater, where this activity is, or would be, a significant drinking water threat, as prescribed by the *Clean Water Act*, *2006,* the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to incorporate terms and conditions that, when implemented, will ensure that this activity ceases to be or never becomes a significant drinking water threat. The terms and conditions may include requirements for regular maintenance, monitoring and inspections conducted by the proponent.
WC-CW-3.8 *Existing/Future Part IV – RMP ICA (CHL)*	To ensure any existing or new stormwater management facility ceases to be or never becomes a significant drinking water, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006*, and a Risk Management Plan shall be required where the following applies: a) where the activity is or would be a significant drinking water threat b) the stormwater management facility is located within a Chloride Issues Contributing Area; and

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
	c) the stormwater management facility does not require an Environmental Compliance Approval.
3. The Application of Agricultural Source Material to Land	
WC-CW-4.2 *Existing/Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure the existing or future application of agricultural source material to land within a WHPA-B with a vulnerability score equal to ten (10), or a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required. The requirements of the Risk Management Plan will generally be based on the requirements of a Nutrient Management Plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.
4. The Storage of Agricultural Source Material	
WC-CW-5.2 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b) Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure: a. any existing storage of agricultural source material on lands where this activity is a significant drinking water threat, within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ-1 or a Nitrate ICA; or b. the future storage of agricultural source material on lands within a WHPA-B with a vulnerability score equal to ten (10) or a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required. The requirements of the Risk Management Plan will generally be based on the requirements of a nutrient management plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.
8. The Application of Commercial Fertilizer to Land	
WC-CW-8.3. *Existing/Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure the existing or future application of commercial fertilizer to non-agricultural lands (excluding an individual for personal or family use) or agricultural land within a WHPA-B with a vulnerability score equal to ten (10) or a Nitrate ICA outside of a WHPA-A ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
9. The Handling and Storage of Commercial Fertilizer	
WC-CW-9.1 *a) Existing Part IV-RMP WHPA-A-v.10;*	To ensure: a. any existing handling and storage of more than 2,500 kilograms of commercial fertilizer as defined in O. Reg. 267/03 within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10), an IPZ-1, or a Nitrate

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WHPA-B-v.10; IPZ-1-v.10; ICA (NIT) *b) Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	ICA or b. the future handling and storage of more than 2,500 kilograms of commercial fertilizer as defined in O. Reg. 267/03 within a WHPA-B with a vulnerability score equal to ten (10) a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required.
2. Establishment, Operation or Maintenance of a System That Collects, Stores, Transmits, Treats or Disposes of Sewage **12. The Application of Road Salt** **13. The Handling and Storage of Road Salt** **14. The Storage of Snow**	
WC-MC-12.01 *Future Land Use Planning ICA (CHL)*	This policy applies to all land uses except residential consisting of four units or fewer and only where the salt application area is equal to or greater than 200 square metres or 8 parking spaces. The County of Wellington and Municipality shall generally require such future development to be designed and maintained using best management practices in snow storage, salt storage and application and storm water management, to ensure these activities never become a significant drinking water threat. Further, the County shall provide appropriate Official Plan policies and study requirements for complete applications for new developments within the Chloride ICA. To ensure the establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage, the application, handling or storage of road salt, and the storage of snow never become a significant drinking water threat, a) the County of Wellington and Municipality shall generally require future development to be designed and maintained using best management practices addressing these activities, and b) the County shall provide appropriate Official Plan policies and study requirements for complete applications for new developments within the Chloride ICA, if the following applies: i. where the activity would be a significant drinking water threat, ii. in an area with any land use except residential consisting of four units or fewer, and iii. where the salt application area is equal to or greater than 200 square metres or 8 parking spaces
12. The Application of Road Salt **13. The Handling and Storage of Road Salt**	
WC-CW-12.02	To ensure the application, handling and storage of road salt never becomes or

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (CHL)	ceases to be a significant drinking water threat, where these activities are or would be significant drinking water threats, the municipality should review available training programs related to salt application and storage and ensure that adequate training opportunities are available to train municipal staff and private contractors on best management practices related to salt application and storage.
12. The Application of Road Salt	
WC-CW-12.1 *Existing/Future Specify Action ICA (CHL)*	Where a Chloride ICA has been delineated, or where salt application is or would be a significant drinking water threat, the municipality and / or County of Wellington shall review and, if necessary, revise or issue new Salt Management Plans for the application of salt on roadways in all Wellhead Protection Areas. The Salt Management Plan shall include, as a minimum, measures to ensure application rate, timing and location reduce the potential for salt-related surface water run-off and groundwater infiltration and meet the objectives of Environment Canada's Code of Practice for Environmental Management of Road Salts including the salt vulnerable area mapping to include areas where significant threats can occur. Where an RMP applies to municipal salt application, the Salt Management Plan shall be incorporated into the RMP.
WC-CW-12.2 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (CHL)*	To ensure any existing or new application of road salt ceases to be or never becomes a significant drinking water, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006*, and a Risk Management Plan shall be required where the following applies: a. the activity is or would be a significant drinking water threat; b. salt is or could be applied to the property; c. the salt application area is equal to or greater than 200 square metres or 8 parking spots; and d. the property is used for any land uses except residential consisting of four units or fewer. Notwithstanding the above, a Risk Management Plan will also be required for any municipal properties where the activity is or would be a significant drinking water threat.
WC-CW/NB-12.3 *Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; ICA (CHL)*	The County, municipalities and the Ministry of Transportation should enhance road design measures for modifying, widening or expanding existing roads and / or designing / developing new roads to minimize the impact from any application of salt on roadways related to the development of new roads in the following areas: a. aIn WHPA- A and WHPA-B where the vulnerability is equal to ten (10); or b. bWhere a Chloride Issue has been identified. The assessment should make recommendation for enhanced measures to protect drinking water sources to be carried through detailed design and construction of the road.

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WC-NB-12.4 *Existing/Future Specify Action. WHPA-A-v.10; WHPA-B-v.10; ICA (CHL)*	For existing or future transport pathways within a Chloride ICA, the Ministry of Environment, Conservation and Parks should prioritize inspections and abatement activities related to well maintenance and abandonment pursuant to Ontario Regulation 903, *Ontario Water Resources Act, 1990*.
WC-CW-12.5 *Existing/Future Specify Action. ICA (CHL)*	For existing or future transport pathways within a Chloride ICA, the municipality shall review whether the transport pathways increase infiltration of chloride to the groundwater and what actions can be taken by the municipality to reduce the infiltration of chloride. Actions may include, but are not limited to, incorporating terms and conditions into Risk Management Plans, maintenance or removal of transport pathways, direction to other parties regarding maintenance or removal of transport pathways, reduction of salt application within the area of the transport pathway, and advocate with Ministry of Environment, Conservation and Parks or Ministry of Transportation for actions to reduce the infiltration of chloride or other measures as required.
WC-NB-12.6 *Existing/Future Specify Action ICA (CHL)*	Where a Chloride ICA has been delineated or where road salt application is or would be a significant drinking water threat, the Ministry of Transportation should review and, if necessary, revise or issue new Salt Management Plans for the application of salt on roadways in all Wellhead Protection Areas. The Salt Management Plan should include, as a minimum, measures to ensure application rate, timing and location reduce the potential for salt-related surface water run-off and groundwater infiltration and meet the objectives of Environment Canada's Code of Practice for Environmental Management of Road Salts including the salt vulnerable area mapping to include areas where significant threats can occur.
WC-CW-12.7 *Existing/Future Education & Outreach ICA (CHL)*	To ensure any existing or new application of road salt ceases to be or never becomes a significant drinking water threat, where this activity is or would be a significant drinking water threat within a Chloride ICA, the municipality and / or the Public Health Unit shall develop and implement an education initiative addressing the application of road salt. The education program shall encourage the implementation of best management practices that form the core of the Smart About Salt or similar accreditation program to reduce the impact of winter de-icing activities.
13. The Handling and Storage of Road Salt	
WC-CW-13.1 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b) Future Part IV-RMP*	To ensure: a. any existing handling and storage of road salt outside of an ICA but within WHPA-A and WHPA-B with a vulnerability score of ten (10) or IPZ-1 with a vulnerability score of ten (10); or b. any new handling and storage of road salt within a WHPA-B with a vulnerability score equal to ten (10),

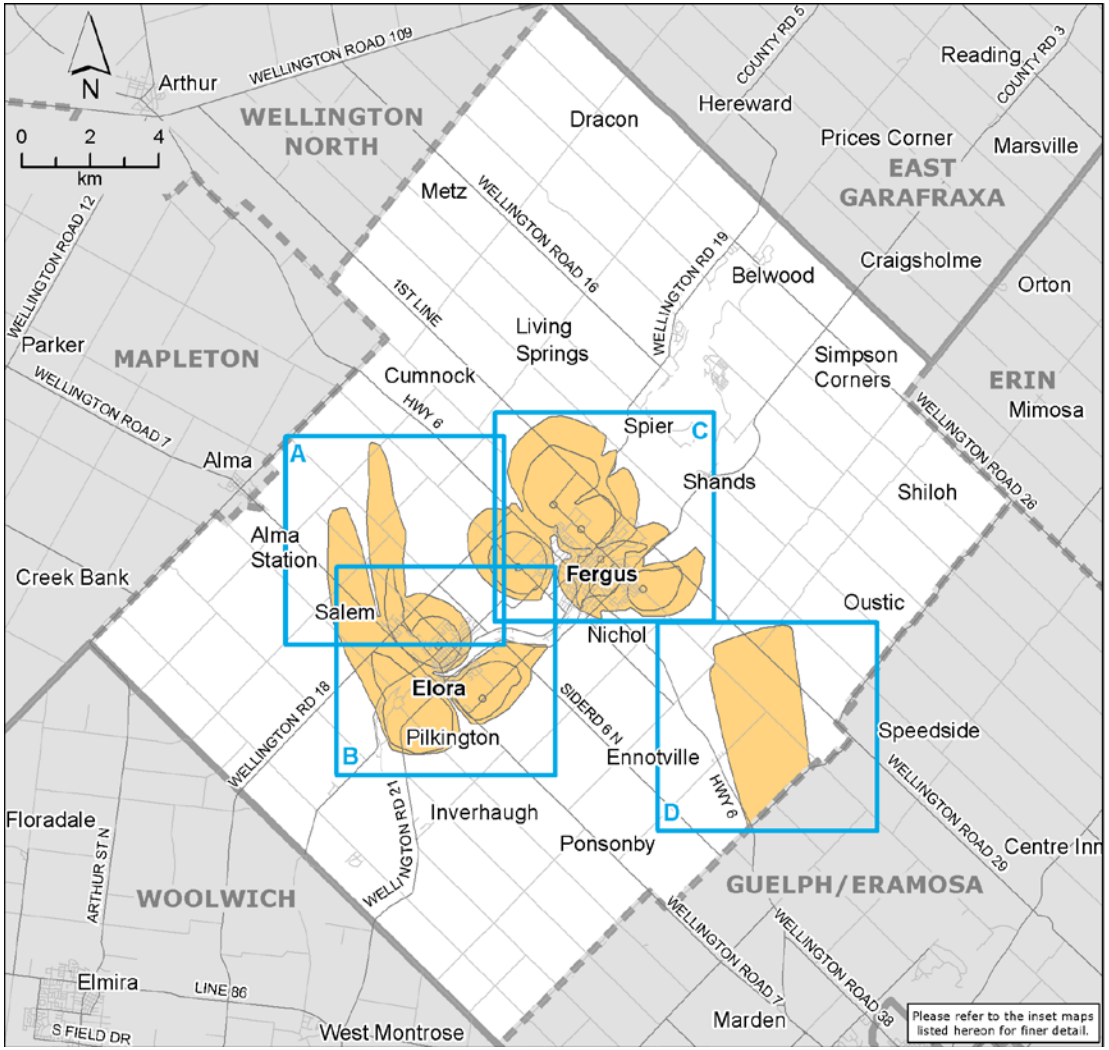
Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WHPA-B-v.10	ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-13.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new handling and storage of road salt within a WHPA-A or IPZ-1 outside of an ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-13.2.1 *Existing/Future Part IV-Prohibit WHPA-A-v.10 within ICA (CHL)*	To ensure, within a WHPA-A and within a Chloride ICA that: a. any existing or new handling and storage of road salt in any amount that is stored uncovered; or b. any new (future), handling and storage of road salt in covered storage in amounts greater than 100 kilograms, ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-13.2.2 *Existing/Future Part IV-RMP ICA (CHL) outside WHPA-A-v.10*	To ensure, within a Chloride ICA that: a) any existing or new (future) handling and storage of road salt, outside of a WHPA-A, in any amount that is stored uncovered; or b) any existing or new (future) handling and storage of road salt, outside of a WHPA-A, in covered storage in amounts greater than 100 kilograms; or c) any existing or new (future) handling and storage of road salt, for a property that requires a salt application Risk Management Plan, in uncovered or covered storage of any amount; or d) any existing or new (future) handling and storage of road salt at a municipal property, in uncovered or covered storage of any amount; ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-13.3 *Existing/Future Education & Outreach ICA (CHL)*	o ensure any existing or new handling and storage of road salt ceases to be or never becomes a significant drinking water threat, where this activity is a significant drinking water threat within a Chloride ICA, the municipality and / or the Public Health Unit shall develop and implement an education initiative about the handling and storage of road salt. The education program shall encourage the implementation of the best management practices that form the core of the Smart About Salt or similar accreditation program to reduce the impact of winter de-icing activities.
14. The Storage of Snow	
WC-CW-14.1	To ensure:

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10 outside of ICA (CHL) *Future Part IV-RMP WHPA-B-v.10 outside of ICA (CHL)*	a. any existing snow storage outside of a Chloride ICA but within WHPA-A and WHPA-B with a vulnerability score of ten (10) or IPZ-1 with a vulnerability score of ten (10); or b. any new snow storage outside of a Chloride ICA but within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-14.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10 outside of ICA (CHL)*	To ensure any new snow storage within a WHPA-A or IPZ-1 outside of a Chloride ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-14.3 *Existing/Future Education & Outreach WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT/CHL)*	To ensure existing or new snow storage within a WHPA-A or B with a vulnerability score equal to ten (10), IPZ-1 with a vulnerability score equal to ten (10), or Nitrate or Chloride ICA cease to be or never become a significant drinking water threat, the municipality shall develop and implement an education initiative about snow storage. The education program shall encourage the use of best management practices that reduce the impact on groundwater.
WC-CW-14.4 *Future Part IV-Prohibit WHPA-A-v.10 within ICA (CHL)*	To ensure any new, below grade snow storage greater than 0.01 hectare in area or at or above grade snow storage greater than 1 hectare in area within a WHPA-A in a Chloride ICA never becomes a significant drinking water threat this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-14.5 *Existing/Future Part IV-RMP ICA (CHL)*	To ensure any existing or new facility for snow storage within a Chloride ICA ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required where: a. a prohibition policy does not apply; b. salt is or could be applied to the property; c. the salt application area is equal to or greater than 200 square metres or 8 parking spots; and d. the property is used for any land uses except residential consisting of four units or fewer.
16. The Handling and Storage of a Dense Non-Aqueous Phase Liquid (DNAPL)	
WC-CW-16.1 *Existing Part IV-RMP WHPA-A/B/C;*	To ensure any existing handling and storage of a dense non-aqueous phase liquid greater than 25 Litres, for industrial, commercial, institutional or agricultural purposes ceases to be a significant drinking water threat, where this activity is a significant drinking water threat, this activity is designated for the purpose of Section

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
IPZ-1-v.10; ICA(TCE)	58 of the *Clean Water Act, 2006* and a Risk Management Plan is required.
WC-CW-16.3 *Future Part IV-RMP WHPA-B/C; ICA(TCE)*	To ensure any new handling and storage of a dense non-aqueous phase liquid greater than 25 Litres, for industrial, commercial, institutional or agricultural purposes within a WHPA-B, C or TCE ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
21. The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard	
WC-CW-19.2 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10 ICA (NIT)*	To ensure a farm animal yard or an outdoor confinement area as defined in O. Reg. 267/03, for existing or new livestock operations within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ-1 or a Nitrate ICA, cease to be or never become significant drinking water threats, where these activities are, or would be, significant drinking water threats, a. These activities shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required. b. The requirements of the Risk Management Plan will generally be based on the requirements of a nutrient management plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.

Appendix B:
Draft updated policy applicability maps for Wellington County

DRAFT UPDATED Schedule D: County of Wellington, Township of Centre Wellington, Index Map



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Index Map -
Wellhead Protection Zones

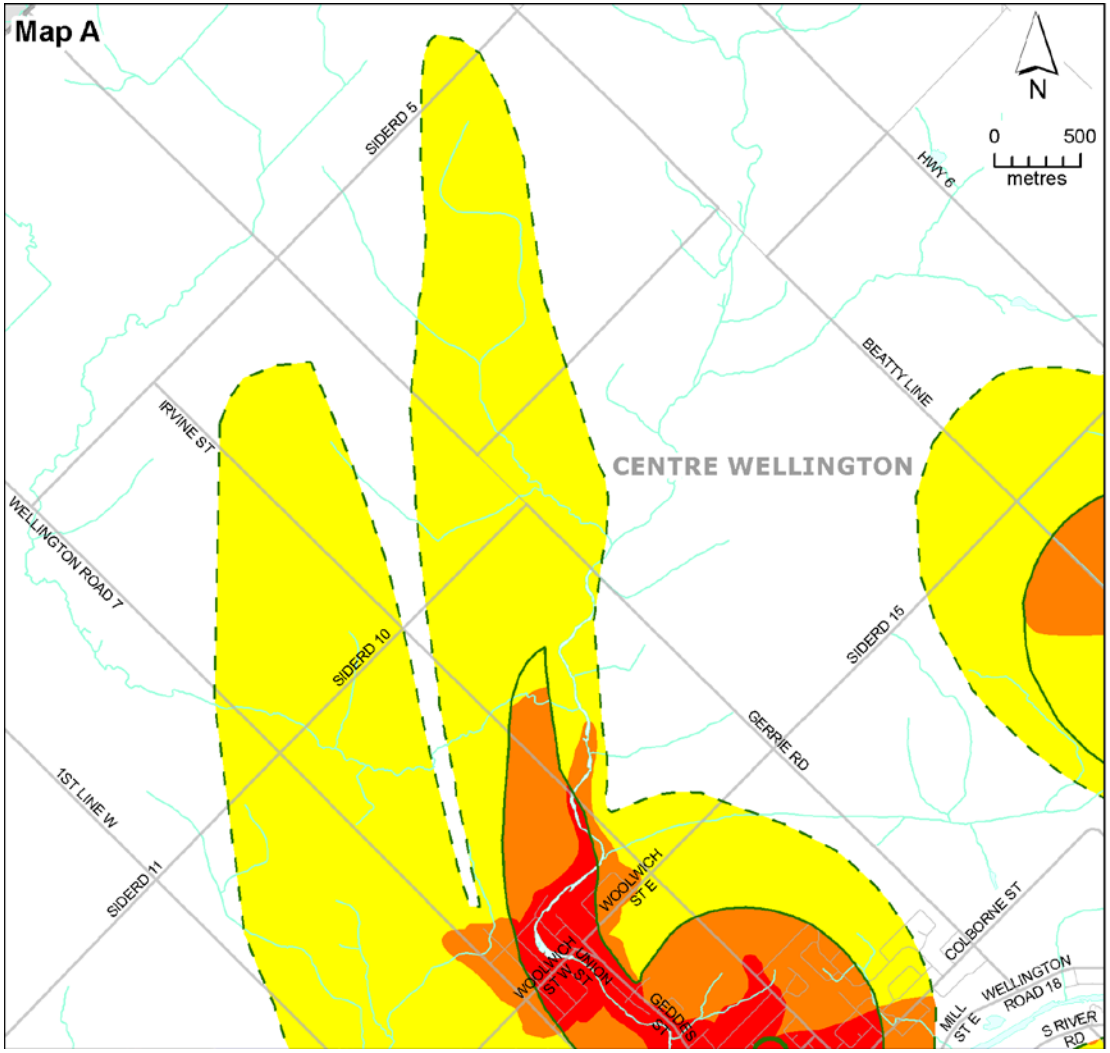
- Main Roads
- Upper / Single Tier Municipal Boundary
- Lower Tier Municipal Boundary
- Wellhead Protection Zones A, B, C

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

DRAFT UPDATED Schedule E: County of Wellington, Centre Wellington Well Supply, Map A



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

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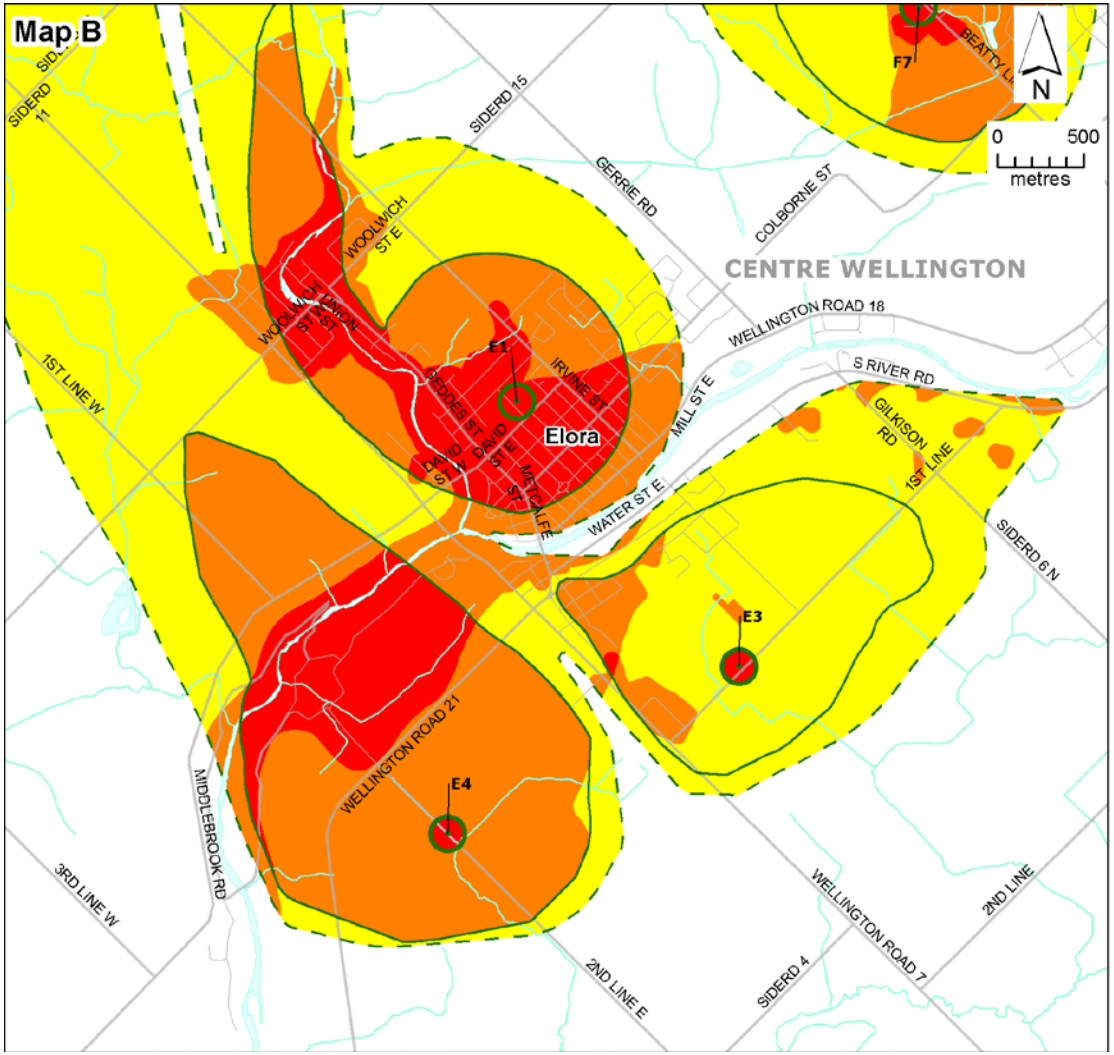
DRAFT UPDATED Schedule F: County of Wellington, Centre Wellington Well, Map B



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

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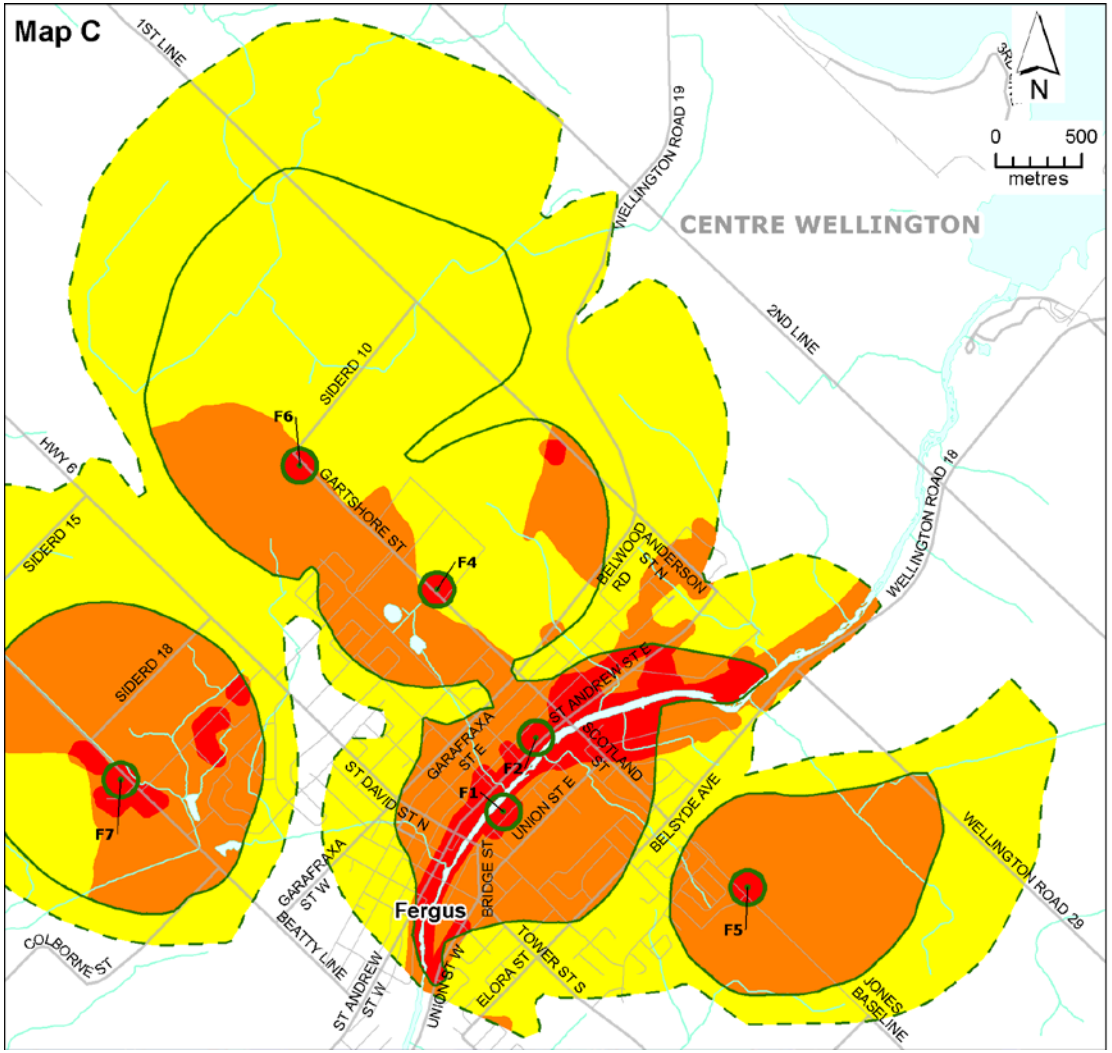
DRAFT UPDATED Schedule G: County of Wellington, Centre Wellington Well Supply, Map C



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

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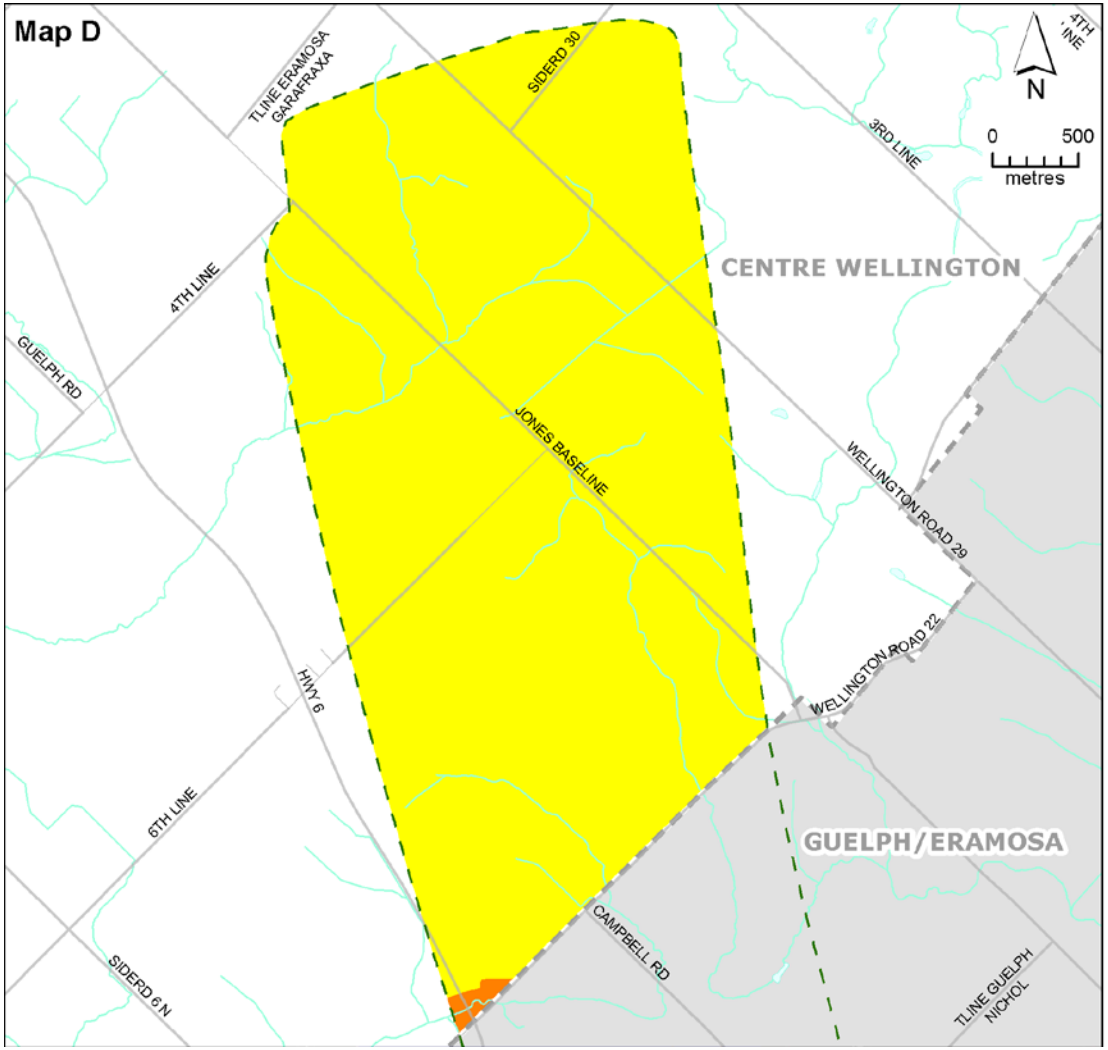
DRAFT UPDATED Schedule H: County of Wellington, Centre Wellington Well Supply, Map D



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 26, 2019
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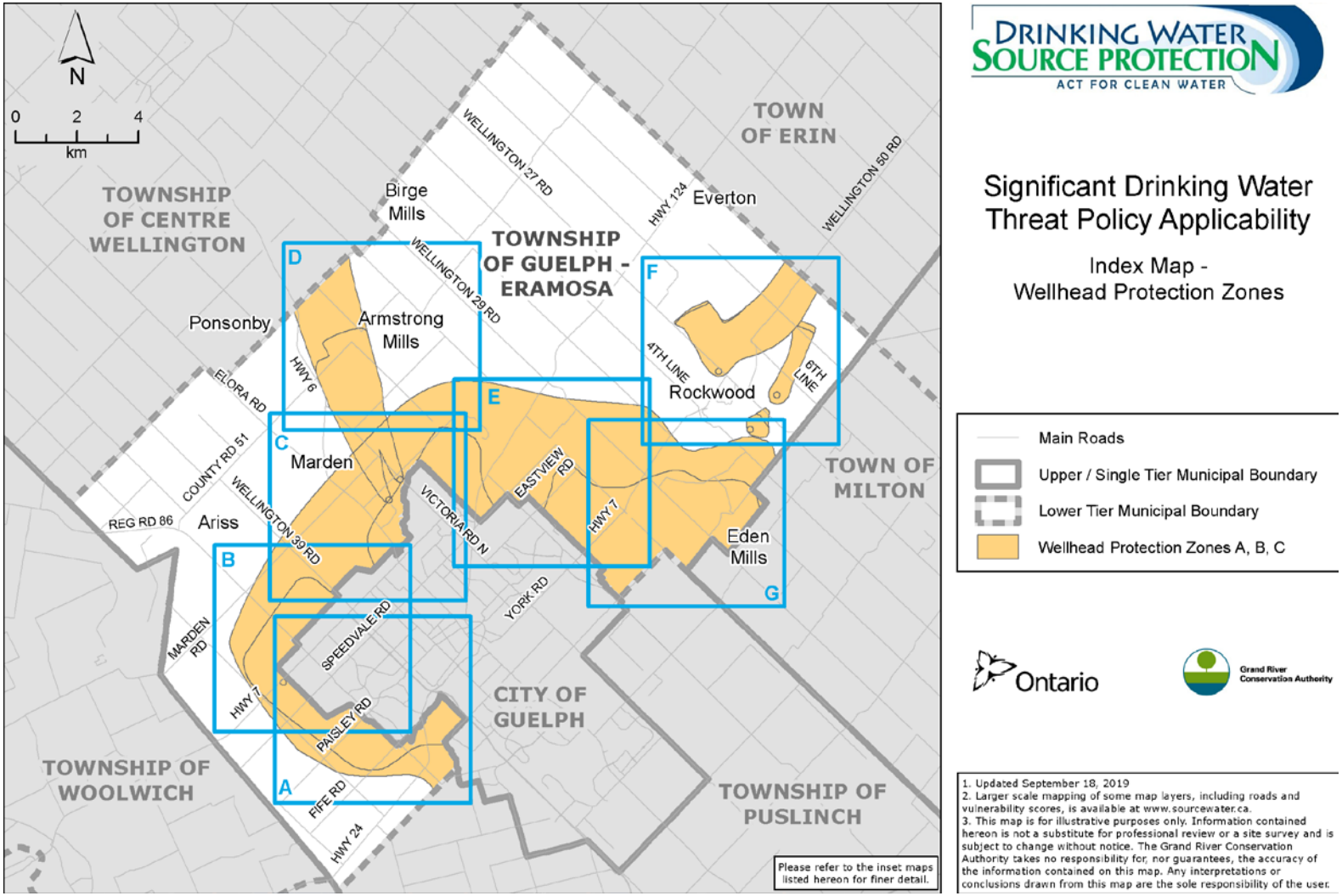
DRAFT UPDATED Schedule I: County of Wellington, Township of Guelph-Eramosa, Index Map



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Index Map -
Wellhead Protection Zones

- Main Roads
- Upper / Single Tier Municipal Boundary
- Lower Tier Municipal Boundary
- Wellhead Protection Zones A, B, C

Ontario

Grand River Conservation Authority

1. Updated September 18, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
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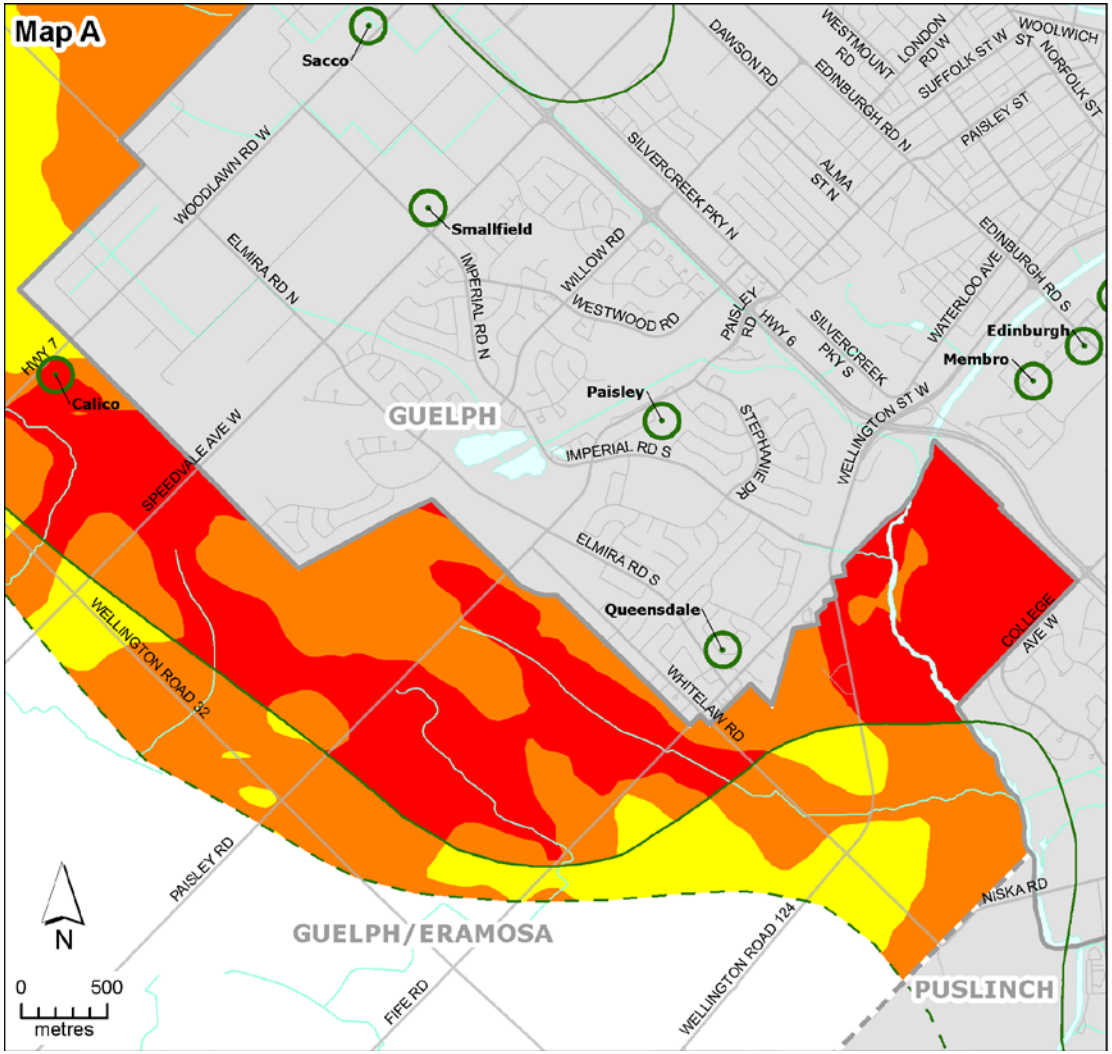
DRAFT UPDATED Schedule J: County of Wellington, Township of Guelph-Eramosa, Map A



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
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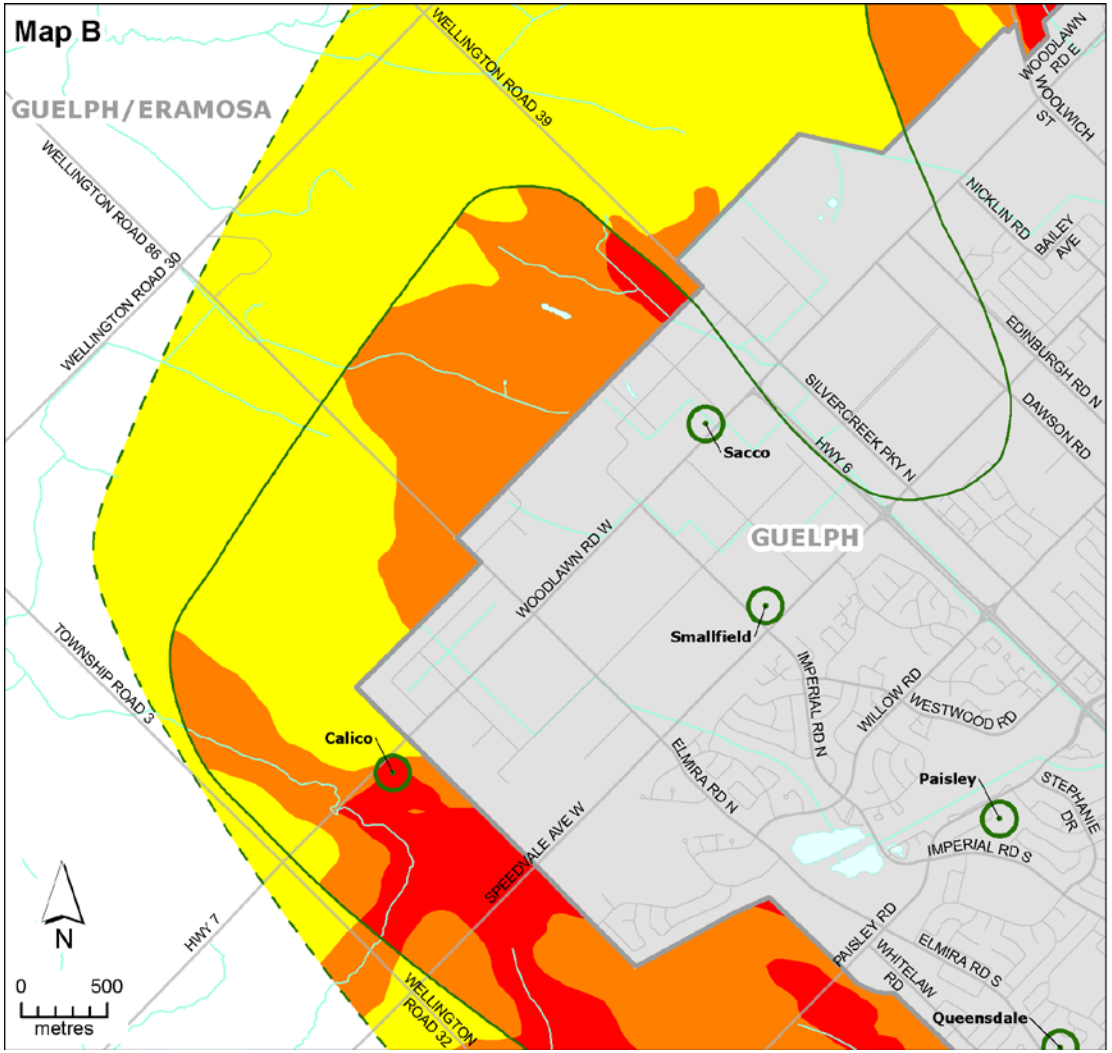
DRAFT UPDATED Schedule K: County of Wellington, Township of Guelph-Eramosa, Map B



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
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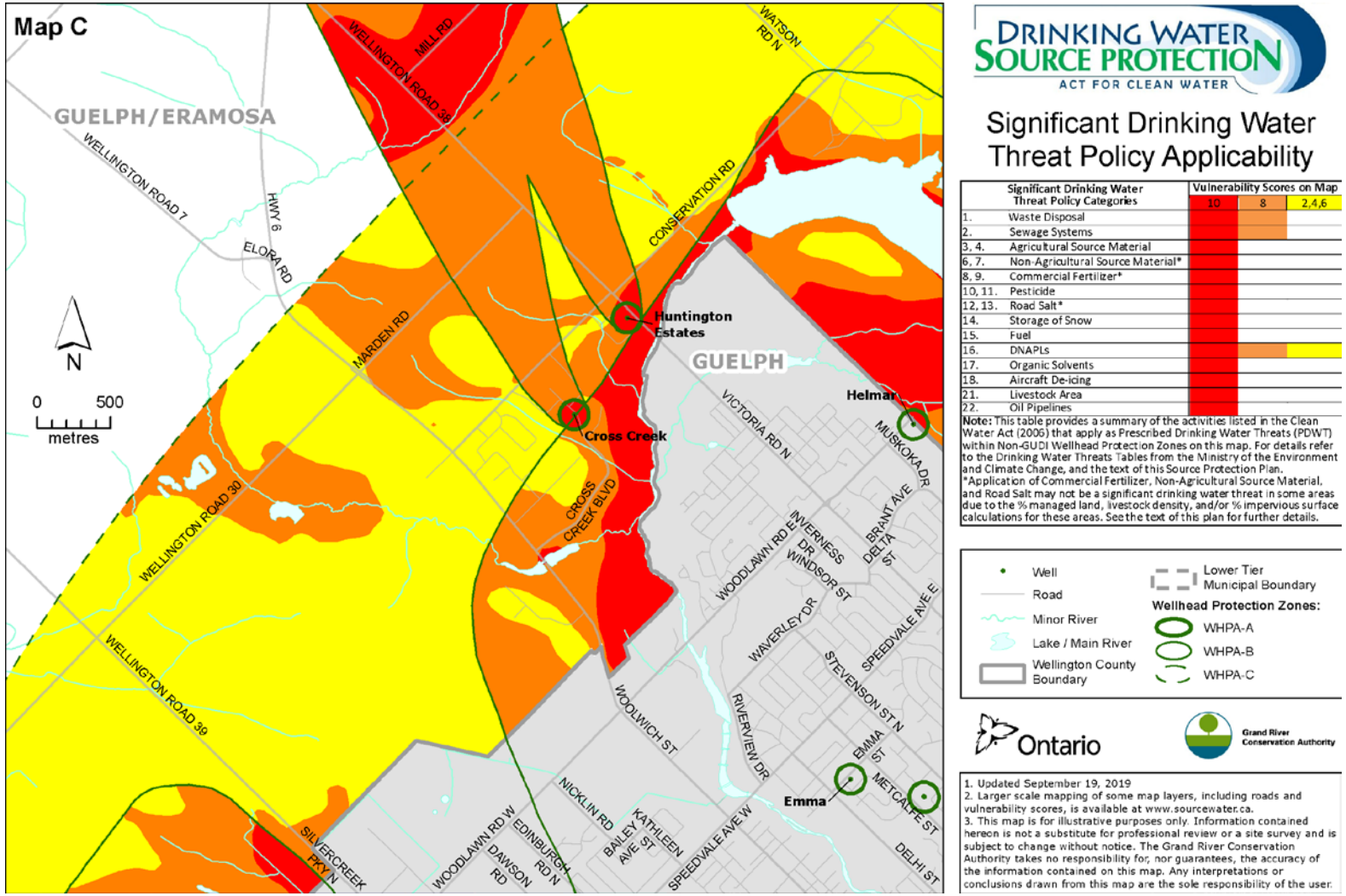
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

DRAFT UPDATED Schedule L: County of Wellington, Township of Guelph-Eramosa, Map C



	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
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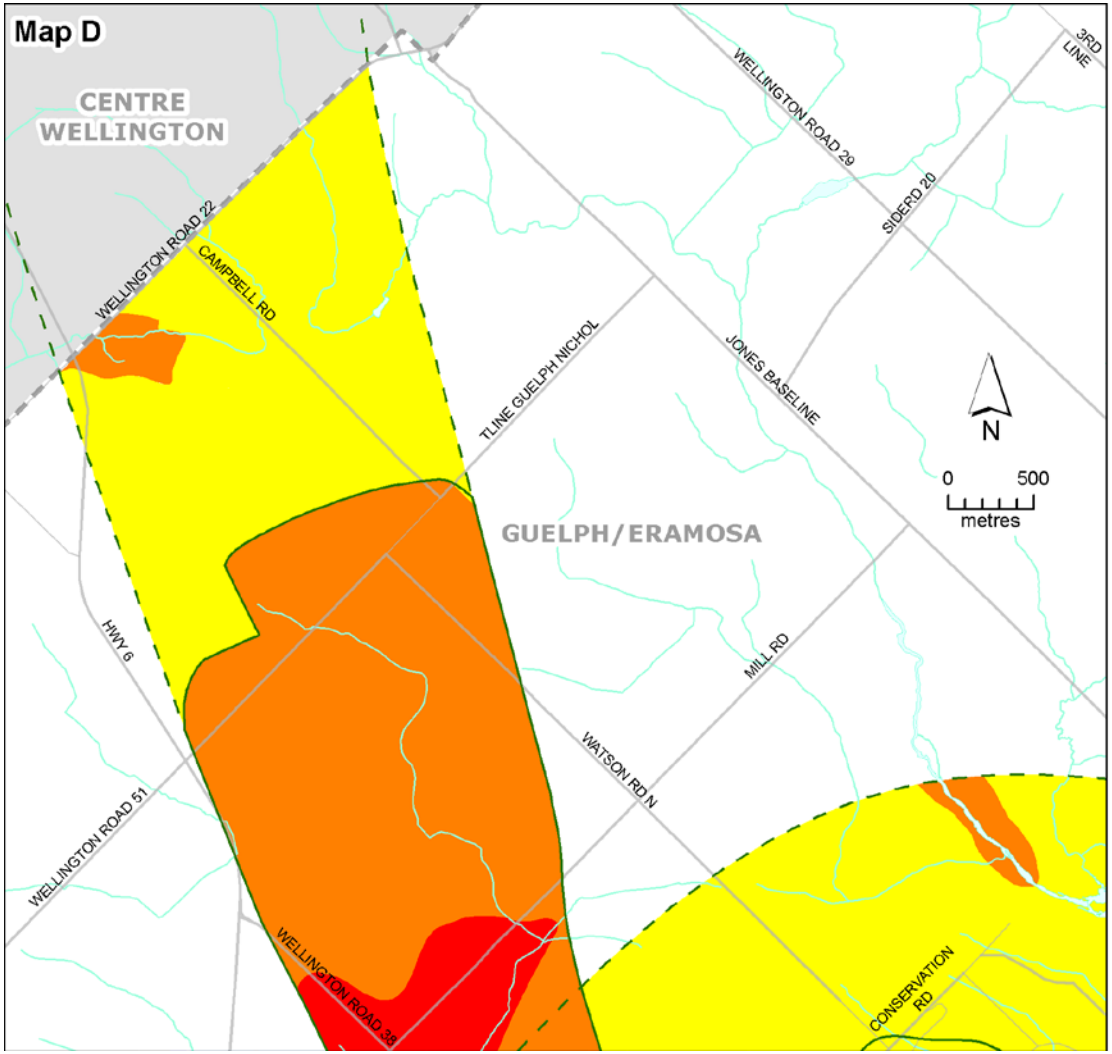
DRAFT UPDATED Schedule M: County of Wellington, Township of Guelph-Eramosa, Map D



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

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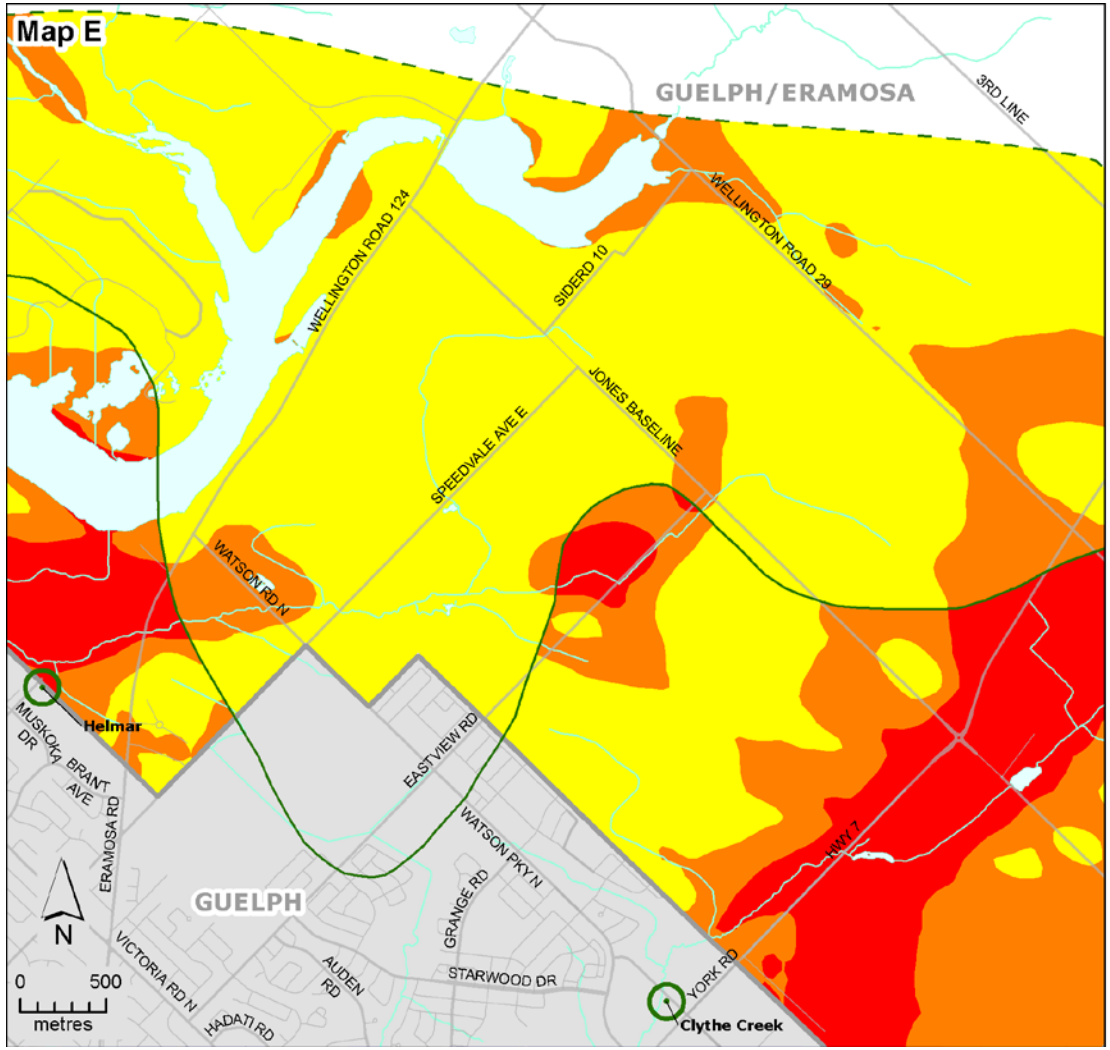
DRAFT UPDATED Schedule N: County of Wellington, Township of Guelph-Eramosa, Map E



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
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Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

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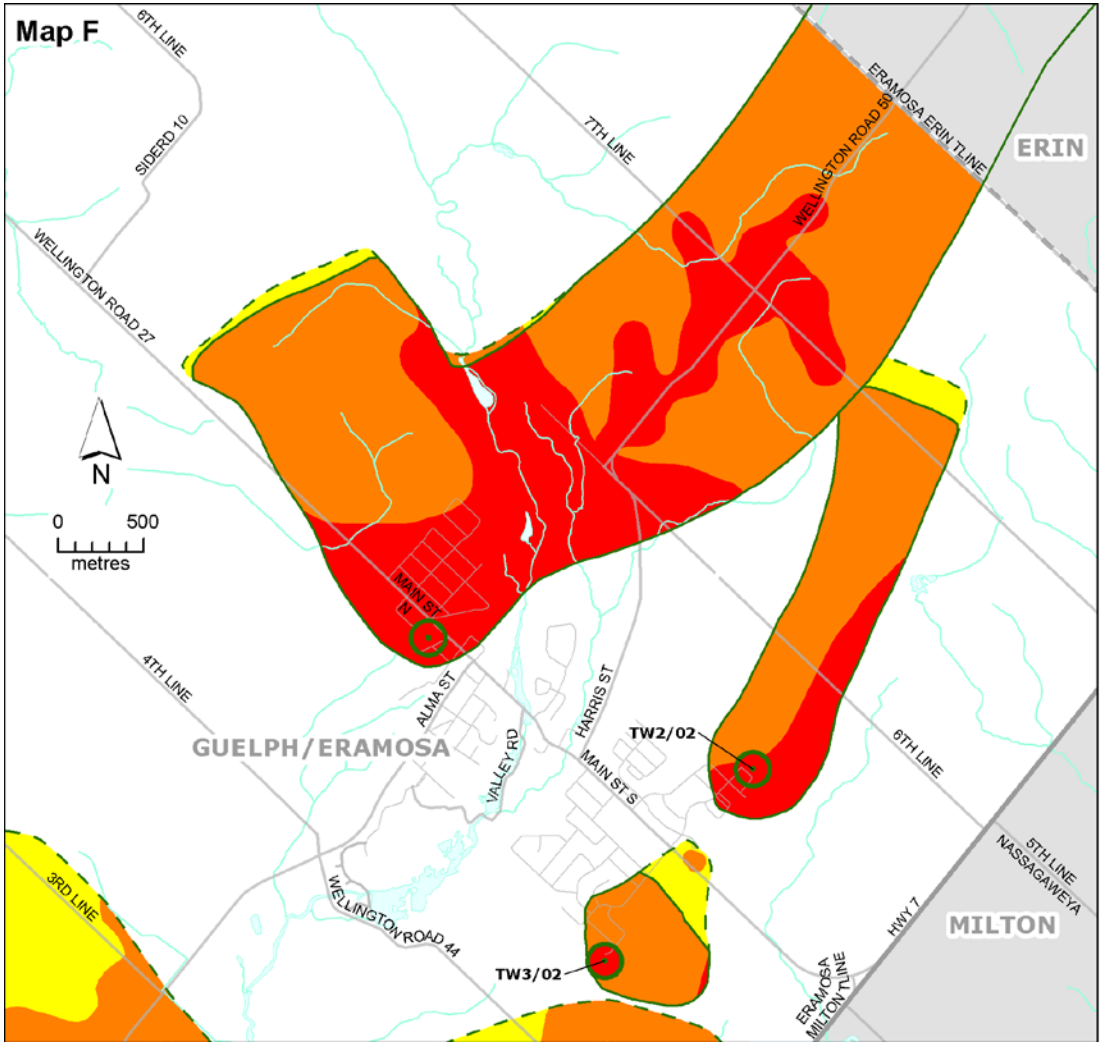
DRAFT UPDATED Schedule O: County of Wellington, Township of Guelph-Eramosa, Map F



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
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- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

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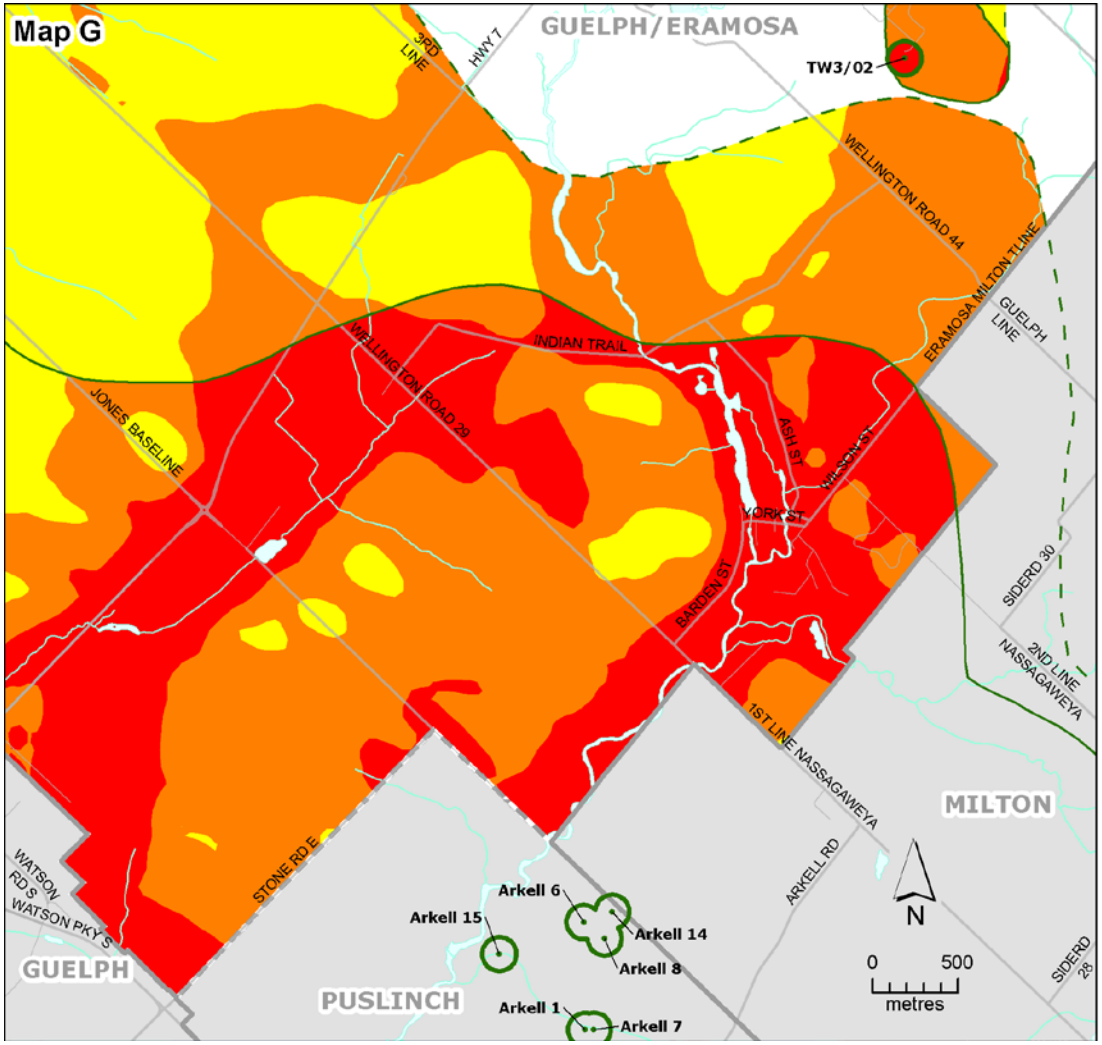
DRAFT UPDATED Schedule P: County of Wellington, Township of Guelph-Eramosa, Map G



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
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- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

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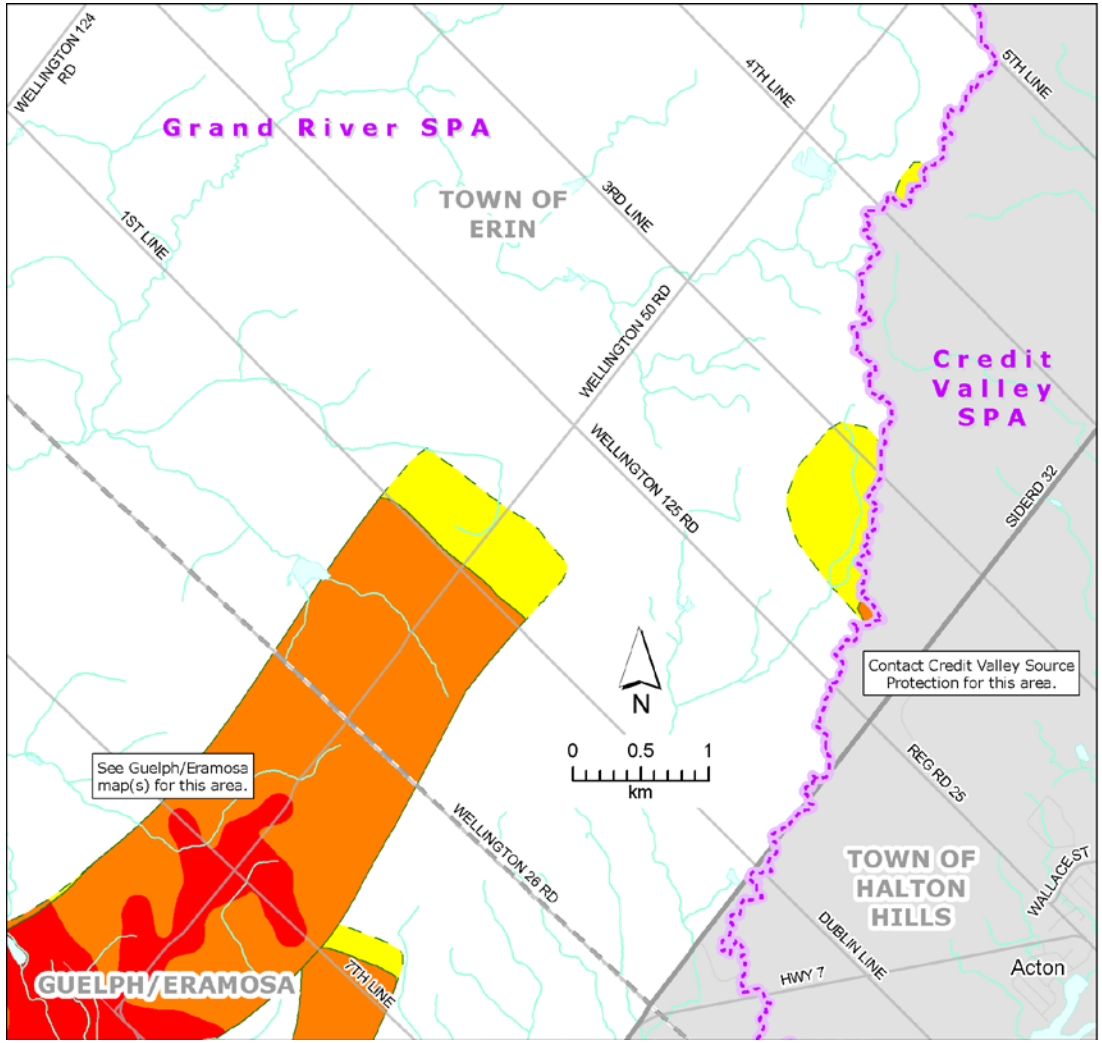
DRAFT UPDATED Schedule Q: County of Wellington, Town of Erin, Groundwater Vulnerability Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
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- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary
- Source Protection Area Boundary

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 26, 2019
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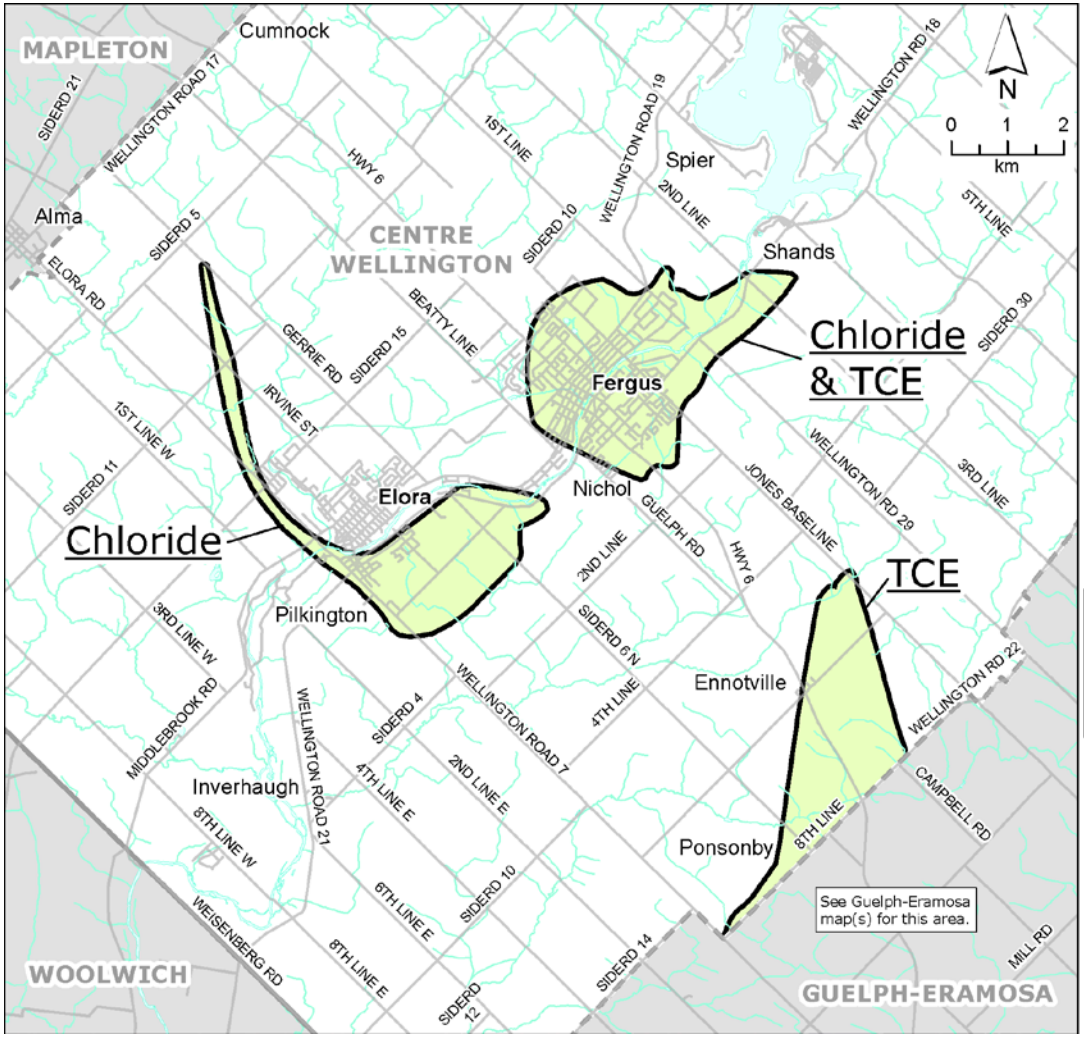
DRAFT UPDATED Schedule W: County of Wellington, Township of Centre Wellington, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		Y		Y
2.	Sewage Systems	Y	Y	Y	Y
3, 4.	Agricultural Source Material		Y		
6, 7.	Non-Agricultural Source Material		Y		
8, 9.	Commercial Fertilizer		Y		
12, 13.	Road Salt	Y		Y	
14.	Storage of Snow	Y	Y	Y	
16.	DNAPLs				Y
21.	Livestock Area		Y		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.

Roads
Minor Rivers
Lakes / Main Rivers
Wellington County Boundary
Lower Tier Boundary
Issue Contributing Area
Issue — Associated Issue Parameter

Ontario
Grand River Conservation Authority

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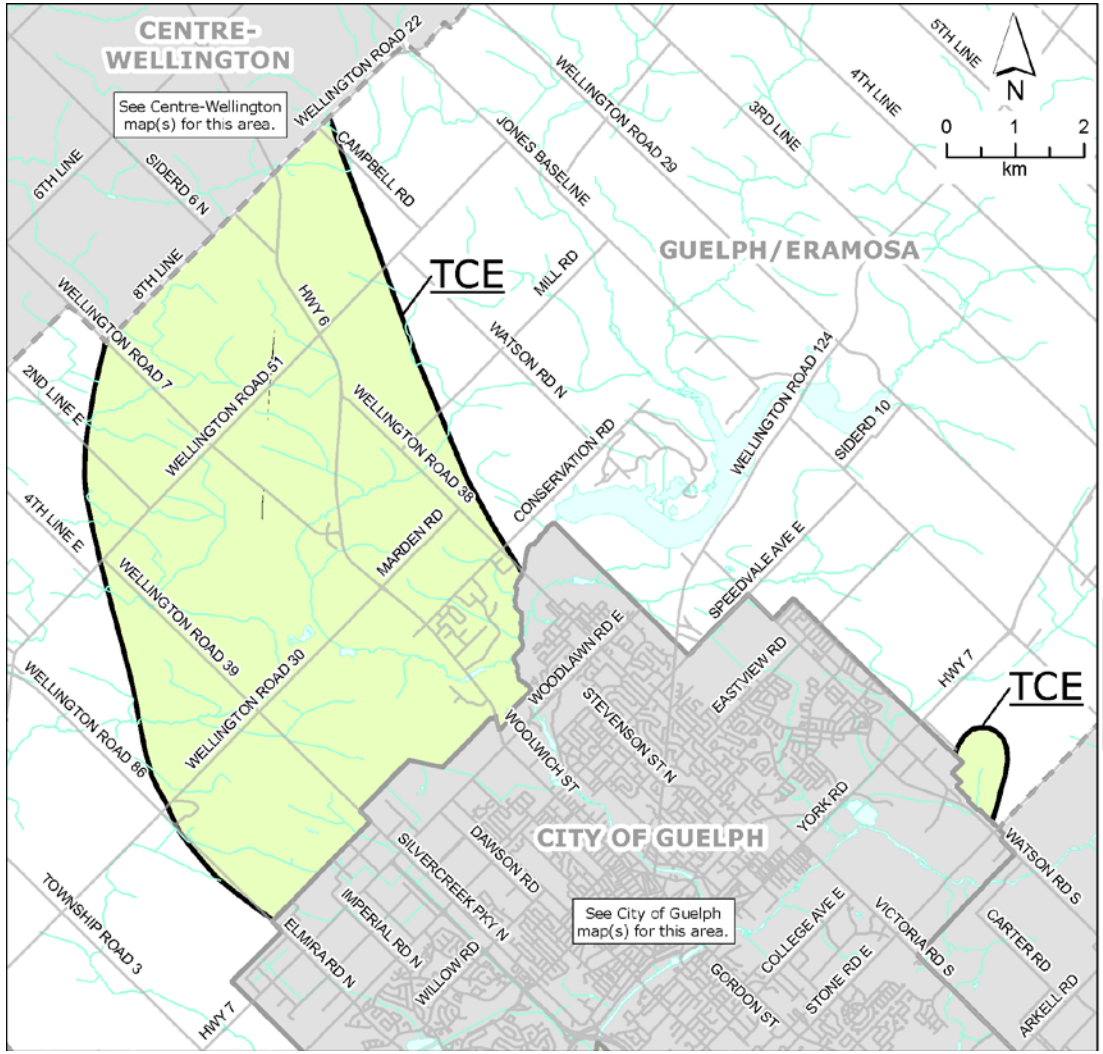
DRAFT UPDATED Schedule X: County of Wellington, Township of Guelph-Eramosa, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		Y		Y
2.	Sewage Systems	Y	Y	Y	Y
3, 4.	Agricultural Source Material		Y		
6, 7.	Non-Agricultural Source Material		Y		
8, 9.	Commercial Fertilizer		Y		
12, 13.	Road Salt	Y		Y	
14.	Storage of Snow	Y	Y	Y	
16.	DNAPLs				Y
21.	Livestock Area		Y		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.

- Roads
- Minor Rivers
- Lakes / Main Rivers
- Wellington County Boundary
- Lower Tier Boundary
- Issue Contributing Area
- Issue — Associated Issue Parameter

Ontario

Grand River Conservation Authority

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6.0 WELLINGTON COUNTY

6.1 Township of Wellington North

6.1.1 Arthur Well Supply

The Township of Wellington North has two municipal water supply systems, one servicing the Town of Mount Forest and a second servicing the Town of Arthur. Within the Township of Wellington North, Arthur is the only community located within the Grand River watershed that is serviced by a municipal groundwater system. The serviced area is shown on **Map 6-1.**

The Arthur Well Supply system consists of 3 wells, 2 pump houses, 2 elevated water tanks and a distribution system. The municipal system supplies water to approximately 2,770 people within the community (Conestoga Rovers & Associates, 2009).

The Town of Arthur is currently serviced by three municipal production wells: 7B, 8A, and 8B. All three of the wells are completed in the deep overburden aquifer at approximately 46 m below ground surface. The upper surficial quaternary geology has been mapped as a clayey silt to silt till (Tavistock Till) which covers a large part of the area surrounding Arthur.

Well 7B is located to the west of Arthur along Highway 109 and Wells. 8A and 8B are located south of the Town of Arthur in a rural setting as presented on **Map 6-2**. The following tables, **Table 6-1** and **Table 6-2** provide a summary of the municipal drinking water system and average pumping rates.

Table 6-1: Municipal Residential Drinking Water System Information for the Township of Wellington North in the Grand River Source Protection Area (Arthur Well Supply)

DWS Number	DWS Name	Operating Authority	GW or SW	System Classification[1]	Number of Users served[2]
220000040	Arthur Well Supply	Township of Wellington North	GW	Large Municipal Residential System	2,770

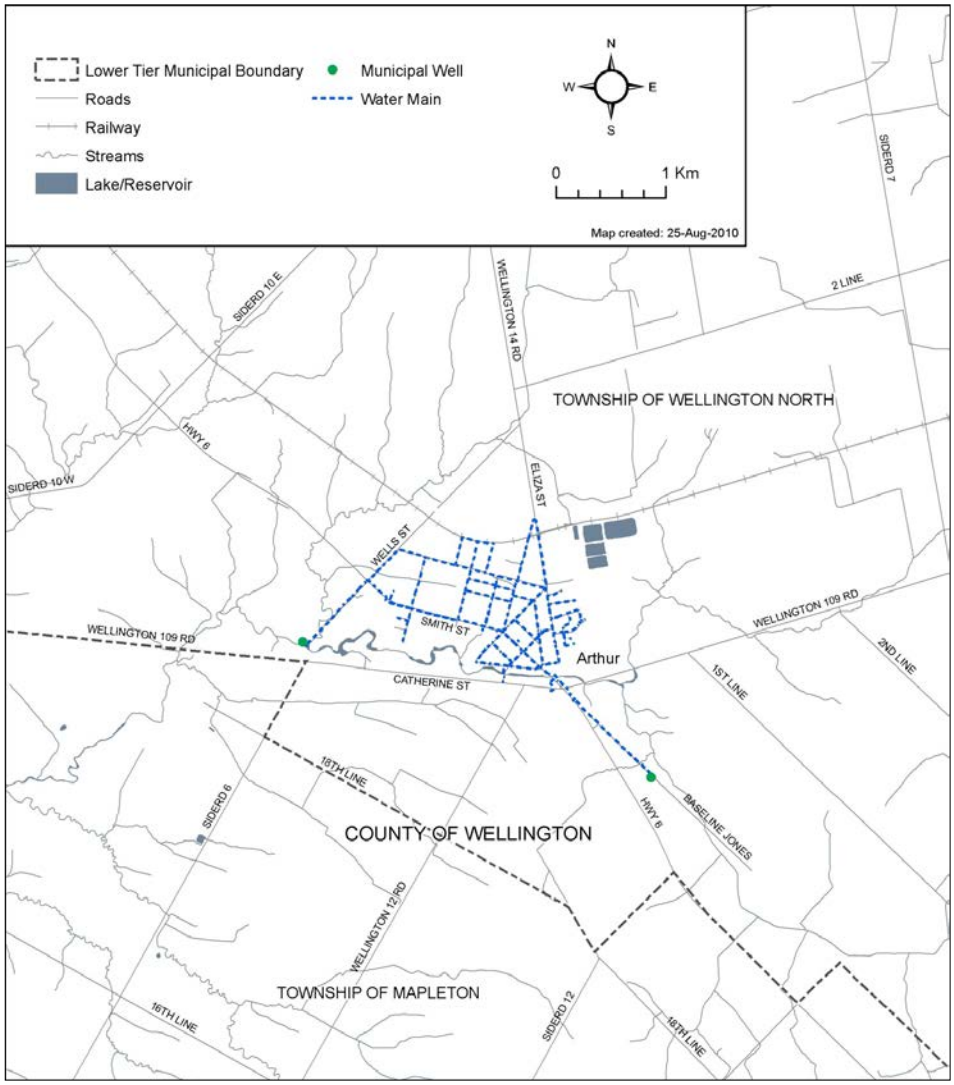
[1] as defined by O. Reg. 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002.*
[2] Drinking Water System Regulation 170/03, 2009b

Table 6-2: Annual and Monthly Average Pumping Rates for the Arthur Well Supply

Well or Intake	Annual Avg. Taking[1] (m^3/d)	Monthly Average Taking[1] (m^3/d)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Well 7B	120.9	185.92	66.6	266.87	220.69	132.23	84.82	96.95	136.18	64.97	10.46	100.2	85.19
Well 8A	639.0	713.6	701.15	528.86	496.94	782.69	689.01	645.88	433.64	655.37	820.05	824.52	375.78
Well 8B	145.1	1.97	20.47	42.48	148.93	3.06	162.12	197.13	537.56	214.15	2.52	2.33	408.79

[1] source: Township of Wellington North 2009 annual summary report

Map 6-1: Arthur Well Supply Serviced Areas



6.1.2 Vulnerability Analysis

Delineation of Wellhead Protection Areas

Wellhead Protection Areas (WHPAs) associated with the municipal water supply represents the areas within the aquifer that contribute groundwater to the well over a specific time period. Four Wellhead Protection Areas are specified, one a proximity zone and the others time-related capture zones:

- WHPA-A 100m radius from wellhead
- WHPA-B 2-year Time-of-Travel (TOT) capture zone
- WHPA-C 5-year time of travel capture zone
- WHPA-D 25-year time of travel capture zone.

Wellhead protection zones WHPA-E and WHPA-F are not included as part of this study because the water supply wells are not considered under the direct influence of surface water (GUDI).

Arthur Wellhead Protection Areas

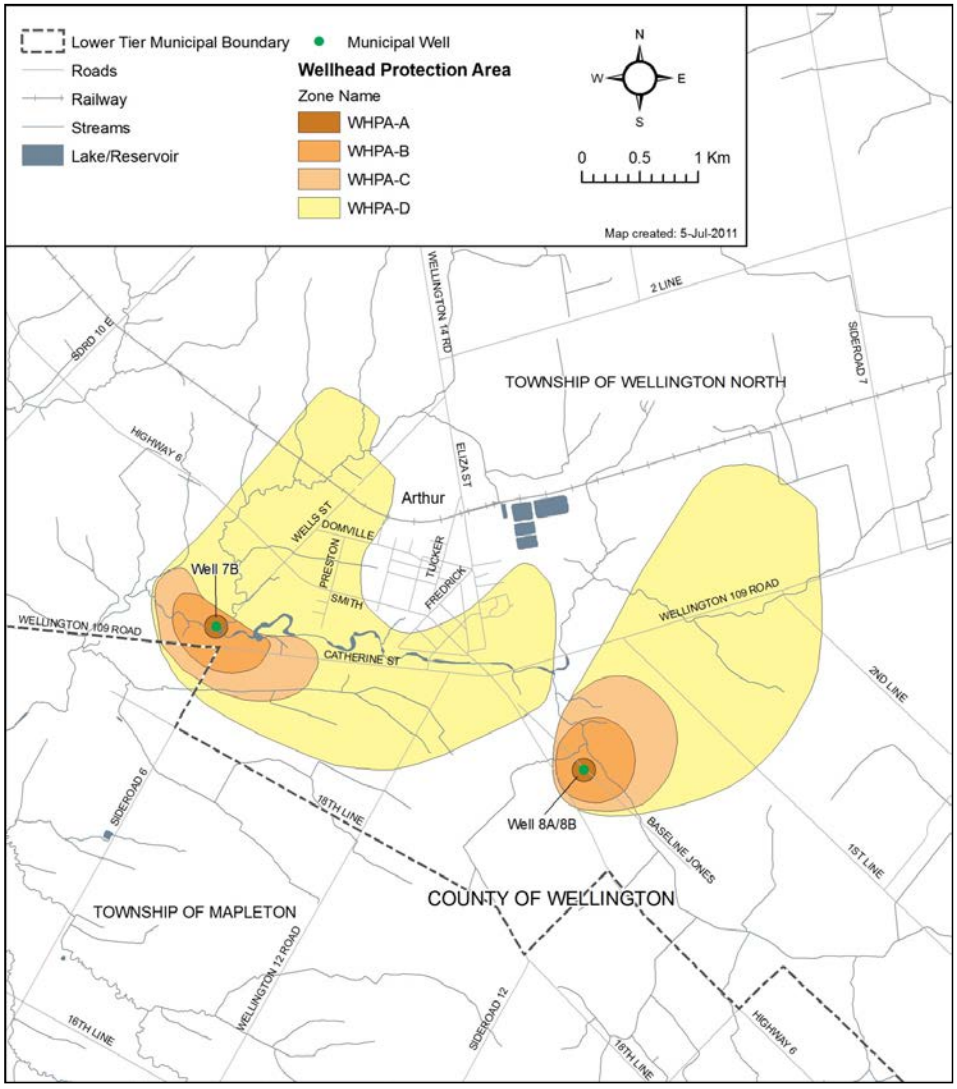
Existing Wellhead Protection Areas for the Township of Wellington North were developed by Golder Associates in 2005. Flow data for the Arthur system was reviewed, and updated flow projections were provided to Golder to develop the updated Wellhead Protection Areas. The models were also updated to reflect the new well system configuration for each of the systems. Wellhead Protection Areas for the Arthur Well Supply are presented on **Map 6-2**.

There are two distinct Wellhead Protection Areas for the Arthur 7B and Arthur 8A/B wells. The 25-year capture zone for Well 7B extends northeast encircling the urban footprint of Arthur, which is serviced by municipal sanitary sewers. The 25-year time of travel capture zone (Zone D) for Well 7B wellhead protection area has a total land area of approximately 6.16 km^2. The land with the 25-year time of travel capture zone encompasses a portion of the urban area and extends into rural areas to the northeast and southeast and consists of residential, commercial, cemetery, industrial, forested, and agricultural lands.

The 25-year capture zone for Arthur Wells 8A/B also extends northeast approximately 3.1 km outside the city to the east. The Conestoga River and its tributaries transect both Wellhead Protection Areas, and are within approximately 50 m from Well 7B and 200 m from Wells 8A/B. Land use overlying the Wellhead Protection Areas is primarily rural agricultural, although Zone D of Well 7B Wellhead Protection Area encroaches into the urban area. A few private septic systems and storm water infiltration features were identified within the 2-year capture zones (Zone B), and several water wells are mapped throughout the Wellhead Protection Area extents. Two historic waste disposal sites were also identified in Zone D of the Well 7B Wellhead Protection Area. ~~Vulnerability scores were adjusted accordingly to account for these transport pathways as discussed later in this section.~~

Projected pumping rates for Arthur Wells 8a/8b is approximately 350 m^3/day greater than for Arthur Well 7b. However, due to the nature of the flow paths, the 25-year time of travel capture zone (Zone D) for Wells 8a/8b has a total land area of approximately 4.74 km^2, which is slightly less than the Well 7b Wellhead Protection Area.

Map 6-2: Arthur Well Supply Wellhead Protection Areas



~~***Vulnerability Scoring in Wellhead Protection Areas***~~

~~The objective of the groundwater vulnerability analysis is to assess the vulnerability of the municipal wells from surface and near surface sources of contamination and provide quantification of the relative vulnerability of the source water aquifer within each Wellhead Protection Area through a vulnerability scoring process, in accordance with the Assessment Report Regulation and Technical Rules.~~

~~The groundwater vulnerability scoring process involves four main steps:~~

1. ~~Mapping wellhead protection areas based on defined fixed-radius and time-of-travel (TOT) capture zones.~~
2. ~~Categorization of areas of intrinsic groundwater vulnerability as high, medium, or low according to the natural susceptibility of the source water aquifer to becoming contaminated.~~
3. ~~Adjustments to the intrinsic vulnerability of the aquifer based on the presence of constructed transport pathways, where warranted.~~
4. ~~Subdivide wellhead protection areas by the boundaries of the adjusted intrinsic vulnerability and assign groundwater vulnerability scores based upon the relative location within the Wellhead Protection Area.~~

~~Wellhead protection zones WHPA-E and WHPA-F are not included as part of this study because the water supply wells are not considered under the direct influence of surface water (GUDI).~~

Modelling Approach for the Arthur Well Supply

For all municipal wells included in the study, computer based three-dimensional groundwater flow models were used to delineate the extent of each protection zone determined by time-of-travel to the wellhead. This involved the refinement of time of travel analysis conducted as part of the 2001 MOE Groundwater Studies Initiative (Conestoga Rovers and Associates, 2007 and 2009).

While numerical models account for the three-dimensional flow through the groundwater system, the time of travel analyses were used to define the zones within the wellhead protections areas. With the exception of WHPA-A, which is based solely on proximity to the well or well field, the shape of the time of travel capture zones are determined primarily by the regional groundwater flow pattern, variations in aquifer properties, proximity to surface water features in contact with the aquifer system, and mutual interference between wells.

Time of travel capture zones were refined under this study using surveyed well locations, updated operational schedules (current as 2009), and updated forecasted pumping rates that account for future growth within each Wellhead Protection Area. Forecasted 2021 water demand was estimated based on the average 5-year pumping rate (2001 through 2006) and annual population growth rates reported in official plan documents, or as provided by municipal representatives.

Aquifer Vulnerability Index (AVI) assessed under the MOE Provincial Groundwater Studies Program initiated in 2001 was used in this study to categorize areas of intrinsic groundwater vulnerability as high, medium, or low within each Wellhead Protection Area. The AVI method provides a basic approach for decision-making, which considers the hydraulic conductivity of the pathway for water infiltrating from the ground surface and, in considering the uppermost significant aquifer, has respect for the shallow groundwater. Each category inversely reflects the relative

amount of protection provided by the physical features that overlie the aquifer closest to the ground surface (e.g., overlying strata, their hydraulic conductivities and thicknesses).

The AVI maps generated under the provincial program are regionally-derived products based largely on water well records, local geology and other hydrogeological data.

Vulnerability Scoring for the Arthur Wellhead Protection Areas

The Aquifer Vulnerability Index (AVI) mapping was developed for bedrock and deep overburden aquifers in the Municipality of Wellington North by Golder in 2006. Detailed methods for vulnerability scoring is outlined in Chapter 3.

Each Wellhead Protection Area was subdivided by the boundaries of the adjusted groundwater vulnerability index mapping. Based on the intersection, vulnerability scores ranging from 2 (low vulnerability) to 10 (high vulnerability) were generated across each Wellhead Protection Area, providing a relative indication of the intrinsic susceptibility of the underlying aquifer to contamination from drinking water quality threats. ~~The following vulnerability scores are presented below in **Table 7-3.**~~ The ~~unadjusted~~ intrinsic vulnerability is shown on **Map 6-3.**

~~**Table 7-3: Wellhead Protection Area Vulnerability Scores – ISI/AVI**~~

~~WHPA Protection Zone~~	~~Broader Landscape Intrinsic Groundwater Vulnerability~~		
	~~High~~	~~Medium~~	~~Low~~
~~WHPA-A: 100 m radius~~	~~10~~	~~10~~	~~10~~
~~WHPA-B: 2-year TOT~~	~~10~~	~~8~~	~~6~~
~~WHPA-C: 5-year TOT~~	~~8~~	~~6~~	~~4~~
~~WHPA-D: 25-year TOT~~	~~6~~	~~4~~	~~2~~

~~Typically, vulnerability scores are higher closer to the well. WHPA-A is mapped as one continuous sensitivity area, and applies to all potential contaminants. Within this zone there is no consideration given to the results from the vulnerability assessment – the intrinsic vulnerability score is solely based on proximity to the supply well or well field.~~

~~The initial vulnerability scoring for Arthur is included on **Map 7-4.**~~

Identification of Transport Pathways and Vulnerability Adjustment

Transport pathways are features that may increase the aquifer's vulnerability. Natural pathways, such as fracturing and karsts features, were considered in the regional ISI/AVI index mapping.

The existing potential threat source databases developed by WHI (2003) and Golder (2005) under previous provincial studies along with land use inventories completed under this study were used as a starting point to identify transport pathways within each Wellhead Protection Area. Available water well record databases, provincial and municipal mapping, aerial photography, and other source mapping data were also reviewed to determine the location of these features. Some additional databases used to identify transport pathways include the Ontario Drinking Water Information System (DWIS) database, oil and gas well inventories, Provincial Groundwater Monitoring Network (PGMN) database, the MNR NRVIS and Ontario Geologic Survey (OGS) pits and quarries inventories, and the MOE Sewage Treatment Plant (STP) inventory. Sewer and water-serviced subdivision and settled areas were determined through searches of government databases and cooperation with municipal representatives. Developed properties without sewer or water service were typically assumed to have septic systems.

Transport Pathways in the Arthur Wellhead Protection Areas

The following is a summary of the identified transport pathways:

- Municipal sewer infrastructure and septic systems;
- Well clusters and excavations (including construction and aggregate pits); and
- A large industrial property is located on the southern section of town where there are many excavations and what appear to be several dug settling ponds exist.

The transport pathways for the Arthur Wellhead Protection Areas are shown on **Map 6-4.**

~~***Adjustments to Vulnerability to Account for Transport Pathways***~~

~~The bypassing of the natural protection of an aquifer due to the presence of one or more transport pathways will essentially increase the relative vulnerability of the aquifer (i.e., from low to medium or high, or medium to high). Where an aquifer is already determined to be of high intrinsic vulnerability, no further increase is possible. It should be recognized that these adjustments only relate to the physical characteristics of the pathway from potential sources of contamination to the aquifer(s). In other words, they are applied independent of any consideration for specific chemicals of concern.~~

Adjusted Vulnerability Scoring for the Arthur Wellhead Protection Areas

Four factors were considered prior to adjusting the vulnerability of an area: (1) hydrogeological conditions, (2) the type and design of a pathway, (3) cumulative impact (density) of pathways, and (4) the extent of any assumptions used in the assessment.

Hydrogeologic conditions defining the intrinsic vulnerability of the aquifer, including type of aquifer, type and thickness of overburden materials, and groundwater flow conditions were considered within each WHPA and relevance of the existing ISI/AVI index mapping. These conditions were considered in conjunction with the type and design of the pathway, where known. The cumulative impact of multiple transport pathways (density and type of pathways) within a grid cell was also considered for vulnerability score adjustment. The spatial distribution of the constructed pathways provides a general indication of the aerial extent across which the vulnerability modifier should be applied, while the density of the constructed pathways provides a general indication of the likelihood of a constructed pathway providing a connection between a surface (or near surface) source of contamination and the aquifer of interest. It was assumed that a greater density of transport pathways (e.g., a cluster of private wells) represents a greater probability of contaminants being transported from the ground surface into the aquifer. As such, where multiple pathways were identified, or where multiple pathways were assumed, groundwater vulnerability was adjusted accordingly to reflect greater vulnerability.

In addition to the spatial distribution and density of the pathways in each WHPA, the physical characteristics of the pathway was considered, where known or assumed, to determine if the constructed pathway extends to the water table or breaches protective layers (e.g., low permeability soils or bedrock strata) above the aquifer(s) of interest. Where a constructed pathway is not deep enough to penetrate the natural protective layers above the aquifer, an adjustment to the original score may not be necessary. Conversely, where the constructed pathway completely penetrates the overlying layers (e.g., an improperly abandoned or poorly constructed well) then an adjustment (increase) in the intrinsic vulnerability may be warranted on a local basis. To be conservative, it was assumed all identified pathways had the potential to breach the natural protective layers above the aquifer.

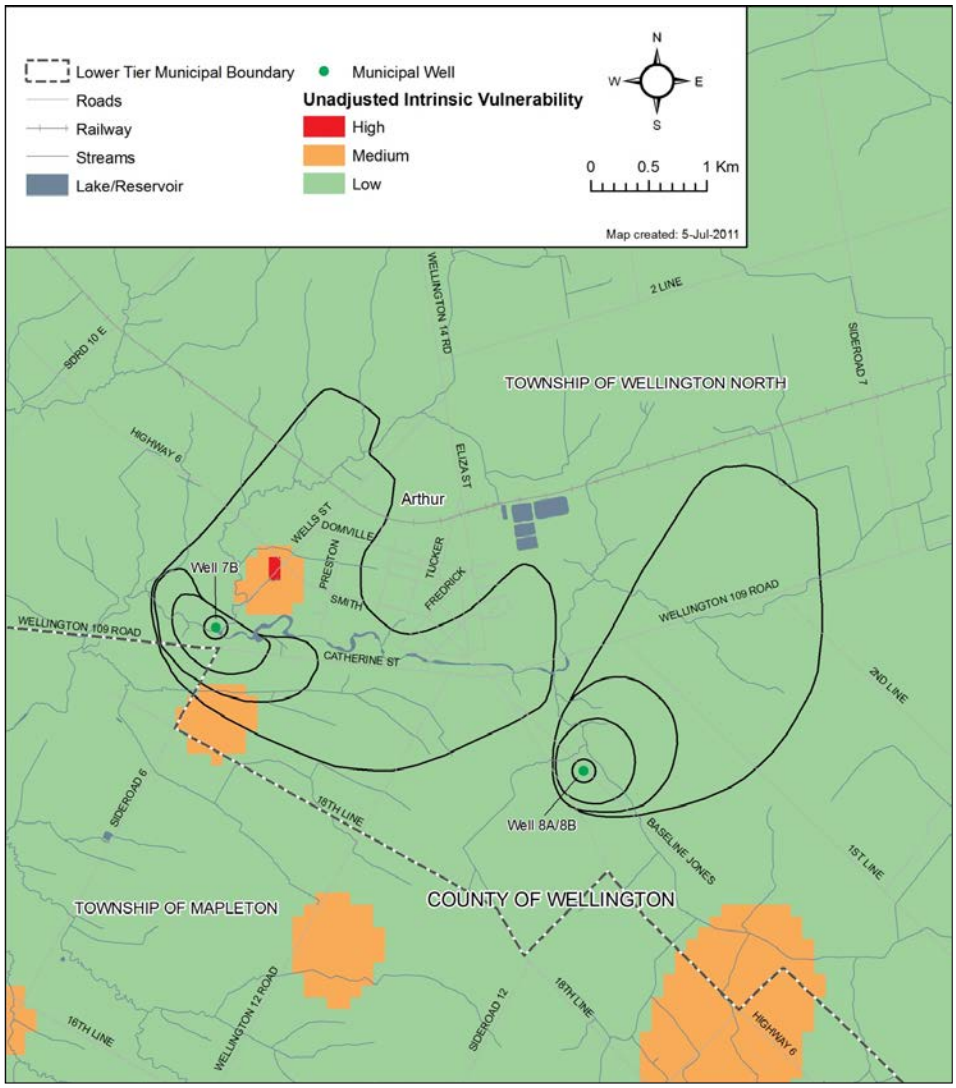
Since septic and sanitary sewer systems and infrastructure were only identified within the 2-year time-of-travel capture zone, only those areas within the WHPA-B protection zone with an initial

vulnerability score of less than 10 were selected for a transport pathway score adjustment. The transport pathway areas of influence are shown on **Map 6-5** and the final vulnerability score is shown on **Map 6-6.**

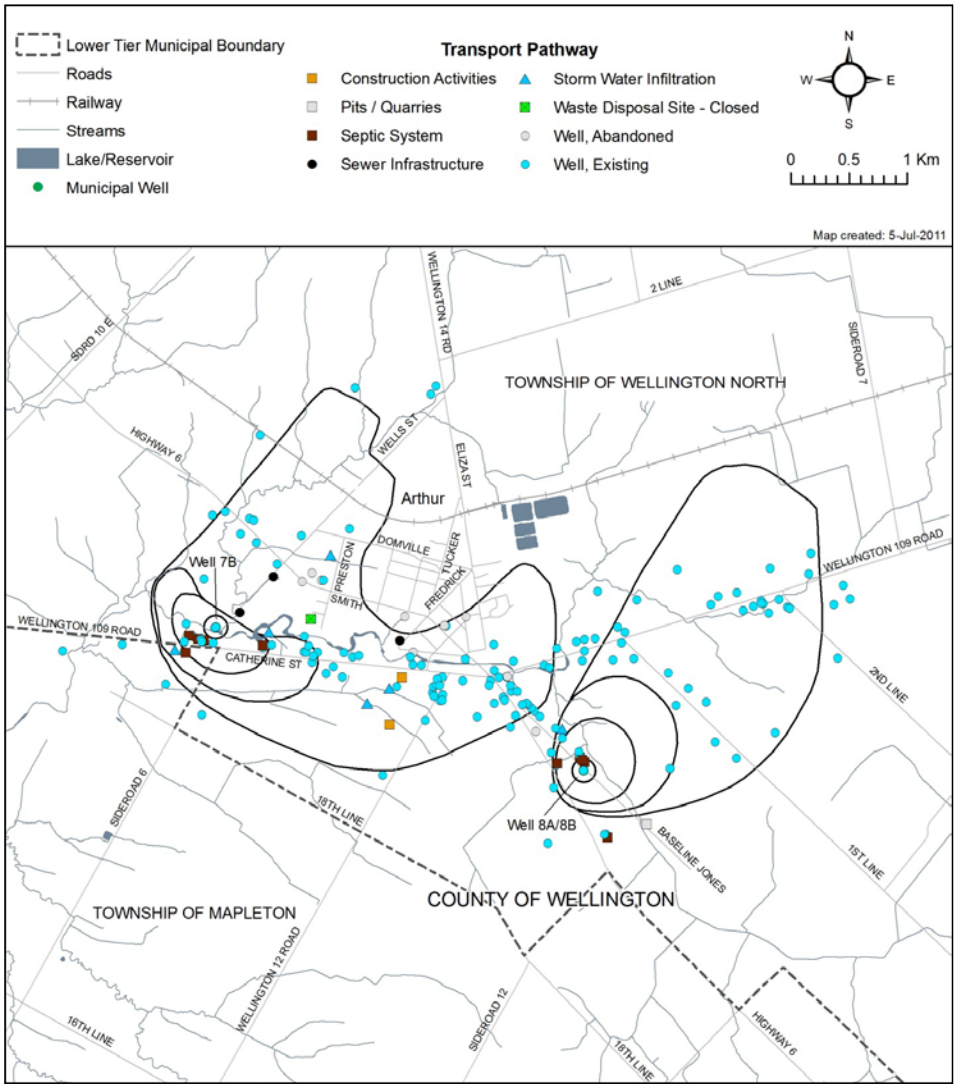
Uncertainty in the Wellhead Protection Area Delineation and the Vulnerability Scoring for the Arthur Well Supply

Data errors and data gaps are likely present in the information collected and thus the level of certainty is limited by the quality and completeness of the information available at the time the work was performed. Uncertainty associated with the regional aquifer vulnerability index mapping as part of the groundwater vulnerability analysis was determined to be high. Typically, the spatial accuracy and density of data points used to generate the mapping was low within the vulnerable areas included in this study. Since the vulnerability scoring is a fundamental segment brought forward to the threats evaluation, uncertainty must remain high for the number of significant threats identified.

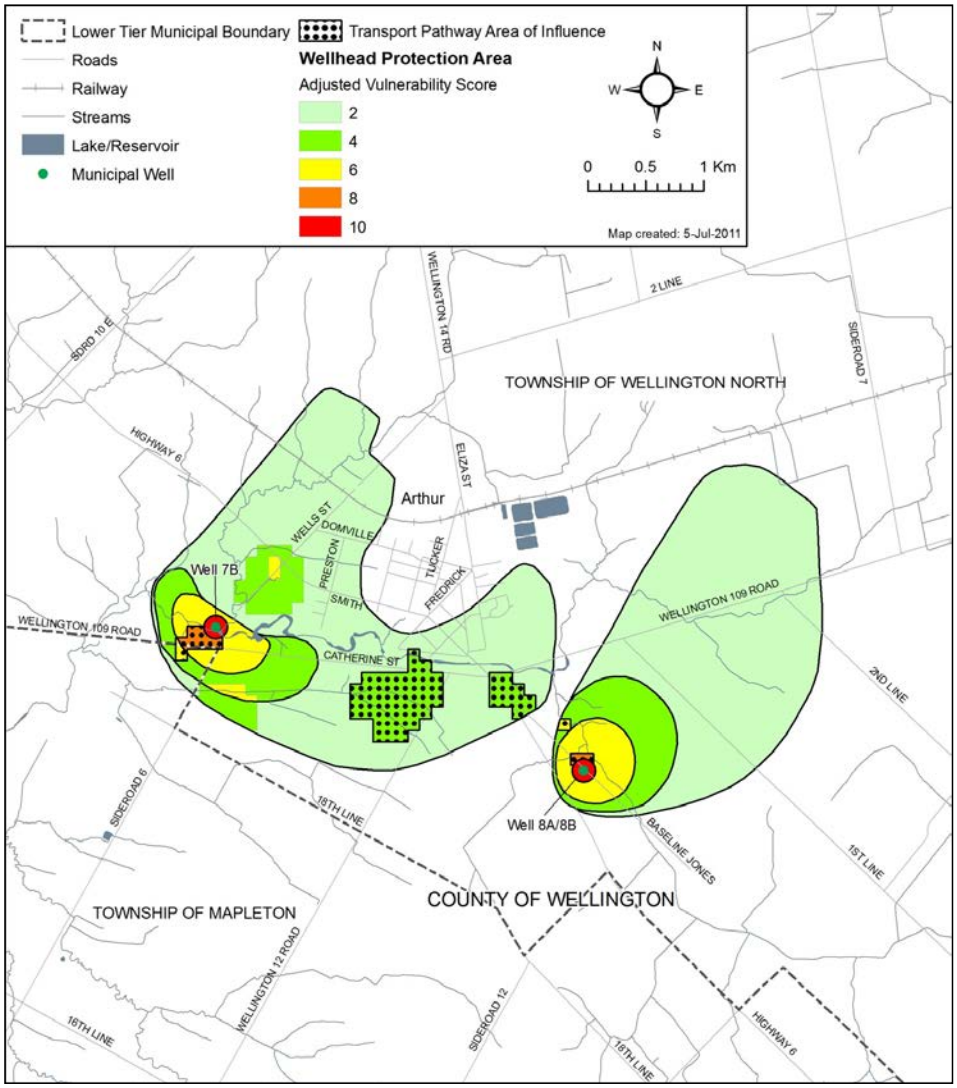
Map 6-3 Arthur Well Supply Unadjusted Intrinsic Vulnerability



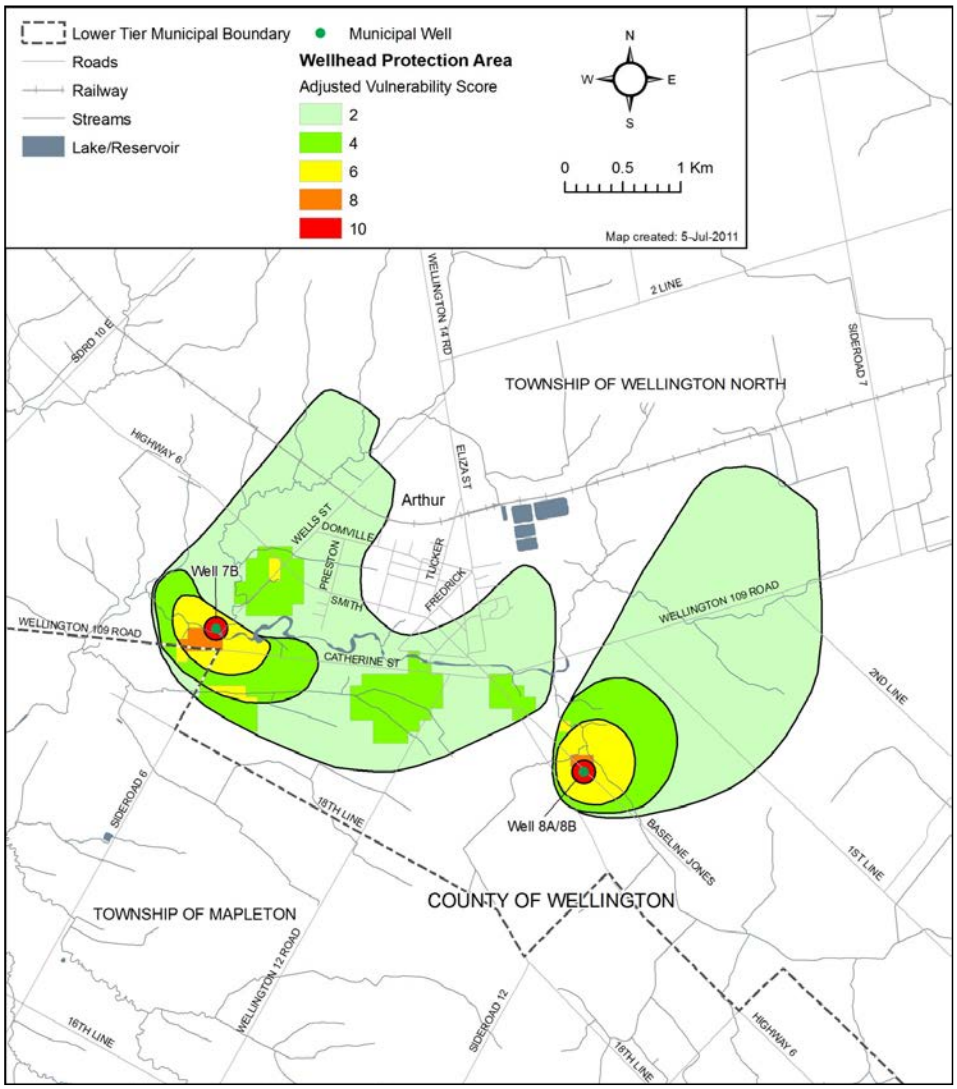
~~**Map 7-4: Arthur Well Supply Wellhead Protection Area Initial Vulnerability**~~
Map 6-4: Arthur Well Supply Wellhead Protection Area Transport Pathways



Map 6-5: Arthur Well Supply Wellhead Protection Area Transport Pathways Areas of Influence



Map 6-6: Arthur Well Supply Wellhead Protection Area Final Vulnerability



Managed Lands within the Arthur Wellhead Protection Areas

Managed lands are lands that may receive agricultural source material (ASM), non-agricultural source material (NASM) or commercial fertilizer and can be divided into 2 categories of agricultural managed lands (AML) and non-agricultural managed lands (NAML). Agricultural managed lands include cropland, fallow and improved pasture that may receive ASM. Non-agricultural managed lands may include golf courses, sports fields, residential lawns and other built-up grassed areas or turf that may have commercial fertilizers applied.

Calculation of the percentage of managed lands was done in accordance with Technical Rule 16(9) (MOECCOE, 201709b) with details outlined in Chapter 3 of this Assessment Report. Mapping the percentage of managed lands area is not required where the vulnerability score for an area is less than the vulnerability score necessary for the activity to be considered a significant threat. Therefore, The percentage of managed lands was only calculated where the vulnerability score in each Wellhead Protection Areas was 6 or greater. This criterion was used to determine the need to calculate managed lands surrounding the wells in the Arthur Well Supply as presented in **Table 7-4**.

Table 7-4: Wellhead Protection Areas with Vulnerability Scores of 6 or Higher in the Arthur Well Supply

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Wellington	Arthur Well Supply	7A/7B	Yes	Yes	No	Yes
		8A/8B	Yes	Yes	No	No

Methodology for Calculating Managed Land Percentage

Each Wellhead Protection Area zone that required assessment for managed lands was selected and mapped using ArcGIS. The MPAC property layer with the associated farm code data table was overlaid over the Wellhead Protection Areas and all the properties that fell entirely or partially within the Wellhead Protection Area were selected for assessment. A union of these two layers was completed to determine the area of each parcel that only fell within the Wellhead Protection Area.

The GIS layers for wooded areas, wetlands (GRCA) and drainage (polygons determining spatial extent, not just linear location) were used to determine the extent of these land uses and were excluded from the combined MPAC parcel and Wellhead Protection Area layer.

Determining the non-agricultural managed lands utilized the MPAC description of the particular land use, but was also supplemented via air photo interpretation and an orthoimagery taken in 2006. Certain areas such as single residential unit parcels were analyzed for NAML area through air photo interpretation. For instance, by using a representative set of parcels within that MPAC category, areas that had potential as NAML (such as turf, lawns) were estimated with the area calculating tool. Further interpretation of the air photo were used to include or exclude parcels that were similar, then all these parcels were applied with the same percentage of managed land. Areas that had no managed lands included parcels with completely impervious cover or natural areas of scrubland or the like.

Utilizing attributes as described by the MPAC category and air photo interpretation, other areas were assessed to determine the percentage of NAML within the parcels in the Wellhead Protection Areas in the same method. These percentages of NAML were multiplied by the area to get the amount of NAML in each parcel. The sum of all the NAML areas for the parcels within

~~the Wellhead Protection Area was divided by the total area of the Wellhead Protection Areas to get the percentage of NAML.~~

~~Farm codes were supplied in a separate table that was joined to the MPAC parcels to determine which parcels had the potential for application of ASM. Non-farm parcels were not coded ("Not Defined" in the Farm Operation code) and were assumed to not be agricultural in nature, unless the air photo was interpreted otherwise. AML includes cropland, improved pasture and fallow. The land area of these agricultural lands was summed then calculated as a percentage of the Wellhead Protection Area.~~

~~The area of NAML and the area of AML were summed then divided by the total area of the Wellhead Protection Area to get the percentage of managed lands.~~

The results of the calculations for managed lands are provided in **Table 6-3** and **Map6-7**, for the Arthur Wellhead Protection Areas.

Table 6-3: Managed Lands Percentage in the Arthur Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Wellington North	Arthur	7A/7B	24.16%	47.72%	N/A~~e~~	63.86%
		8A/8B	79.39%	96.11%	N/A~~e~~	N/A~~e~~

The coding of N/A indicates that the vulnerability score in this area is 4 or less, and this area has not been assessed.

Livestock Density within the Arthur Wellhead Protection Areas

Technical Rule 16 also requires the mapping of livestock density. Livestock density is defined as the number of nutrient units over a given area, and is expressed by dividing the nutrient units by the number of acres in the agricultural managed land area or the livestock grazing area depending on the threat being assessed. Livestock density is used as a measure to determine the intensity of livestock animals and as such can be used as a measure of the potential for generating, storing and land applying agricultural source material. The method to calculate livestock density is detailed in Chapter 3 of this Assessment Report.

~~*Methodology for Determining Livestock Density*~~

~~As stated previously for the methodology on managed lands, the farm operation code table joined to the MPAC layer was used to determine what type of farming took place in each parcel. Often these categories were helpful for scoping of livestock housing, yet some were too generic (such as 'mixed farming') or erroneous and air photo interpretation was needed to determine what structures had the potential to house livestock.~~

~~The first screening of the air photo was to determine whether barns were present on a parcel that fell either partially or entirely within each Wellhead Protection Area. The barns on farms with codes not related to livestock (such as 'cash crops – feed and seed') were looked at but often quickly ruled out as livestock barns due to the farm code description.~~

~~Barns on farm parcels with codes related to livestock were looked at more carefully to determine what type of livestock could be housed and in which structures. Air photo interpretation with some knowledge of key identifying features of housing structures and land use practices allowed some confidence in selecting the correct structure as a livestock housing structure.~~

~~Once a livestock housing barn was selected, the type of livestock that was assumed to be housed in the barn was estimated with help from the farm code description and air photo interpretation. A polygon was drawn to cover the footprint of the structure to represent of the area of housing space for the livestock. The area of the barn was multiplied by the conversion factor for that livestock type, relating the area of the barn (in square metres) per Nutrient Unit, as supplied by OMAFRA in the Technical Memorandum issued by the Grand River Conservation Authority (GRCA) for Lake Erie Region Technical Studies (September 23, 2009) (GRCA, 2009a). This amount of nutrients is assumed to be applied to all the AML area on that farm unit evenly.~~

~~To verify the air photo interpretation, drive-by site visits were done to capture a photograph of the barn from the road-side.~~

~~Once all the livestock barns were found and the NU's calculated, the total NU applied to only the area within the Wellhead Protection Area is needed. Using area weighting, the livestock density (in NU/acre) of each farm parcel was applied to only the area within the Wellhead Protection Area and summed with all the other NU calculations on farm parcels in the Wellhead Protection Area.~~

~~The total NU generated by all the barns is divided by the total AML in the Wellhead Protection Area, as calculated in Step 5 of the Managed Lands Methodology, regardless of the type of farm (livestock or non-livestock). The livestock density in the Wellhead Protection Area is thus the sum of all NU applied within the Wellhead Protection Area divided by the total AML area (in acres).~~

The results of the calculations for livestock densities are provided in **Table 6-4** and **Map 6-8,** for the Arthur Wellhead Protection Areas.

Table 6-4: Livestock Density (NU/acre) in the Arthur Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Wellington North	Arthur	7A/7B	0	0.13	N/A	0.95
		8A/8B	2.59	0.801	N/A	N/A

The coding of 0 indicates that there were no agricultural livestock barns to contribute nutrients and therefore the value for livestock density is 0. The coding of N/A indicates that the vulnerability score in this area is 4 or less, and this area has not been assessed.

Assumptions While Assigning Non-Agricultural Managed Lands

Some default values were used for estimating NAML based on the air photo interpretations and for ease of calculating. Roads generally had right-of-ways that were about 50% of the parcel size while the rest was the actual roadway, so most of these parcels were given NAML percentage of 50%. Parks or other open green-space that were interpreted as turf or grass were all assumed to have commercial fertilizers applied and thus defined as managed lands.

Percent Impervious Surface Area within the Arthur Wellhead Protection Areas~~To calculate the percent impervious surface, information on land cover classification from the Southern Ontario Land Resource Information system (SOLRIS) was used. This provided land use information, including road and highway transportation routes, as continuous 15x15 metre grid cells across the entire Source Protection Area. All the cells that represent highways and other impervious surfaces used for vehicular traffic were re-coded with a cell value of 1 and all other land cover classifications were given a value of 0, to identify impervious surface areas.~~

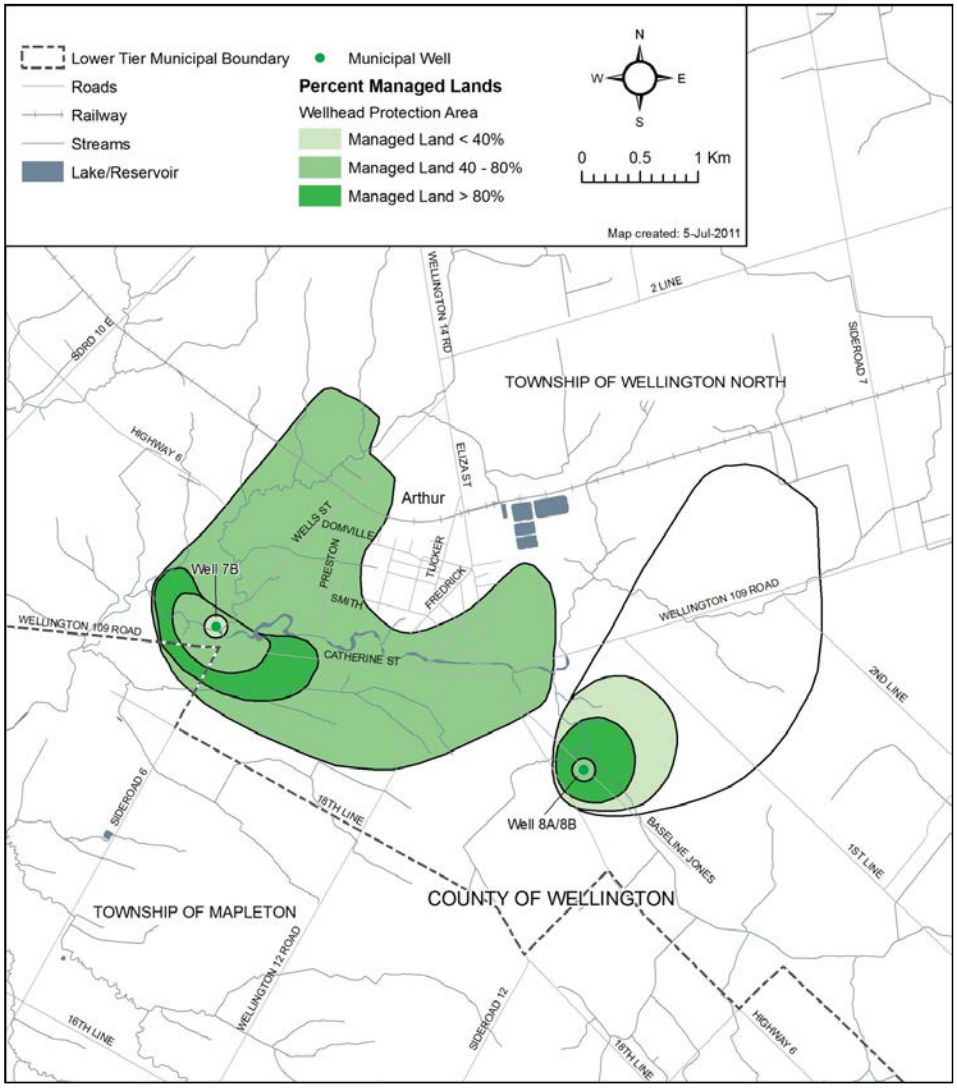
~~*Then, a focal sum moving window average was applied using the Spatial Analyst module of the ArcGIS software. For each 15x15 metre cell, the total number of neighbouring grid cells coded as impervious, within a 1x1 kilometre search area, was calculated. This total was then converted into the percentage of impervious surface by land area, using the area of each cell (225 sq. m) and the area of the moving window (1 sq. km). This provides a 1x1 kilometre moving window calculation of percent impervious surface, represented in 15x15 metre spatial increments. This dataset was calculated for the entire Source Protection Area, but was clipped to show those results only in the Wellhead Protection Areas and Intake Protection Zones. The analysis is more representative of road density and is better than the method described in the Technical Rules. As per Technical Rule 15.1, the Director has confirmed his agreement with the departure. The Director's letter of confirmation can be found in Appendix B.*~~

Percent impervious surface area for the Arthur WHPAs was calculated using the average moving window method, which is described further in Chapter 3 of this Assessment Report. **Table 6-5** and **Map 6-9** provide a summary of percent imperviousness within each of the Arthur Wellhead Protection Areas.

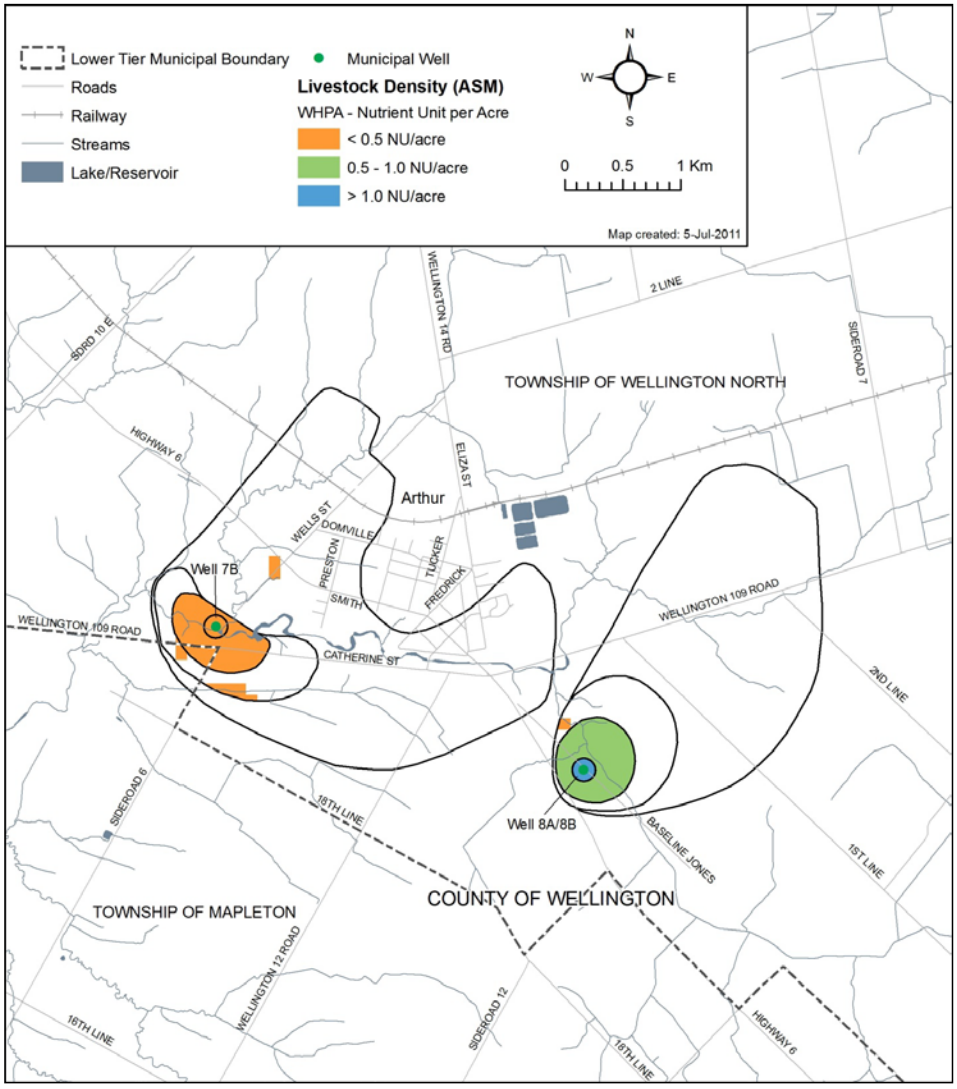
Table 6-5: Percent Impervious Surface Area in the Arthur Wellhead Protection Areas

Arthur Well ID	WHPA-A	WHPA-B	WHPA-C	WHPA-D
7B	0%	7.77%	3.23%	21.24%
8B	0%	1.16%	1.64%	2.4%

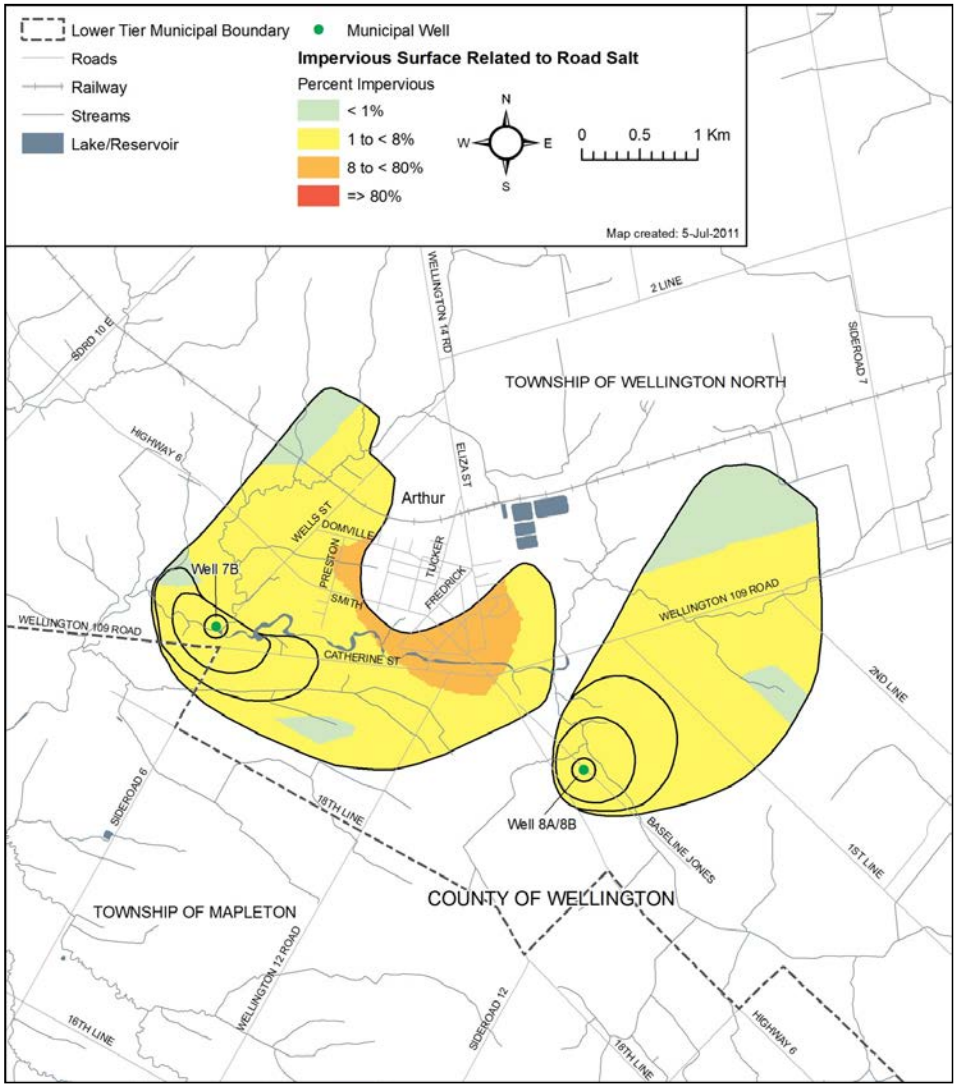
Map6-7 : Arthur Well Supply Percent Managed Lands



Map 6-8: Arthur Well Supply Livestock Density



Map 6-9: Arthur Well Supply Percent of Impervious Surfaces



6.1.3 Drinking Water Threats Assessment

The Ontario *Clean Water Act*, 2006, defines a Drinking Water Threat as "an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulation as a drinking water threat." A Prescribed Drinking Water Threats table in Chapter 3 of this Assessment Report lists all possible drinking water threats.

Identification of Significant, Moderate and Low Drinking Water Quality Threats for the Arthur Well Supply

The identification of a land use activity as a significant, moderate, or low drinking water threat depends on its risk score, determined by considering the circumstances of the activity and the type and vulnerability score of any underlying protection zones, as set out in the Tables of Drinking Water Threats available through www.sourcewater.ca. Information on drinking water threats is also accessible through the Source Water Protection Threats Tool: http://swpip.ca. The information above can be used with the vulnerability scores shown in **Map 6-6** to help the public determine where certain activities are or would be significant, moderate and low drinking water threats.

Table 6-6 provides a summary of the threat levels possible in the Arthur Well Supply for Chemical, Dense Non-Aqueous Phase Liquid (DNAPL), and Pathogens. A checkmark indicates that the threat classification level is possible for the indicated threat type under the corresponding vulnerable area / vulnerable score; a blank cell indicates that it is not. The colours shown for each vulnerability score correspond to those shown in **Map** 6-6.

Table 6-6: Identification of Drinking Water Quality Threats in the Arthur Wellhead Protection Areas

Threat Type	Vulnerable Area	Vulnerability Score	Threat Classification Level		
			Significant 80+	Moderate 60 to <80	Low >40 to <60
Chemicals	WHPA-A	10	✔	✔	✔
	WHPA-B	8	✔	✔	✔
	WHPA-B/C/D	6		✔	✔
	WHPA-C/D	2 & 4			
Handling / Storage of DNAPLs	WHPA-A/B/C	Any Score	✔		
	WHPA-D	6		✔	✔
	WHPA-D	2 & 4			
Pathogens	WHPA-A	10	✔	✔	
	WHPA-B	8		✔	✔
	WHPA-B	6			✔

6.1.4 Conditions Evaluation

Conditions are contamination that already exist and are a result of past activities that could affect the quality of drinking water. To identify a Condition, Part XI.3, Rule 126 of the CWA Technical Rules (2009b), lists the following two criteria for groundwater sources:

- The presence of a non-aqueous phase liquid in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or wellhead protection area.

- The presence of a contaminant in groundwater in a highly vulnerable area, significant groundwater recharge area or a wellhead protection area, if the contaminant is listed in Table 2 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that Table.

The above listed criteria were used to evaluate potentially contaminated sites within the Arthur WHPAs to determine if such a Condition was present at a given site.

Conditions Evaluation for the Arthur Well Supply
There is no indication of existing groundwater conditions resulting from past activities or spills that constitute a drinking water threat (as defined under Part XI.3 Rule 126 of the Assessment Report Technical Rules).

Ecolog records from the Occurrence Reporting Information System (1988-2002) were reviewed to identify reported spills and occurrences within each Wellhead Protection Area that have the potential to contaminant groundwater. Fuel spills were identified in Arthur. These spills may have resulted in surface water or soil contamination, but none were reported to have contaminated groundwater.

6.1.5 Drinking Water Quality Issues Evaluation

The objective of the Issues evaluation is to identify drinking water Issues where the existing or trending concentration of a parameter or pathogen at an intake, well or monitoring well would result in the deterioration of the quality of water for use as a source of drinking water. The parameter or pathogen must be listed in Schedule 1, 2 or 3 of the Ontario Drinking Water Quality Standards (ODWQS) or Table 4 of the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines (Technical Rules XI.1 (114 – 117)). Elevated concentrations of selected parameters that are naturally occurring or where effective treatment is in place are not considered drinking water Issues.

Once a drinking water Issue is identified, the objective is to identify all sources and threats that may contribute to the Issue within an Issue Contributing Area and manage these threats appropriately. If at this time the Issue Contributing Area can not be identified or the Issue can not be linked to threats then a work plan must be provided.

If an Issue is identified for an intake, well or monitoring well, then all threats related to a particular Issue within the Issue Contributing Areas are significant drinking water threats, regardless of the vulnerability.

Data Sources for the Drinking Water Quality Issues Evaluation
Drinking water quality data for each municipal well and surface water intake was collected from governmental sources, including:

- Engineer Reports
- Operator Statements
- The Drinking Water Information Systems Database (DWIS)
- Annual Reporting to the ~~MOE~~ MECP (web-based)
- The Assessment Report's Watershed Characterization Report

Drinking Water Quality Issues Evaluation for the Arthur Well Supply

Parameters that are possible Issues are listed in **Table** 6-7**.** The table lists the parameter or pathogen of concern, and municipal well at which the exceedance(s) occurred, frequency of occurrence, potential source of contamination, and source of information.

Table 6-7: Summary of Possible Water Quality Issues

Municipal Well	Parameter/ Pathogen	Contaminant	Potential Contaminant Source	Reference	Comments
Arthur 7A and 7B	Iron	Chemical	Naturally Occurring	Annual Reporting; BM Ross, 2001	Commonly exceeds ODWQS Technical Support Document Table 4.
Arthur 7A and 7B	Fluoride	Chemical	Naturally Occurring	Annual Reporting; BM Ross, 2001	Infrequently exceeds ODWQS Schedule 2.
Arthur 7A	Water Colour	Chemical	Naturally Occurring	Annual Reporting; BM Ross, 2001	Commonly exceeds ODWQS Technical Support Document Table 4.
Arthur 7A and 7B	Total Dissolved Solids	Chemical	Naturally Occurring	Annual Reporting; BM Ross, 2001	Occasionally exceeds ODWQS Technical Support Document Table 4.
Arthur 7B	Manganese	Chemical	Naturally Occurring	Annual Reporting; BM Ross, 2001	Infrequently exceeds ODWQS Technical Support Document Table 4.

There is currently no evidence to suggest that the presence of any of these parameters would lead to a deterioration of the Arthur Well Supply drinking water quality, nor is there any evidence to suggest a trend of increasing concentrations. In addition, the parameters of concern are all naturally occurring. No Issues have been identified under Rule 114 of the Technical Rules (~~MOE~~MOECC, 201709~~b~~).

Summary of Water Quality Issues Evaluation for the Arthur Well Supply

A total of four parameters listed in **Table 6-7** (iron, water colour, total dissolved solids, and manganese) were identified to commonly or occasionally exceed the drinking water quality standards of the Technical Support Document for Ontario Drinking Water Standards, Objectives, and Guidelines, and one parameter (fluoride) that was found to infrequently exceed the limits listed under Schedule 2 of the Ontario Drinking Water Quality Standards (CRA, 2009). It was noted, however, that the identified Issues for the Arthur Well Supply are naturally occurring, therefore, no Issues are reported for the Arthur Well Supply.

Limitations and Uncertainty for the Drinking Water Quality Issues Evaluation for the Arthur Well Supply

Data collected for the Issues Evaluation was limited in quantity and in temporal continuity. Raw water quality results ranged from 2 to 18 years in age, depending on the source. Recent analytical data typically included only raw water analysis for pathogens. Analytical data for metals, chemical and physical parameters were typically after treatment, resulting in the possibility for false

negatives. Also, since large temporal gaps existed in the data, it was difficult to define increasing trends.

6.1.6 Enumeration of Significant Drinking Water Quality Threats

The Technical Rules require an estimation of the number of locations at which an Activity is a significant drinking water threat and the number of locations at which a Condition resulting from past activity is a significant drinking water threat.

The enumeration of land use activities that may be associated with prescribed drinking water threats was based on a review of multiple data sources, including public records, data provided through questionnaires completed by municipal officials, previous contaminant/historical land use information, and data collected during windshield surveys. No site specific information was collected; therefore. As more site specific information becomes available during the source protection planning process, the presence of drinking water threats and their current level of management can be confirmed.

Drinking water threats as defined in the Ontario Clean Water Act (2006) were identified within the Arthur Wellhead Protection Areas through an enumeration of land use activities that may be associated with Prescribed Drinking Water Threats (Ontario Regulation 287/07).

The main objective of the assessment was to identify significant threats. A significant threat to a source of drinking water has a high likelihood of rendering a current or future drinking water source impaired, unusable or unsustainable, combined with a potential route for the contaminant to enter the source water.

Methodology for Enumerating Significant Drinking Water Quality Threats

Land use inventories were developed for each vulnerable area to associate activities with prescribed drinking water quality threats and generate a list of threats that are or have the potential to adversely affect the quality of drinking water. Existing and historical land uses were identified for each land parcel within (or intersecting) each Wellhead Protection Area and logged into a geospatial drinking water threat source database based on unique parcel identifiers (PINS).

A series of field walks and windshield surveys within the vulnerable areas was undertaken to identify existing land use activities. Residential, commercial, industrial, municipal, and other land uses were identified, cataloged and mapped within each Wellhead Protection Area. Other sources of information included government databases, assessment information, aerial photography, and general knowledge of the study area through Municipal representatives. EcoLog Environmental Risk Information Services Ltd. (ERIS) was used to conduct a search of available federal, provincial and private databases within each Wellhead Protection Area. Searchable databases which returned records are listed below.

- Aggregate Inventory
- Certificates of Approval
- Environmental Registry
- ERIS Historical Searches
- Fuel Storage Tank
- Occurrence Reporting Information System
- Ontario Regulation 347 Waste Generators Summary
- Ontario Regulation 347 Waste Receivers Summary
- Pesticide Register
- Private and Retail Fuel Storage Tanks

- Scott's Manufacturing Directory
- Water Well Information System

Land use categories were adapted from the Municipal Property Assessment Corporation (MPAC) property codes

A North American Industrial Classification System (NAICS) code was assigned to each land use activity identified within each parcel. In many instances, the land use activities identified through the available database searches, in the field, or through air photo interpretation differed from the MPAC property code classification. Professional judgment was used to assign an appropriate NAICS code. Where more than one land use activity was identified within a property, the appropriate NAICS codes were assigned.

The land uses identified within each parcel were used to determine if the associated activity (or activities) represents a potential significant threat to a drinking water source for which a policy in the source protection plan would be required to reduce or eliminate the threat.

The key data sources used to identify threats within the Arthur Wellhead Protection Areas included the following: Windshield surveys; government databases; assessment information; aerial photography; discussions with municipal representatives; EcoLog Environmental Risk Information Services Ltd. Search; and Municipal Property Assessment Corporation (MPAC) property codes.

Significant Drinking Water Quality Threats in the Arthur Wellhead Protection Areas
Table 6-8 summarizes the total number of significant pathogen, chemical, and DNAPL threats identified within each vulnerable area.

Table 6-8: Significant Drinking Water Quality Threats in the Arthur Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	1	WHPA-A
2	Sewage System or Sewage Works- ~~Septic System~~Onsite Sewage Systems	2	WHPA-A
3	Application of Agricultural Source Material to Land	3	WHPA-A
8	Application of Commercial Fertilizer	2	WHPA-A
10	Application of Pesticide to Land	3	WHPA-A
16	Handling and Storage of DNAPLs	2	WHPA-A, WHPA-C
17	Handling and Storage of Organic Solvents	1	WHPA-A
Total Number of Properties			**6**
Total Number of Activities			**14**

Table 6-8: Significant Drinking Water Quality Threats in the Arthur Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Limitations and Uncertainty for the Enumeration of Significant Drinking Water Supply Threats for the Arthur Well Supply

Certainty in the threats evaluation is limited by the completeness and accuracy of the land use information and knowledge of the circumstances associated with the parcel-based activities identified across the study area. Any revisions to the vulnerability scoring and/or to the list of activities/Conditions and their circumstances would effectively impact the threats evaluation, altering the number of significant threats identified within the vulnerable areas included in the study. As the threats evaluation was a desktop exercise, verification would be needed to confirm the threats listed above.

Limitations include the general completeness of the databases used, currency of the data, accuracy of the data, and the generic nature of the threat ranking.

The following assumptions were made during the threat evaluation:

- ASM and NASM assumed based on land use activities, qualities estimated;
- Application of pesticides assumed based on land use activity;
- The presence of a on-Site septic system could lead to the discharge of a pathogen in the ground or surface water; and
- Storage of pesticides was based on the presence of farm buildings. The circumstances were unknown, therefore the quantities were assumed.

6.2 Township of Mapleton

Two municipal groundwater supply wells are located within the Township of Mapleton within the Grand River Source Protection Area: Drayton and Moorefield.

6.2.1 Drayton Well Supply

The Village of Drayton Well Supply system provides water for the Village of Drayton which has a population of approximately 1,550 persons (Statistics Canada, 2002). The area serviced is shown in **Map 6-10**. The system consists of two production wells located in a pumphouse off of Wood Street.

The Drayton production wells are both 250 mm diameter wells located approximately 6.1 m apart and in the context of this report they were modelled as a single source. Well 1 was drilled to a depth of 66.29 m in 1967 and Well 2 was drilled to a depth of 67.05 m in 1984. The two municipal wells were completed as open holes in the upper portion of the dolostone bedrock aquifer which is overlain by about 58 m of fine-grained overburden (Burnside, 2001c).

The Drayton Well Supply system operates according to Permit to Take Water (PTTW) No. 85-P-2004. According to the permit, the rate from the Drayton wells is not to exceed 2.73 m^3/min and the daily amount is not to exceed 3,927 m^3/day. As required by the Permit to Take Water conditions, two domestic wells referred to as the Thomson Well and the Flinkert Well are monitored for water levels (Burnside, 2009a).

6.2.2 Moorefield Well Supply

The Moorefield Well Supply system services the small hamlet of Moorefield located at Wellington Road 10 and Concession 8 with a population of approximately 550 residents. The water supply system includes two production wells which are located at the Public Works property on Wellington Road 10. The serviced area is shown on **Map 6-10.**

Moorefield Well 1 was originally installed in 1996 and was drilled to a total depth of 91.5 m. Moorefield Well 2 was installed in 2002 as a backup well. Due to similarity in construction and separation distance these wells were also modelled as a single source in the context of this report. Water in the wells comes from an extremely permeable portion of the dolomite bedrock aquifer at a depth of 82 m. The aquifer responds as a confined aquifer with little to no leakage. Overburden sediments consist of primarily fine grained silt and clay till (Burnside, 2002a).

The Moorefield Well Supply system operates according to Permit to Take Water No. 4651-6JTS55 which provides that the pumping rate from each well is not to exceed 910 L/min and the daily amount from each well is not to exceed 1,310 m^3/day (Burnside, 2009b). As part of the PTTW, a monitoring program has been established and results are reported annually to the MECP~~OE~~. Two monitoring wells known as the Yard Well and Lounabury Well are included in this program.

Map 6-10: Township of Mapleton Serviced Areas

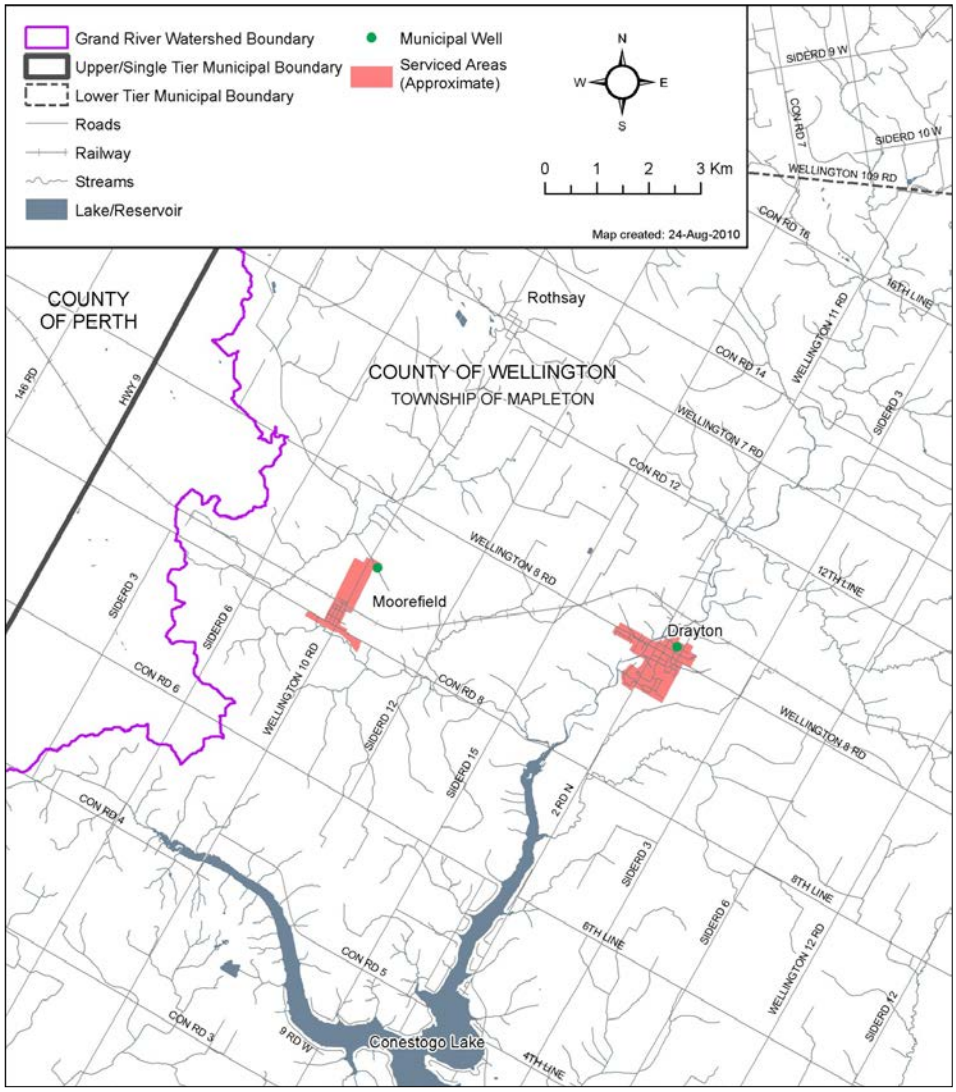


Table 6-9, Table 6-10 and Table 6-11 summarize the municipal groundwater systems and pumping rates for both the Drayton and Moorefield Well Supply systems within the Township of Mapleton.

Table 6-9: Municipal Production Wells in the Township of Mapleton

Well	Depth (m)	Open Interval	PTTW Number	Permitted Pumping Rate
Drayton PW1	66.3	62.2 m to 66.3 m	85-P-2004	273 L/min
Drayton PW2	67.05	61.6 m to 67.05 m		
Moorefield PW1	91.5	76.2 m to 91.5 m	4651-6JTS55	910 L/min
Moorefield PW2	91.5	73.1 m to 91.5 m		

Table 6-10: Municipal Residential Drinking Water System Information for the Township of Mapleton in the Grand River Source Protection Area (Drayton and Moorefield Well Supply Systems)

DWS Number	DWS Name	Operating Authority	GW or SW	System Classification[1]	Number of Users Served[2]
220004064	Drayton Well Supply	OCWA	GW	Large Municipal Residential System	1,550
260069732	Moorefiled Well Supply	OCWA	GW	Large Municipal Residential System	550

[1] as defined by O. Reg. 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002.*
[2] Drayton and Moorefield 2009 Annual Reports (O.Reg 170/03)

Table 6-11: Annual and Monthly Average Pumping Rates for Mapleton Municipal Residential Drinking Water Systems in the Grand River Region

Well or Intake	Annual Avg. Taking[1] (m^3/d)	Monthly Average Taking[1] (m^3/d)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Drayton PW1	453.03	438.66	458.44	461.38	418.93	445.36	506.08	472.20	392.85	508.09	455.33	444.18	434.88
Drayton PW2	8.54	0.83	0.79	3.01	2.21	30.23	1.08	2.23	42.8	0.78	16.23	1.11	1.25
Moorefield PW1	60.98	71.63	71.39	63.81	63.84	63.84	61.96	60.39	54.64	56.42	54.91	52.84	56.04
Moorefield PW2	54.54	76.49	66.46	69.26	64.17	64.50	65.62	61.96	57.72	63.23	58.99	60.38	65.75

[1] source: Township of Mapleton 2009 annual summary report

6.2.3 Vulnerability Analysis

Delineation of Wellhead Protection Areas

Wellhead Protection Areas associated with the municipal water supply represents the areas within the aquifer that contribute groundwater to the well over a specific time period. Four Wellhead Protection Areas are specified, one a proximity zone and the others time-related capture zones:

- WHPA-A 100m radius from wellhead
- WHPA-B 2-year Time-of-Travel (TOT) capture zone
- WHPA-C 5-year TOT capture zone
- WHPA-D 25-year TOT capture zone

Modelling Approach for the Drayton and Moorefield Well Supply Systems

The Township of Mapleton delineated Wellhead Protection Areas as part of their previous groundwater management study (Golder, 2006a). The Wellhead Protection Areas were delineated using a regional scale MODFLOW model for the Township of Mapleton and the southern half of Wellington-North. The model was constructed and calibrated with available hydrogeological data and hydrogeological mapping products as described in the Groundwater Protection Study report (Golder, 2006a). The pumping rates used in developing the capture zones were based on a forecast of anticipated future groundwater use and are provided in **Table 6-12**.

Table 6-12: Pumping Rates Used for Wellhead Protection Area Delineation of Drayton and Moorefield Well Supply Systems

Supply Wells	Pumping Rate Used
Drayton PW1/2	1,208 m^3 / day
Moorefield	225 m^3 / day

To develop Time of Travel capture zones, groundwater particles were released at the pumping wells in the models and tracked backwards towards their source of origin (recharge). At each well location, particles were released in all hydrostratigraphic units “open” to the wellbore. The time-related pathlines that are subsequently generated by the model from this analysis are then overlain and a single Time of Travel capture zone drawn around the “family” of pathlines generated at each well. To check the capture areas generated from the backward tracking analysis (and in some cases to refine the Time of Travel outline produced) a series of forward particle tracking simulations were completed. The resulting capture zone from this process represents the two-dimensional (2-D) projection of the particle outlines to ground surface. The models infer that the groundwater flow systems are equivalent porous media at the scale of the time-related capture zones under consideration. While groundwater flow in bedrock aquifers occurs primarily in the fractures, the use of an equivalent porous medium approach can still provide a reasonable approximation of the time of travel related capture zones of a bedrock supply well provided the scale of observation is much greater than the scale of individual fractures, and consideration is given to the selection of a reasonable “effective” porosity. The effective porosity assumed for the travel time calculations was 5% (Golder, 2006a).

Delineation of the Drayton and Moorefield Wellhead Protection Areas

The locations and orientations of the Drayton and Moorefield Wellhead Protection Areas are shown in **Map 6-11** and **Map 6-12,** respectively.

The Drayton capture zones extend in a north-east direction from the well up gradient of regional groundwater flow in the bedrock. The WHPA-D zone extends approximately 6 km from the well and the total Wellhead Protection Area covers an area of 1,082 ha. The Moorefield capture zones also extend in a north-east direction. The Wellhead Protection Area is 4 km long and approximately 900 m wide with a total area of 236 ha.

Delineation of WHPA-E and WHPA-F for the Drayton and Moorefiled Wellhead Protection Areas

~~The Technical Rules (MOE, 2009b) require that all wells that are identified as GUDI (groundwater under the direct influence of surface water) delineate an additional protection zone that is representative of its surface water vulnerability, known as a WHPA-E. GUDI wells are identified in accordance with subsection 2 (2) of O. Reg. 170/03 (Drinking Water Systems) of the Safe Drinking Water Act, 2002.~~

None of the wells in this study have been identified as GUDI, therefore delineation of a WHPA-E was not required. The Technical Rules also require that a WHPA-F be delineated for a well when the wells Wellhead Protection Area contains a WHPA-E and a drinking water Issue is identified that originates outside of the areas WHPA-A through WHPA-E. Since a WHPA-E was not required for any of the wells, the delineation of a WHPA-F was also not required.

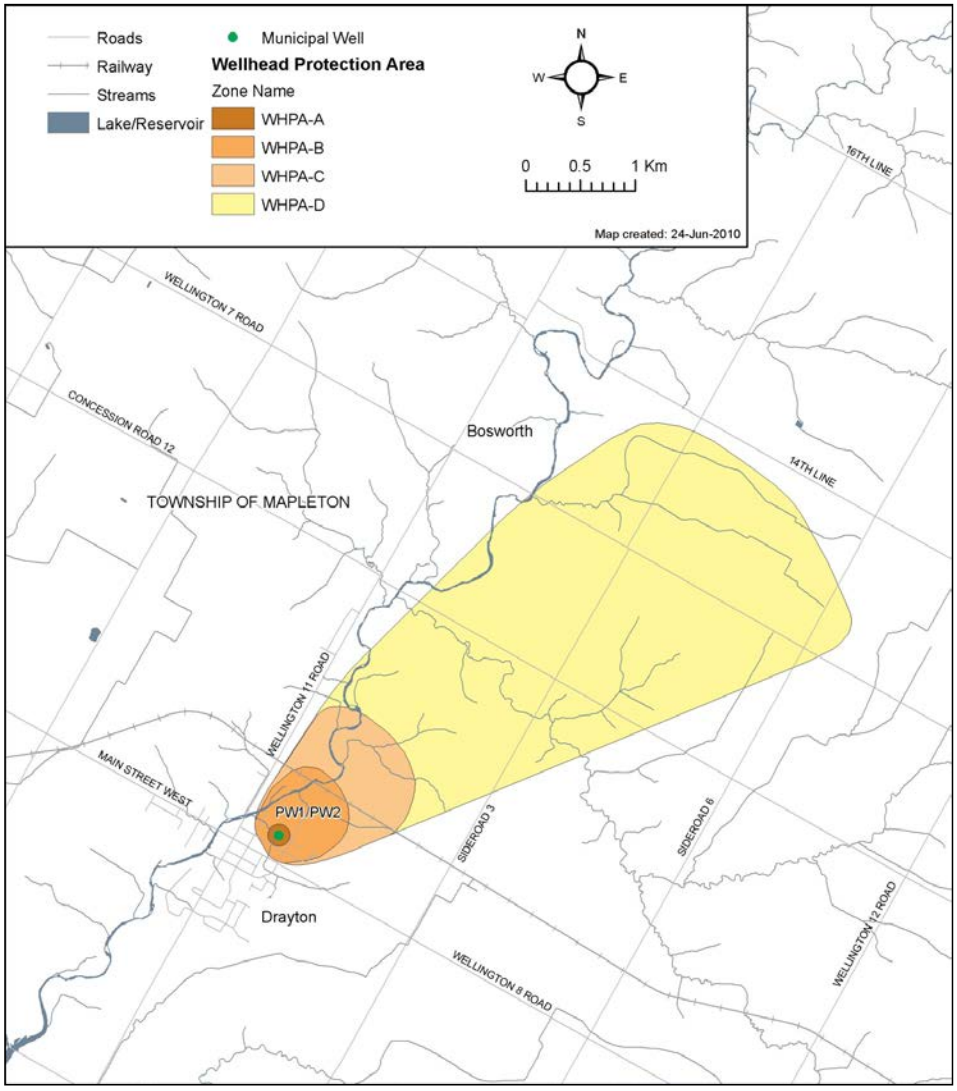
Uncertainty of the Delineation of the Drayton and Moorefield Wellhead Protection Areas
The delineation of the Wellhead Protection Areas was completed by Golder in the Wellington County Groundwater Protection Study, 2006 through the use of a MODFLOW groundwater model. The model was completed based on a number of simplifying assumptions that incorporate some level of uncertainty that is dependent on the nature, spatial distribution and density of available data.

The groundwater model was calibrated to represent steady state conditions in the aquifer using static water levels from 1,323 points. The NRMS error for the calibration is reported as being 4.5% which is considered to be within the acceptable limits of less than 10% for numerical models (Golder, 2006a). Model boundary conditions included river boundaries, constant head boundaries and pumping well boundaries.

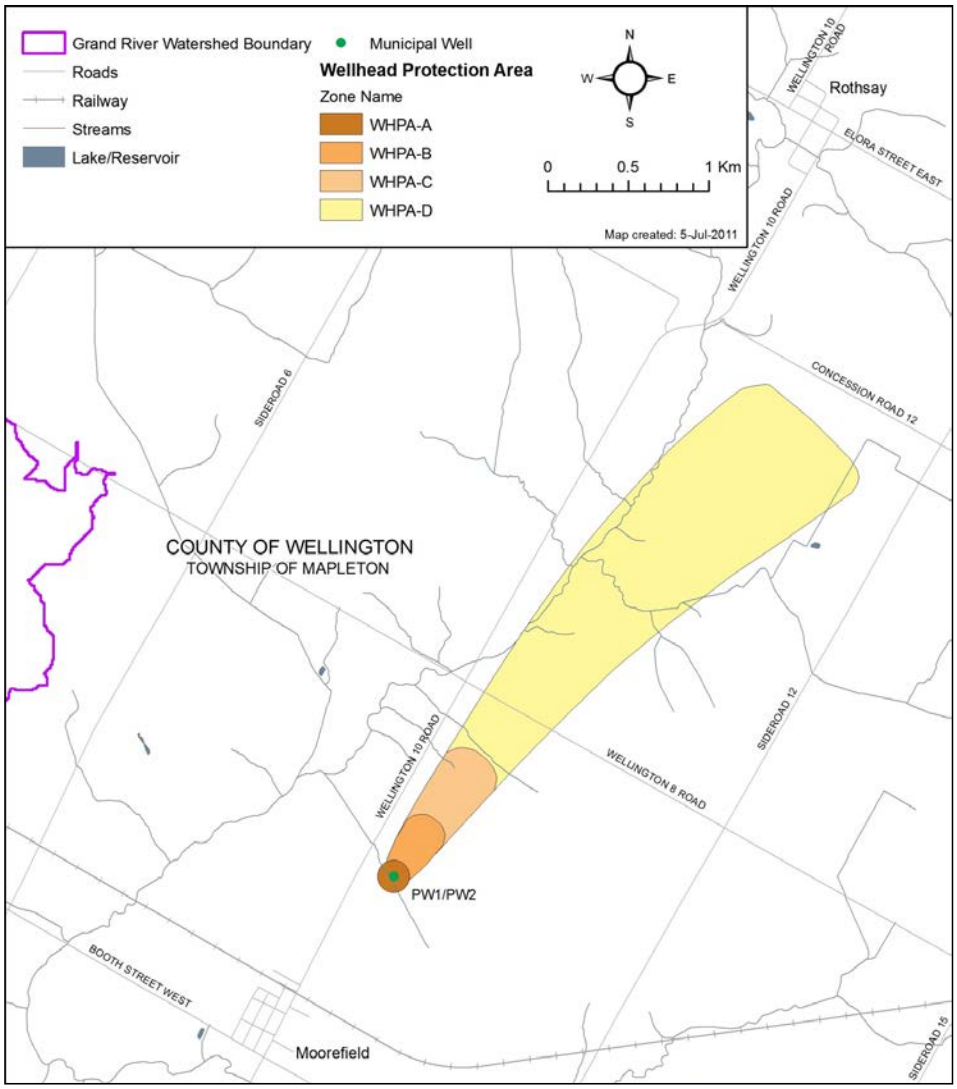
Uncertainties within the model are associated with limitations in the availability of subsurface information and can be related to projected variability in the aquifer properties (e.g. hydraulic conductivity; porosity) or uncertainties with the conceptual model (e.g. groundwater-surface water interactions; location of flow boundaries; recharge rates; continuity in aquitards; direction of regional groundwater flow). To account for some of these uncertainties Golder has applied a factor of safety to the Wellhead Protection Areas. The factor of safety has been applied to two components of the Wellhead Protection Areas; the width and length of the capture zones were increased by 20% to account for uncertainty in the hydraulic characteristics of the aquifer system and the orientation of the capture zone was adjusted by 5 degrees (plus and minus) along its centre line to account for some uncertainty in the regional flow direction by increasing the width of the capture zones at increasing distances from the pumping well. This reflects the concept that the available data is typically concentrated around the pumping well and that the uncertainty in the hydrogeological understanding increases at increasing distances from the supply wells (Golder, 2006a).

Based on the calibration results of the model and the safety factor applied to the Wellhead Protection Areas the uncertainty of the delineations can be considered low.

Map 6-11: Drayton Well Supply Wellhead Protection Area



Map 6-12: Moorefield Well Supply Wellhead Protection Area



Vulnerability Scoring in Wellhead Protection Areas

~~The completion of aquifer vulnerability scoring is outlined under Part VII, subsection VII.3 of the Technical Rules (MOE, 2009b). Mapping for this study was completed in three stages: i) development of aquifer vulnerability mapping ii) update of vulnerability due to transport pathways and iii) assignment of vulnerability scores.~~

Aquifer vulnerability mapping was completed by the GRCA using the Surface to Aquifer Advection Time (SAAT) approach. The SAAT approach estimates the average time required by a water particle to travel from a point at the ground surface to the aquifer of concern. The SAAT is approximated by using the vertical component of the advective velocity integrated over the vertical distance and the average porosity. The travel times generated are categorized into groups being <5 years, 5 to 25 years and > 25 years.

The GRCA retained Earthfx to complete the vulnerability mapping using the SAAT method for most of the Grand River watershed (Earthfx, 2008). The regional mapping was reviewed on a local scale in the vicinity of the water supply wells. The vulnerability mapping was refined based on the following considerations: bedrock outcrops, surficial geology, overburden thickness, SAAT point values and hydrogeological interpretations. There were no adjustments made to the Drayton and Moorefield SAAT ratings (Golder, 2010a). ~~The SAAT travel times were grouped to create ratings which were then used to construct an aquifer vulnerability map of the study area. Time of Travel values less than 5 years are rated as High Vulnerability. Values between 5 and 25 years are Medium vulnerability. Any value greater than 25 years is classified as having a Low Vulnerability. The various vulnerability ratings based on the travel times is shown in **Table 7-16**.~~ The instrinsic vulnerability for Drayton and Moorefield are shown on **Map 6-13 and Map 6-15.**

~~**Table 7-16: SAAT Vulnerability Ratings**~~

~~Time of Travel (years)~~	~~Vulnerability Rating~~
~~<5~~	~~High~~
~~5 to 25~~	~~Medium~~
~~>25~~	~~Low~~

~~A vulnerability score is assigned to each vulnerable area according to the groundwater's susceptibility to becoming contaminated and that contamination reaching a well (Technical Rules, MOE, 2009b).~~ Within Wellhead Protection Areas, the vulnerability score is determined based on overlaying the aquifer vulnerability classification (high, medium, low) with the defined Wellhead Protection Areas. The vulnerability scoring was completed in accordance with Rule 82 of the Technical Rules. Vulnerability scores range from 10 for areas with the highest vulnerability to 2 for areas with low vulnerability. ~~Scores were assigned as per Table 2(a) in Part VII of the Technical Rules (MOE, 2009b).~~ A summary of the process used to define vulnerability scores is outlined in Chapter 3.~~the **Table 7-17.**~~

~~**Table 7-17: Wellhead Protection Area Vulnerability Scores - SAAT**~~

	~~SAAT Times~~		
~~Time of Travel Zone (WHPA)~~	~~0 to 5 years (High)~~	~~5 to 25 Years (Medium)~~	~~>25 Years (Low)~~
~~WHPA-A (100m)~~	~~10~~	~~10~~	~~10~~
~~WHPA-B (2 year TOT)~~	~~10~~	~~8~~	~~6~~
~~WHPA-C (5 year TOT)~~	~~8~~	~~6~~	~~2~~
~~WHPA-D (25 year TOT)~~	~~6~~	~~4~~	~~2~~

Aquifer vulnerability mapping for Drayton and Moorefield is provided on **Map 6-14 and Map 6-16** respectively. In both WHPAs, the vulnerability score for WHPA-A is 10, WHPA-B is 6, and WHPA-C and WHPA-D is 2. The mapping illustrates that the study area is rated as having a low vulnerability. This is a reflection of the fine-grained till overburden located in the area ranging from 60 to 70 m in thickness providing protection from contaminants reaching the municipal aquifer.

Uncertainty in the Vulnerability Scoring for the Drayton and Moorefiled Well Supply Systems

Vulnerability assessment was completed by Earthfx on behalf of the GRCA in 2008 and was based on the SAAT. The SAAT calculation was based on a number of empirical formulae provided in past guidance documents from the MECP~~OE~~. Detailed descriptions of the methodology and associated assumptions for these calculations are included in the report entitled *Aquifer Vulnerability mapping for Norfolk, Brant Counties, Catfish Creek and Kettle Creek watershed* (Earthfx, 2008).

The calculation of SAAT is made up of two components; the unsaturated zone advection time (UZAT) and the water table to aquifer advection time (WAAT). In the Earthfx study both components were computed based on simplifying assumptions included in MECP~~OE~~ provided formulae. It was noted that the UZAT was computed based on estimates for groundwater recharge derived from a GAWSER model. Also values for specific yield of soils were obtained from existing literature. The results of the UZAT analysis showed a high degree of variance which may be attributed to variance in the input GAWSER model. The results of the analysis indicate that there is a 95.5 % certainty that the UZAT time calculated is within +/-42 years of the actual time at any well. This indicates that the variability of the UZAT value (margin of error) is greater than the divisions of the vulnerability range i.e. the vulnerability could vary across the entire range of classifications from low to medium or high based on its margin of error. The potential for this high variation indicates that the uncertainty related to this component is high.

UZAT was computed at various water well points across the study area. There was considerable effort made within the study to improve the quality of the locational and lithologic data provided by each data point. In this regard only wells with a location accuracy of less than 100 m were used as part of the study. It can be interpreted that the computations performed represented values that were correct locationally across the study area.

The second component of the SAAT vulnerability, WAAT, was computed based on a formula provided by the MECP~~OE~~ and was applied in areas where the target aquifer was known to be confined or where no aquifer material was recognized. The calculation assumes that flow within this zone can be approximated by the Darcy law for groundwater flow. The results of a statistical analysis indicate a high variance in the computed values which points to a high variance and high degree of uncertainty in the underlying data. The computation is known to be dependent on estimates of hydraulic properties, and interpolation of potentiometric surfaces which are based on sparse and unreliable data. The resulting product can be regarded as being an amalgamation of all the primary data uncertainties. Based on the uncertainty associated with the input data it is concluded that the WAAT calculation can be regarded as having a high uncertainty.

Finally the SAAT is derived by combining the previously discussed components of UZAT and WAAT. It is noted that the UZAT was computed using a GAWSER model to estimate recharge. The GAWSER model is known to be built on certain simplifying assumptions that have not been expounded in the background report from Earthfx. In light of this no level of uncertainty can be attached to the results of this model. Using the results of the UZAT and WAAT calculations as

outlined in the Earthfx report it is concluded that the level of uncertainty associated with the computation of SAAT is high. While the corrections applied to well locations resulted in locationally correct analyses, the underlying uncertainty in the computations themselves results in an overall ranking of high uncertainty for the process.

Earthfx performed a comparative analysis of vulnerability methods using Intrinsic Susceptibility Index (ISI) to compare with the values for SAAT. It was indicated that the SAAT ranking compared favourably to the ISI in the high vulnerability areas with more significant deviations in the medium and low ranked areas. The statistical analysis performed on the ISI however indicated that there was also a high uncertainty in these values.

The delineation of the Wellhead Protection Areas and the scoring of the vulnerable areas for the Township of Mapleton were completed using the most up to date models and information available for the area. Although there is some uncertainty involved the groundwater model, the amount of data available, the processing of this data to use only the highest quality data, and the use of conservative assumptions to account for uncertainty was sufficient to conclude that the uncertainty of the Wellhead Protection Areas delineations for the Drayton and Moorefield Well Supply systems is low.

The evaluation of the vulnerability indicated that due to variability in the underlying data the resulting uncertainty of vulnerability is considered to be high. This is despite the efforts to improve the spatial accuracy of some of the data points and also despite up to date approaches. It will be important to revisit the assumptions made as part of the assessment to try and develop methods to reduce the uncertainty associated with these values.

Identification of Transport Pathways and Vulnerability Adjustment

Rules 39 to 41 of the Technical Rules (~~MOE, 2009b~~MOECC, 2017) allows for an increase in vulnerability rating of an aquifer due to the presence of transport pathways that may increase the vulnerability of the aquifer by providing a conduit for contaminants to bypass the natural protection of the aquifer.

~~Transport pathways are developed where natural or man-made features in the aquifer provide a path along which contaminants can migrate to the regional aquifer. The presence of the transport pathways should be accounted for in the vulnerability assessment and these pathways may include private water wells, unused water wells, abandoned water wells, construction of underground services, subsurface excavations, pits and quarries. The vulnerability of an area may be increased from low, to medium or high and from medium, to high based on the presence of transport pathways.~~

~~The Technical Rules indicate that the following factors should be considered when evaluating whether the vulnerability of an area is increased:~~

~~Hydrogeological conditions;~~
~~Type and design of any transport pathways;~~
~~The cumulative impact of any transport pathways; and~~
~~The extent of any assumptions used in the assessment of the vulnerability of the groundwater~~

Transport Pathways in the Drayton and Moorefield Wellhead Protection Areas

A review of water well records from the ~~MOE~~ MECP water well database and a field survey were conducted to identify wells within the Wellhead Protection Areas. The wells were then ranked based on their risk to the supply aquifer. The survey resulted in the identification of 32 water wells within the Drayton Wellhead Protection Areas and classified 18 of the wells as high risk wells.

Five water wells were identified in the Moorefield Wellhead Protection Areas and three were classified as high risk wells and had their locations field verified.

Septic systems are considered transport pathways as they can provide a conduit for contaminants to travel through the ground to the water table. Septic systems are generally built in the upper few metres of the sub-surface and consist of a tank and drainage tiles which distribute effluent allowing it to infiltrate back into the ground. In the case of thin confining layers or in unconfined aquifer conditions, these shallow penetrating systems may present a significant conduit for contaminants to the aquifer of concern. Both Drayton and Moorefield have municipal sewage collection systems, however septic systems may still be present that were used before servicing was available. In ground individual septic systems are assumed present at all rural residences outside of the serviced areas. The municipal aquifer for the Drayton and Moorefield water supply wells is a confined aquifer that are overlain by greater than 20 m of fine grained sediments. In this study individual septic systems are not considered to constitute a transport pathway due to their relatively shallow depth of penetration.

Utilities that are constructed in the sub-surface are potential transport pathways as the disturbed soil surrounding them can provide a pathway for contaminants to enter into the aquifer below. Utilities that may act as transport pathways include storm-water trunk sewers and sanitary infrastructure. The depth of excavation for the construction of utilities will determine the risk that the wells pose on the municipal supply aquifer. Since the aquifers used by the municipal supply wells are generally protected by an upper aquitard, the risk for transport pathways to be created due to utilities is low.

Surface water features can be considered transport pathways as they can create a short cut to the aquifer for contaminants, especially when the features are man-made such as man-made ponds, dugouts and aggregate extraction ponds. Based on the hydrogeology of the areas, the aquifer utilized by the municipal wells is protected by a thick aquitard, thus most constructed surface water features should have little to no connectivity with the regional aquifer.

Aggregate operations are defined as activities that involve the extraction of material from the surface and in the current study include both pits and quarries. Pits and quarries present a transport pathway as their creation serves to remove a potential layer or layers of protection from the regional aquifer. In some cases, these excavations may extend to below groundwater table in which case the pit or quarry is a direct conduit to the aquifer that the municipal source may be a part of.

As part of the current study aggregate operations have been mapped based on existing databases and the review of aerial photography and satellite imagery along with a windshield survey of the Wellhead Protection Areas. There were no aggregate operations located within the Wellhead Protection Areas.

Uncertainty of Transport Pathways within the Drayton and Moorefield Wellhead Protection Areas

In the Drayton and Moorefield Wellhead Protection Areas the aquifer vulnerability was modified to consider increases in vulnerability due to transport pathways. In this area only well locations were considered to increase the vulnerability of an area. To decrease the uncertainty in the location and risk of the wells mapped, a field verification survey was completed. This survey

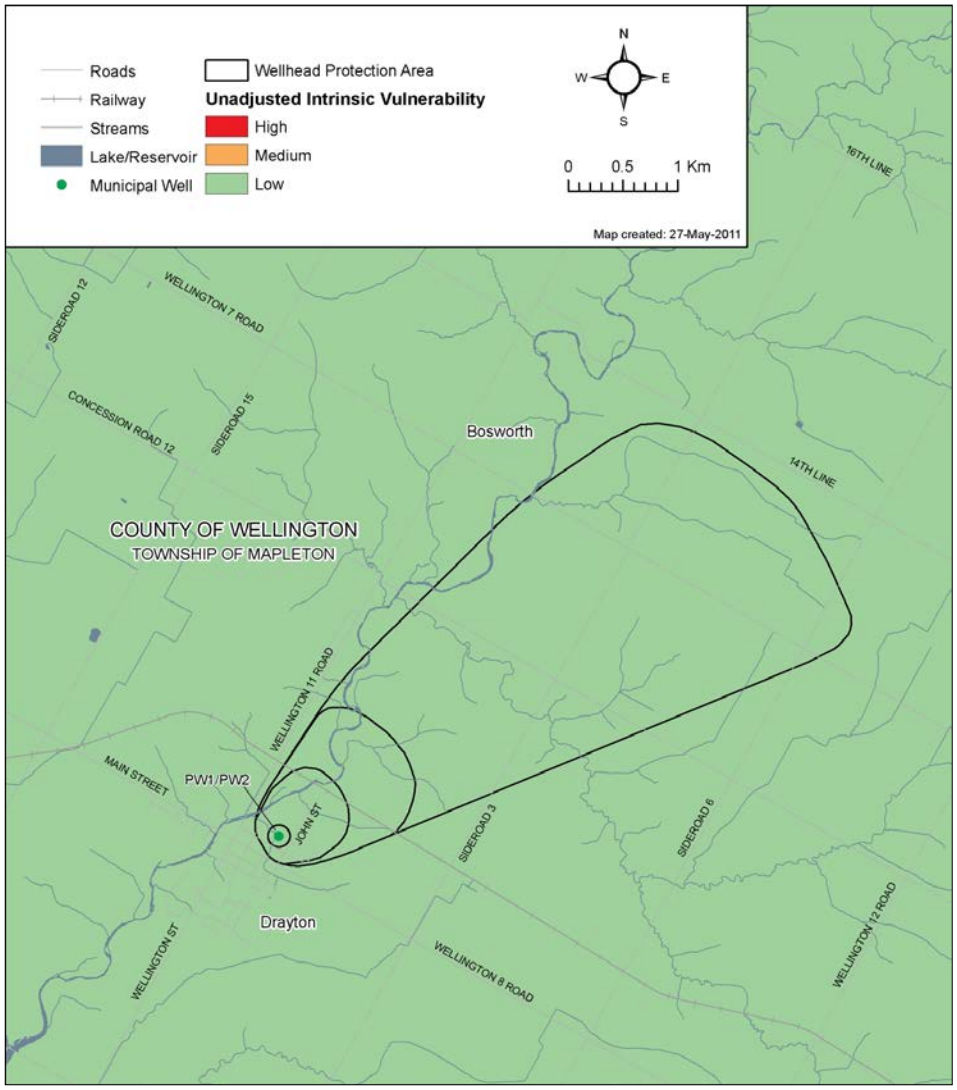
sought to verify the location of wells included in the various Wellhead Protection Areas and also evaluate the visual condition of these wells. The information gathered during the field verification exercise was used to update the project database, and formed the basis for the determination of the adjustment of vulnerability. When a well was not located in the field, the risk was assigned based on information provided in the MECP~~OE~~ well records.

Adjusted Vulnerability Scoring for the Drayton and Moorefield Wellhead Protection Areas

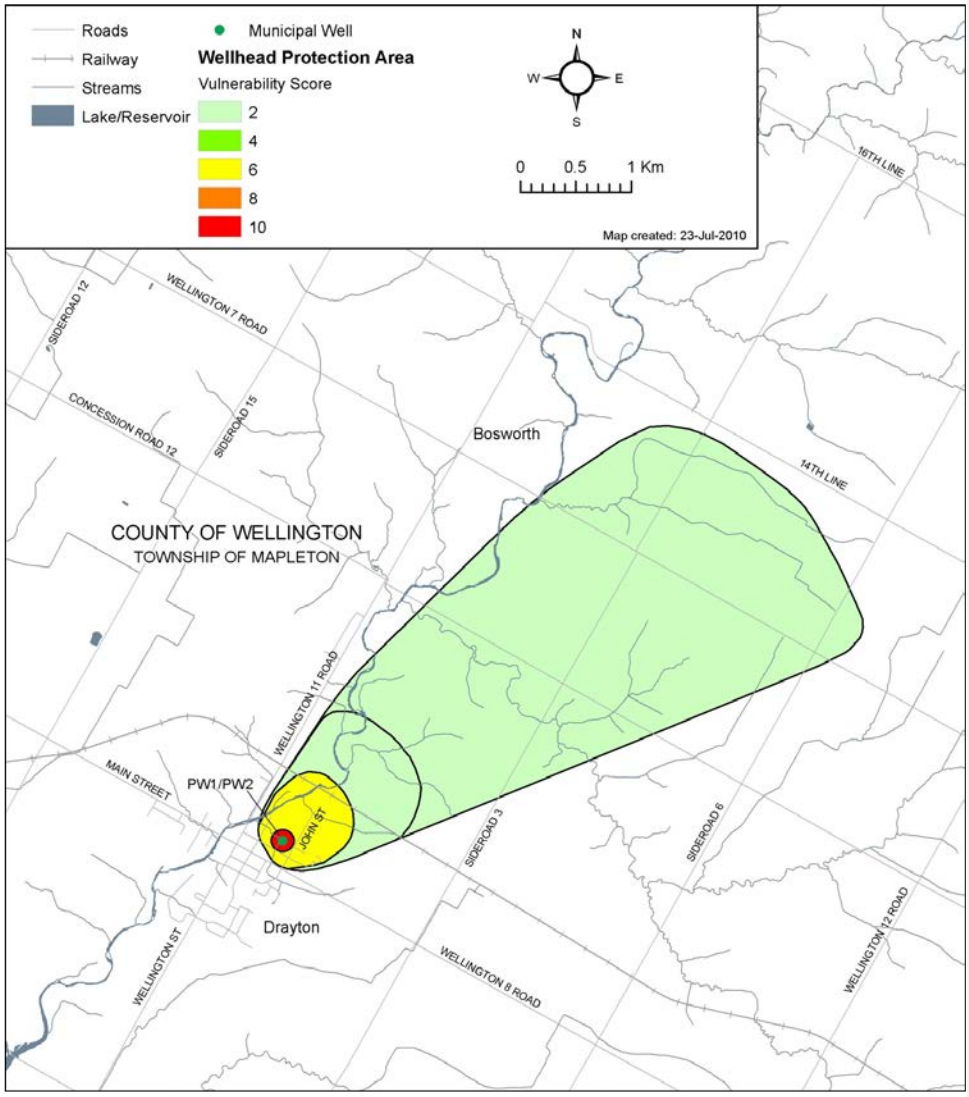
The increase in vulnerability as a result of transport pathways is generally limited to one rank (low to medium or medium to high) except in extreme cases where the constructed pathway is considered to increase the vulnerability of the aquifer from low to high. These cases may occur at pits or quarries that completely breach any low permeability layers overlying a deeper aquifer. To account for the presence of high risk wells as potential transport pathways, increases in vulnerability may be applied in areas with a high density of high risk wells.

For this evaluation a visual survey of high risk well locations was undertaken. Since there were no areas within the current study that had a significant concentration of high risk wells, no increases in vulnerability were made.

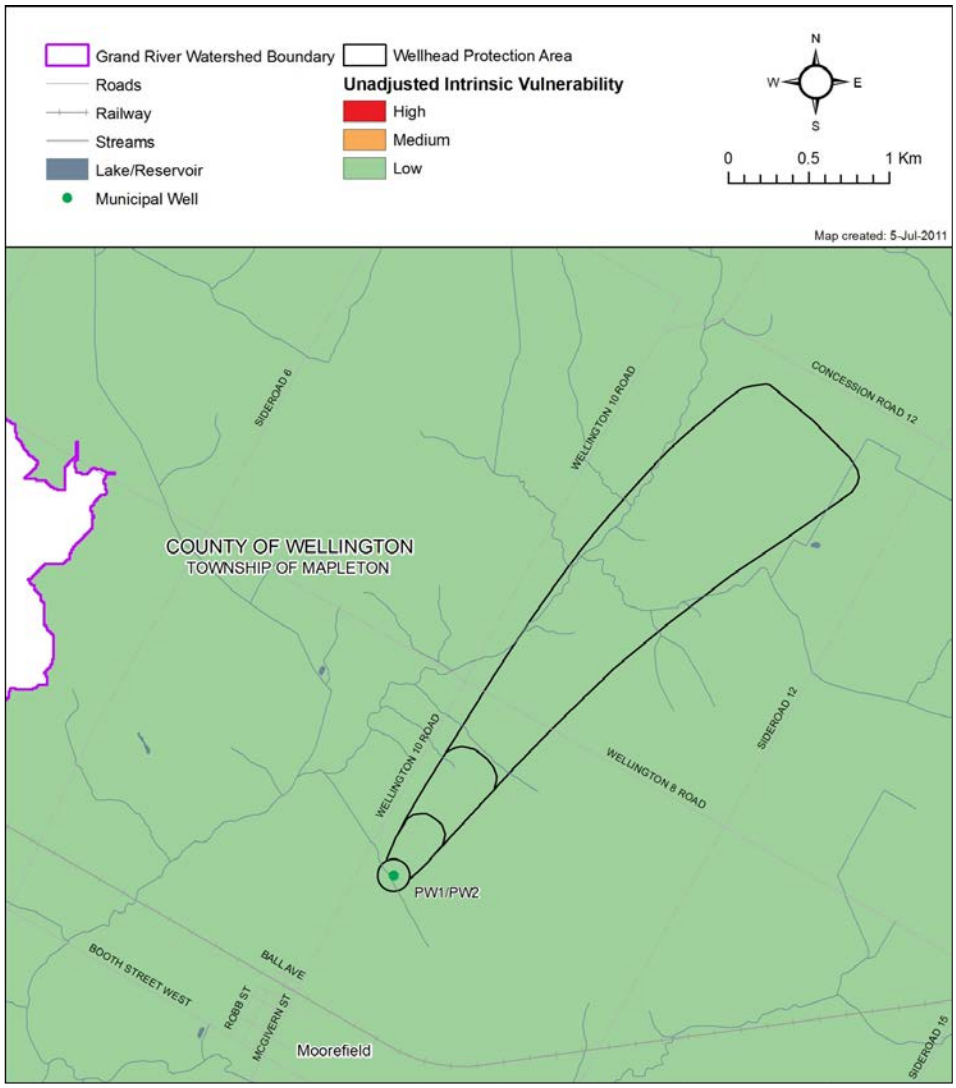
Map 6-13 Drayton Well Supply Unadjusted Intrinsic Vulnerability



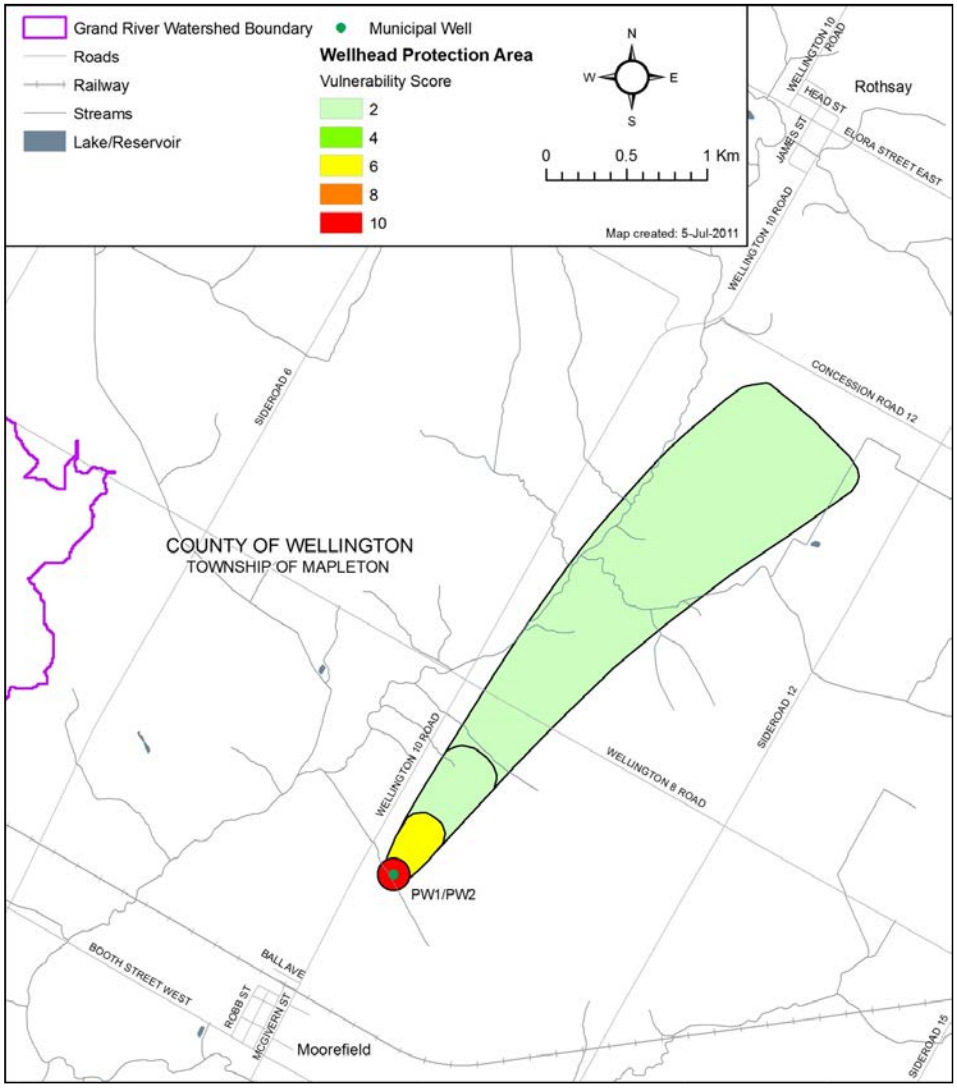
Map 6-14: Drayton Well Supply Wellhead Protection Area Final Vulnerability



Map 6-15 Moorefield Well Supply Unadjusted Intrinsic Vulnerability



Map 6-16: Moorefield Well Supply Wellhead Protection Area Final Vulnerability



Managed Lands within the Drayton and Moorefield Wellhead Protection Areas

Managed land is defined as any land to which there may be the application of agricultural source material (ASM), commercial fertilizer, or non-agricultural source material (NASM). Managed land includes the following crop land, fallow land, improved pasture, golf courses, sports fields and lawns. ~~Managed land can be broken down into two subsets; agricultural and non-agricultural managed land. Agricultural managed land includes cropland, fallow and improved pasture that may receive nutrients. Non-agricultural managed land includes golf courses (turf), sports fields, lawns (turf) and other built-up grassed areas that may receive nutrients (primarily commercial fertilizer). The storage, handling and application of pesticides, fertilizers and agricultural source material associated with managed land and agricultural activities can result in surface water runoff and potential pathogen and chemical contamination.~~

~~To measure the impacts from these activities on water supplies a methodology was developed by the GRCA in association with the MOE for the evaluation of percentage of managed land within each vulnerable area. The methodology is described in detail in a technical bulletin issued by the MOE in December 2009 and titled "Technical Bulletin: Proposed Methodology for Calculating Percentage of Managed Lands and Livestock Density for Land Application of Agricultural Source material, Non-Agricultural Source Material and Commercial Fertilizers."~~

~~Under the methodology the percentage of managed land is computed based on the land area associated with that vulnerable area or area within the vulnerable area. The percentage of agricultural managed lands are also evaluated separately from the overall managed land percentages. The overall percentage of managed land is used to categorize the landscape for further analysis of threats through the MOE provided Tables of Drinking Water Threats. For areas where the managed lands total accounts for less than 40% of the vulnerable area, the area is considered to have a low potential for nutrient application to cause contamination of drinking water sources. If the managed lands total accounts for 40% to 80% of the vulnerable area then the area is considered to have a moderate potential for nutrient application to cause contamination of drinking water sources. If the managed land total accounts for over 80% of the vulnerable area then the area is considered to have a high potential for nutrient application to cause contamination of drinking water sources.~~

Calculation of the percentage of managed lands was done in accordance with Technical Rule 16(9) (~~MOE, 2009b~~MOECC, 2017) with details outlined in Chapter 3. ~~Mapping the percentage of managed lands area is not required where the vulnerability score for an area is less than the vulnerability score necessary for the activity to be considered a significant threat. Therefore, the percentage of managed lands was only calculated where the vulnerability score in each Wellhead Protection Areas was 6 or greater.~~

The results of the calculations for managed lands are provided in **Table 6-13**, **Map 6-17** and **Map 6-18** for the Drayton and Moorefield Wellhead Protection Areas. A coding of N/A indicates that the vulnerability score in this area is 4 or less, and this area has not been assessed.

Table 6-13: Managed Lands Percentage in the Drayton and Moorefield Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Mapleton	Drayton	PW1/ PW2	48.04%	76.34%	N/A	N/A
	Moorefield	PW1/ PW2	44.82%	98.04%	N/A	N/A

Livestock Density within the Drayton and Moorefield Wellhead Protection Areas

Livestock density is used as a surrogate measure of the potential for generating, storing and land applying ASM as a source of nutrients in vulnerable areas. The livestock density is expressed as nutrient units per acre (NU/Acre) and is calculated based on the number of animals housed, or pastured on a farm unit that generate enough manure to fertilize an area of land. Detailed methods for livestock density calculations is outlined in Chapter 3.

~~Livestock density is combined with the results of the computations for percentage agricultural managed land for the purposes of determining the circumstances related to the application of nutrients and the associated threats as defined by the MOE's Table of Drinking Water Threats.~~

~~For the current study, both livestock density and the managed land calculations were completed by the GRCA. The methodology used was consistent with the methodology provided in the MOE publication "Technical Bulletin: Proposed Methodology for Calculating Percentage of Managed Lands and Livestock Density for Land Application of Agricultural Source material, Non-Agricultural". The resulting analyses and the interpreted data was incorporated into the project database and utilized for the subsequent evaluations of threat raking.~~The results of the calculations for livestock densities are provided in **Table 6-14, Map 6-19,** and **Map 6-20**, for the Drayton and Moorefiled Wellhead Protection Areas.

Table 6-14: Livestock Density (NU/acre) in the Drayton and Moorefield Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Mapleton	Drayton	PW1/ PW2	0	0.80	N/A	N/A
	Moorefield	PW1/ PW2	0	0	N/A	N/A

The coding of 0 indicates that there were no agricultural livestock barns to contribute nutrients and therefore the value for livestock density is 0. The coding of N/A indicates that the vulnerability score in this area is 4 or less, and this area has not been assessed.

Percent Impervious Surface Area in Wellhead Protection Areas

Road salt used during winter road maintenance is regarded as a threat. Generally road salt application rates depend on the amount of traffic a road receives and weather conditions.

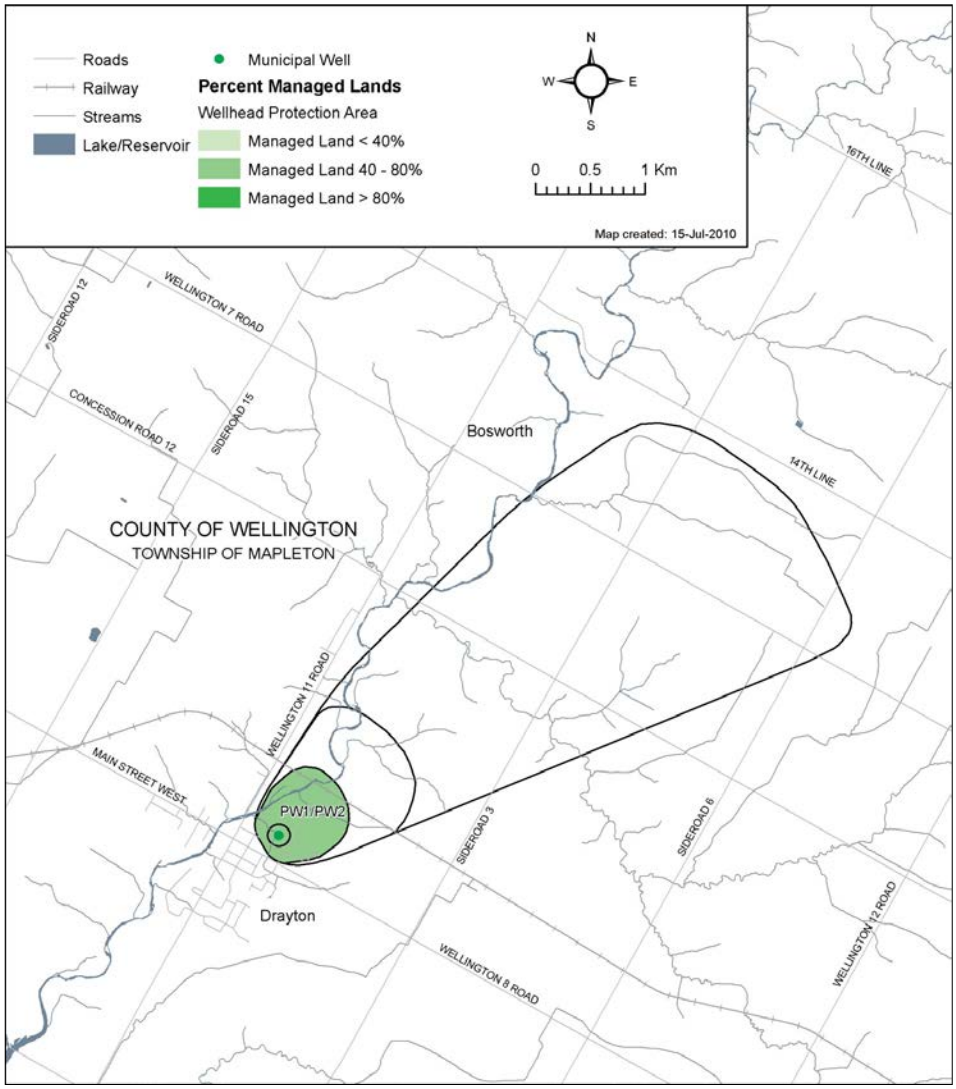
To calculate the percent impervious surface, information on land cover classification from the Southern Ontario Land Resource Information system (SOLRIS) was used. This provided land use information, including road and highway transportation routes, as continuous 15x15 metre grid cells across the entire Source Protection Area. All the cells that represent highways and other impervious surfaces used for vehicular traffic were re-coded with a cell value of 1 and all other land cover classifications were given a value of 0, to identify impervious surface areas.

Then, a focal sum moving window average was applied using the Spatial Analyst module of the ArcGIS software. For each 15x15 metre cell, the total number of neighbouring grid cells coded as impervious, within a 1x1 kilometre search area, was calculated. This total was then converted into the percentage of impervious surface by land area, using the area of each cell (225 sq. m) and the area of the moving window (1 sq. km). This provides a 1x1 kilometre moving window calculation of percent impervious surface, represented in 15x15 metre spatial increments. This dataset was calculated for the entire Source Protection Area, but was clipped to show those results only in the Wellhead Protection Areas and Intake Protection Zones. The analysis is more

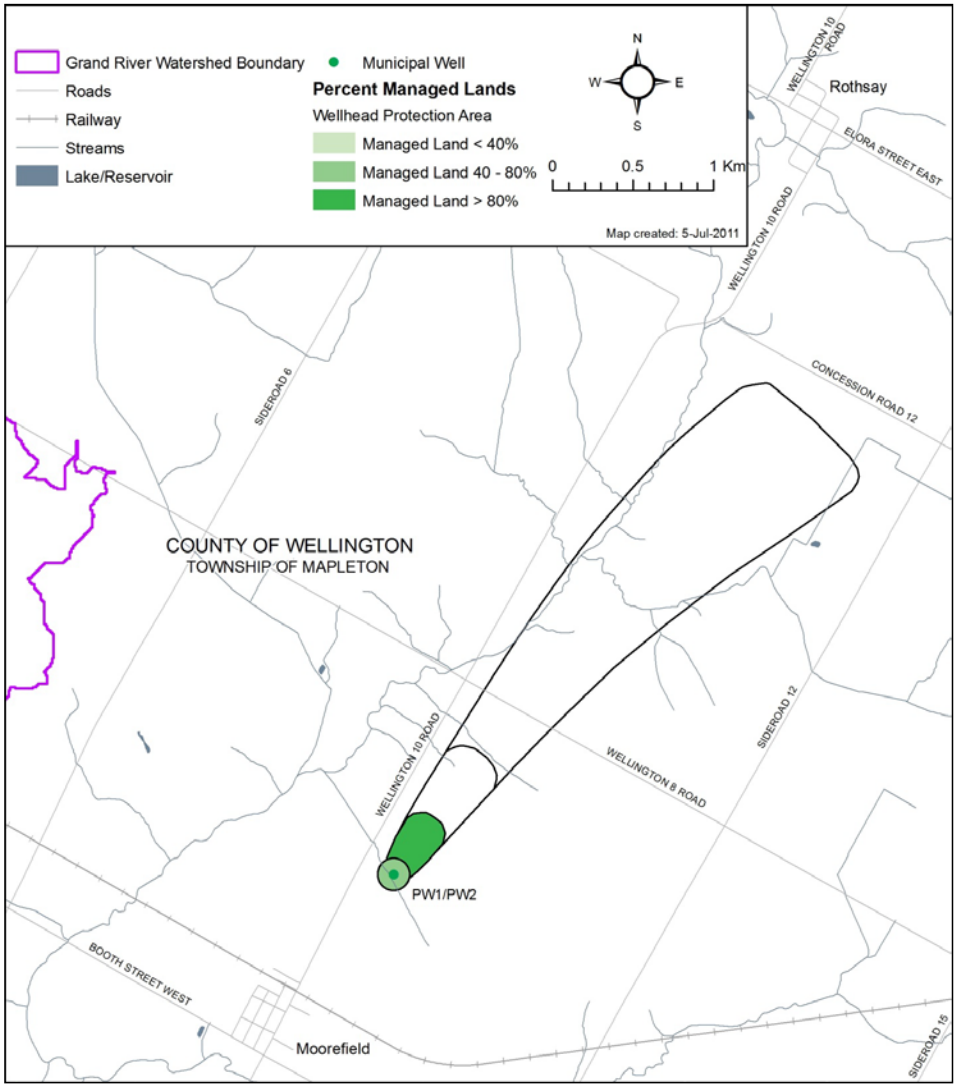
representative of road density and is better than the method described in the Technical Rules. As per Technical Rule 15.1, the Director has confirmed his agreement with the departure. The Director's letter of confirmation can be found in **Appendix B.**

The percentage of impervious surfaces is an indicator for the potential for impacts due to road salting. In areas with high levels of impervious surfaces (roads) there is an increased likelihood that road salts will be applied (**Map 6-21** and **Map 6-22).**

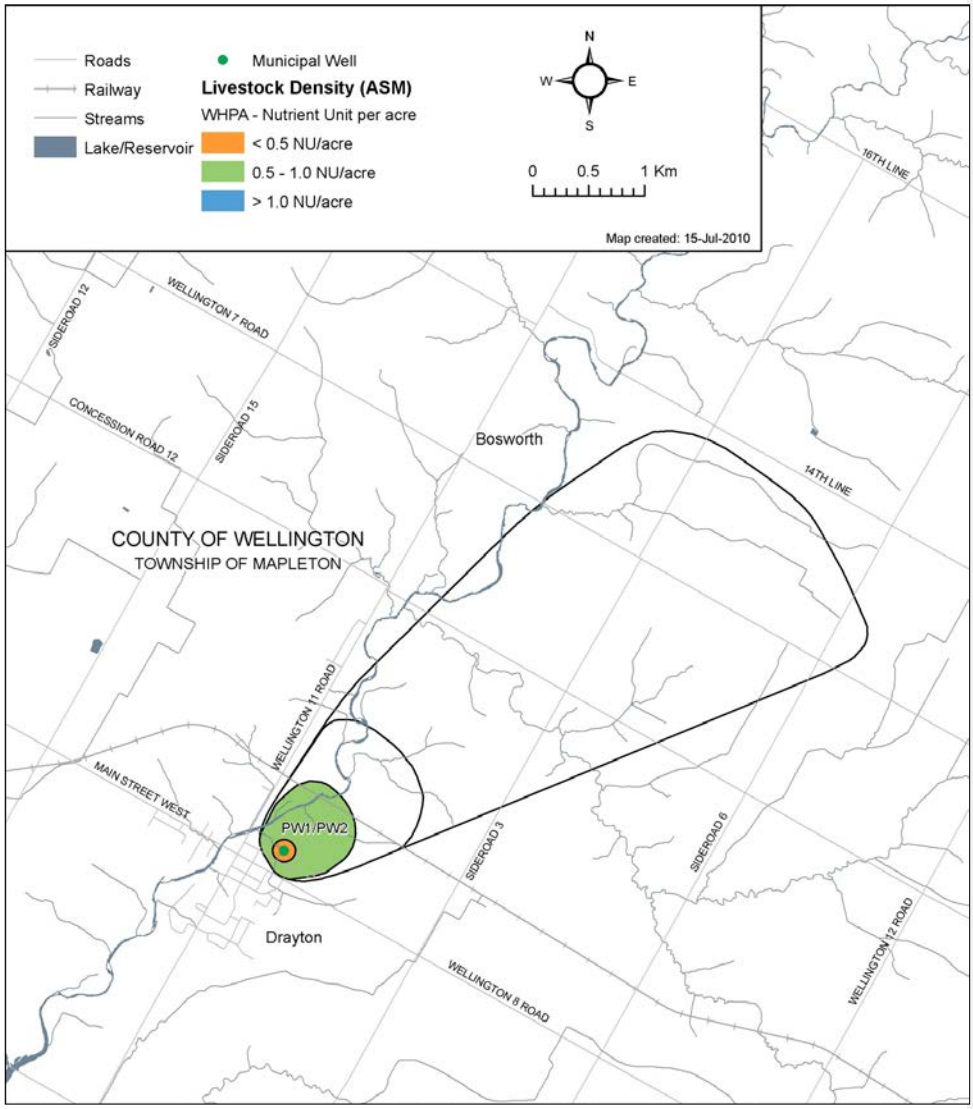
Map 6-17: Drayton Well Supply Percent Managed Lands



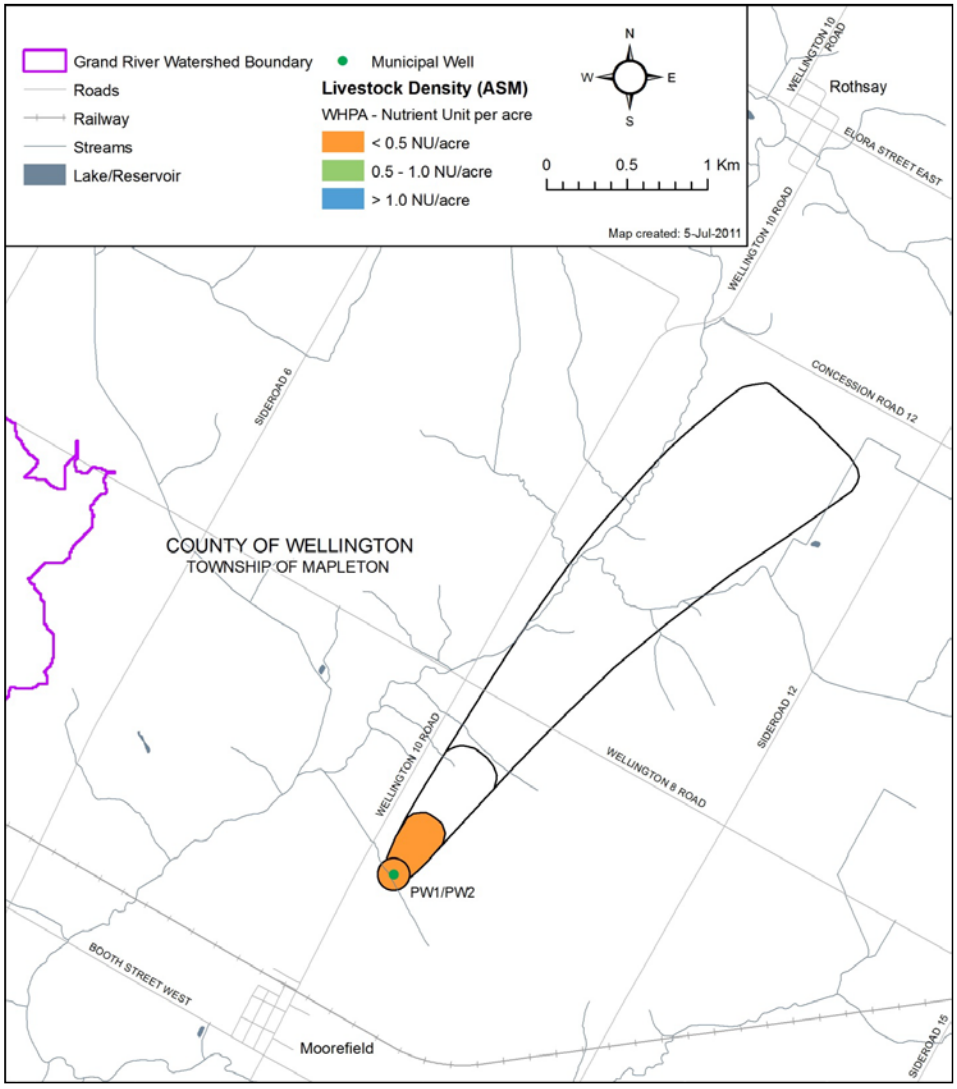
Map 6-18: Moorefield Well Supply Percent Manged Lands



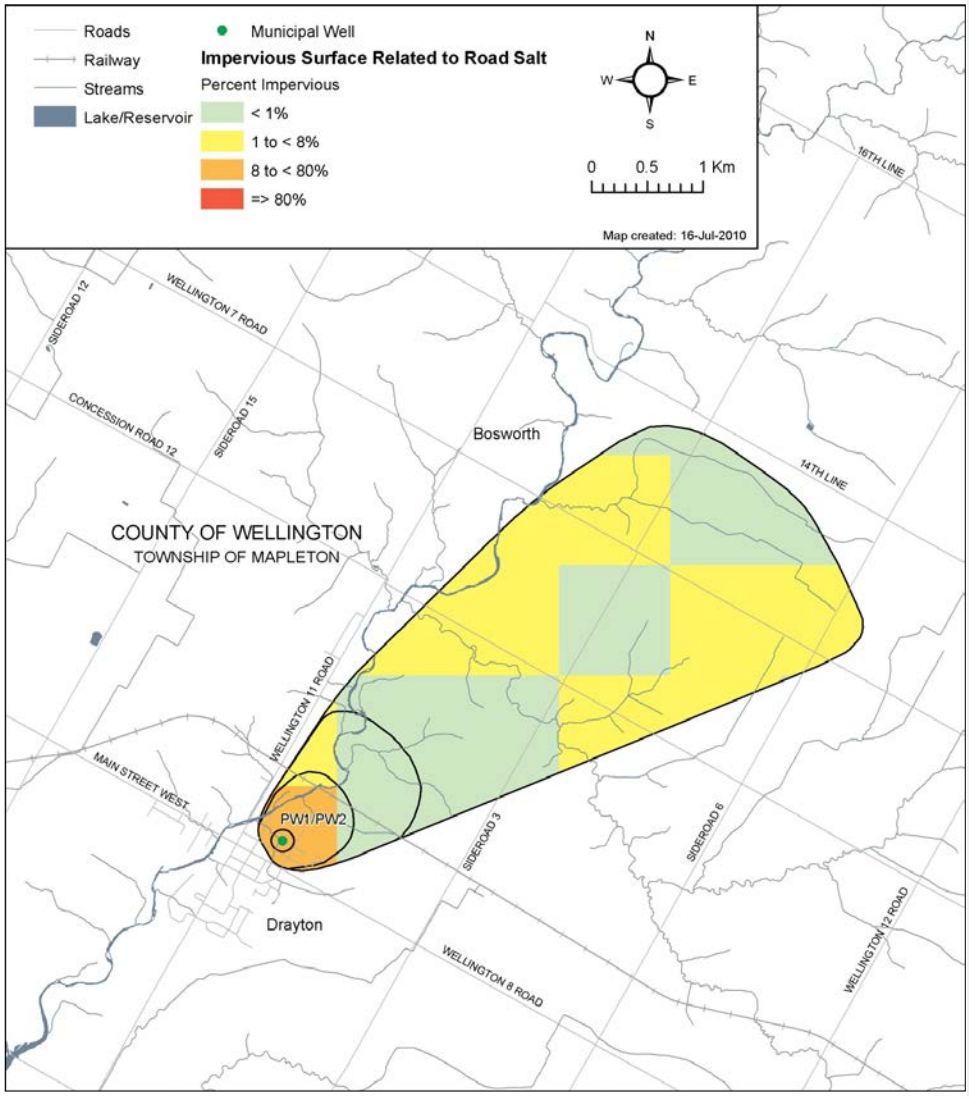
Map 6-19: Drayton Well Supply Livestock Density



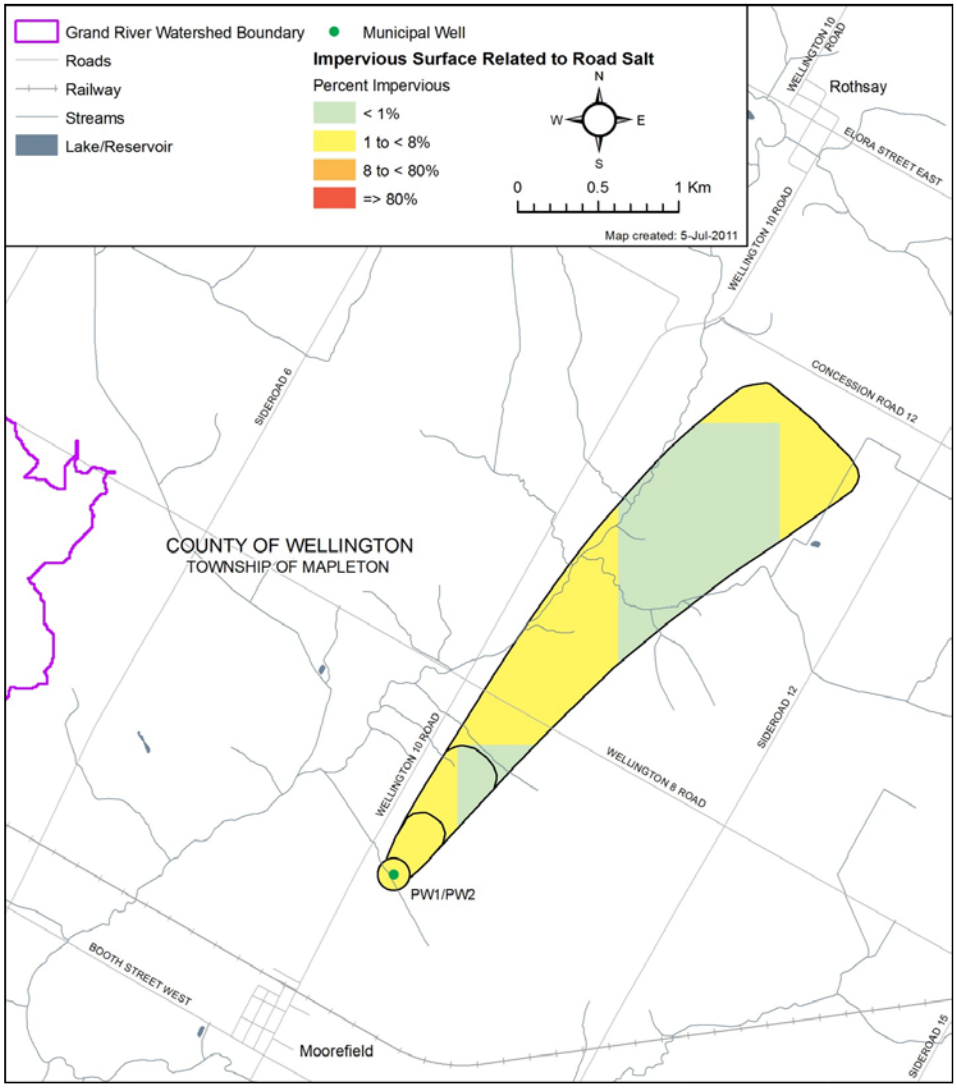
Map 6-20: Moorefield Well Supply Livestock Density



Map 6-21: Drayton Well Supply Percent of Impervious Surfaces



Map 6-22: Moorefield Well Supply Percent of Impervious Surfaces



6.2.4 Drinking Water Threats Assessment

The Ontario Clean Water Act, 2006, defines a Drinking Water Threat as "an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulation as a drinking water threat." A Prescribed Drinking Water Threats table in Chapter 3 lists all possible drinking water threats.

Identification of Significant, Moderate and Low Drinking Water Quality Threats for the Drayton and Moorefield Well Supply

The identification of a land use activity as a significant, moderate, or low drinking water threat depends on its risk score, determined by considering the circumstances of the activity and the type and vulnerability score of any underlying protection zones, as set out in the Tables of Drinking Water Threats available through www.sourcewater.ca. Information on drinking water threats is also accessible through the Source Water Protection Threats Tool: http://swpip.ca. The information above can be used with the vulnerability scores shown in **Map 6-14 and Map 6-16** to help the public determine where certain activities are or would be significant, moderate and low drinking water threats.

Table 6-15 provides a summary of the threat levels possible in the Drayton and Moorefield Well Supplies for Chemical, Dense Non-Aqueous Phase Liquid (DNAPL), and Pathogens. A checkmark indicates that the threat classification level is possible for the indicated threat type under the corresponding vulnerable area / vulnerable score; a blank cell indicates that it is not. The colours shown for each vulnerability score correspond to those shown in **Map 6-14 and Map 6-16**.

Table 6-15: Identification of Drinking Water Quality Threats in the Drayton and Moorefield Wellhead Protection Areas

Threat Type	Vulnerable Area	Vulnerability Score	Threat Classification Level		
			Significant 80+	Moderate 60 to <80	Low >40 to <60
Chemicals	WHPA-A	10	✔	✔	✔
	WHPA-B	6		✔	✔
	WHPA-C/D	2			
Handling / Storage of DNAPLs	WHPA-A/B/C	Any Score	✔		
	WHPA-D	2			
Pathogens	WHPA-A	10	✔	✔	
	WHPA-B	6			✔

6.2.5 Conditions Evaluation

Conditions are contamination that already exist and are a result of past activities that could affect the quality of drinking water. To identify a Condition, Part XI.3, Rule 126 of the Technical Rules (MOECC, 2017~~09~~), lists the following two criteria for groundwater sources:

- The presence of a non-aqueous phase liquid in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or wellhead protection area.

- The presence of a contaminant in groundwater in a highly vulnerable area, significant groundwater recharge area or a wellhead protection area, if the contaminant is listed in Table 2 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that Table.

The above listed criteria were used to evaluate potentially contaminated sites within the Drayton and Moorefield WHPAs to determine if such a Condition was present at a given site.

Conditions Evaluation for the Drayton and Moorefield Well Supply Systems
A review of available data regarding potential contamination included databases from the Ecolog ERIS results such as Record of Site Condition, MECP~~OE~~ Spills Database and Occurrence Reporting Information System.

There were no conditions identified in the Drayton and Moorefield Wellhead Protection Areas.

6.2.6 Drinking Water Quality Issues Evaluation

The objective of the Issues evaluation is to identify drinking water Issues where the existing or trending concentration of a parameter or pathogen at an intake, well or monitoring well would result in the deterioration of the quality of water for use as a source of drinking water. The parameter or pathogen must be listed in Schedule 1, 2 or 3 of the Ontario Drinking Water Quality Standards (ODWQS) or Table 4 of the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines (Technical Rules XI.1 (114 – 117)). Elevated concentrations of selected parameters that are naturally occurring or where effective treatment is in place are not considered drinking water Issues.

Once a drinking water Issue is identified, the objective is to identify all sources and threats that may contribute to the Issue within an Issue Contributing Area and manage these threats appropriately. If at this time the Issue Contributing Area can not be identified or the Issue can not be linked to threats then a work plan must be provided to assess the possible link.

If an Issue is identified for an intake, well or monitoring well, then all threats related to a particular Issue within the Issue Contributing Areas are as significant drinking water threats, regardless of the vulnerability.

Methodology for the Drinking Water Quality Issues Evaluation
As part of the Issues evaluation, a review of the available water quality data to assess whether any contaminants are impacting or have the potential to impact or interfere with the Township of Mapleton drinking water sources. This included the following steps:

- Collection of water quality data.
- Comparison of water quality data to the ODWQS to see if any parameters were in exceedance.
- Concentrations of parameters of consideration over time were plotted to evaluate if there were any increasing trends.

Data Sources for the Drinking Water Quality Issues Evaluation
All available water quality data for the Drayton and Moorefield water supply wells was collected and reviewed. This included hydrogeological studies, engineering reports and MECP~~OE~~ Annual reports for the water supply systems.

Drinking Water Issues Evaluation for the Drayton Well Supply
The following parameters were identified as parameters of consideration: hardness, iron, and organic nitrogen.

A hardness concentration of 226 mg/L was recorded at the Drayton wells in 2001 which exceeds the Operational Guideline (OG) of the ODWQS which ranges from 80-100 mg/L (MOE, 2006b). This level is typical of drinking water obtained from a dolostone bedrock source and is naturally occurring. Hardness in water is an aesthetic objective and is typically handled using household water softeners; hardness therefore should not interfere with the use of water from these sources.

A sample from the Drayton well collected in 2001 had an iron concentration of 0.374 mg/L. This exceeds the ODWQS guideline of 0.3 mg/L. Iron is an aesthetic objective, which means that it may impair the taste, smell or colour of the water or interfere with good water quality control practices. Elevated levels of iron are typical for bedrock aquifers. Since iron is an aesthetic objective and naturally occurring it is not considered a water quality Issue under Technical Rule 114.

Organic nitrogen has an operational guideline of 0.15 mg/L in drinking water. High levels may be caused by septic tank or sewage effluent contamination, which is often associated with odour and chlorine-worsened taste problems. Organic nitrogen compounds that contain amine groups can react with chlorine to severely reduce its disinfection power. An organic nitrogen concentration of 0.53 mg/L was measured in a 2001 sample from the Drayton well which exceeds the OG. This exceedance in organic nitrogen was identified in 2001 and was from a single sample. An exceedance has not been identified in any more recent sampling.

Water quality samples are collected routinely by OCWA (Ontario Clean Water Agency) licensed operators at the Drayton water systems. Data collected between July 2006 and December 2008 was reviewed as part of this study. Analysis completed were bacteriological analyses for *E. coli* and total coliforms for raw water, and nitrate and nitrate on treated water. The treatment process does not include nitrate reduction therefore the results should be reflective of raw water quality. No Issues with total coliforms or *E. coli* bacteria have been documented.

Summary of Water Quality Issues Evaluation for the Drayton Well Supply
Upon review of available current drinking water quality data there are no Issues under Technical Rule 114 for the Drayton Well Supply. Iron and hardness have elevated concentrations, however are naturally occurring and therefore do not reflect a deterioration of water quality. Neither of the above parameters is currently interfering or anticipated to interfere with the use of the groundwater as a source of drinking water.

Drinking Water Quality Issues Evaluation for the Moorefield Well Supply
The following parameters were identified as parameters of consideration: hardness, iron, and organic nitrogen.

Organic nitrogen has an operational guideline of 0.15 mg/L in drinking water. High levels may be caused by septic tank or sewage effluent contamination, which is often associated with odour and chlorine-worsened taste problems. Organic nitrogen compounds that contain amine groups can react with chlorine to severely reduce its disinfection power. The Moorefield Well also had an exceedance of organic nitrogen in 1995, however a sample collected in 2002 did not exceed the ODWQS (Burnside, 2002a). There are no other dates for which organic nitrogen was sampled for in the data reviewed making it difficult to know if it was only a single occurrence.

Water quality samples are collected routinely by OCWA (Ontario Clean Water Agency) licensed operators at the Moorefield water system. Data collected between July 2006 and December 2008 was reviewed as part of this study. Analysis completed were bacteriological analyses for *E. coli* and total coliforms for raw water, and nitrate and nitrate on treated water. The treatment process does not include nitrate reduction therefore, the results should be reflective of raw water quality. No Issues with Total Coliforms or E. coli bacteria have been documented.

Summary of Water Quality Issues Evaluation for the Moorefield Well Supply
Upon review of available current drinking water quality data there are no Issues under Technical Rule 114 for the Moorefield Well Supply. Iron and hardness have elevated concentrations, however are naturally occurring and, therefore, do not reflect a deterioration of water quality as per Rule 114 of the Technical Rules (~~MOE, 2009b~~MOECC, 2017).

Limitations and Uncertainty for the Drinking Water Quality Issues Evaluation for the Drayton and Moorefield Well Supply Systems

The water quality data reviewed includes data from 1995 to 2008. This is a limited time span making it difficult to identify trends, especially when not all parameters were sampled during each year. It is also noted that there is no monitoring well water quality data available. Monitoring wells are only monitored for water levels as part of PTTW requirements.

6.2.7 Enumeration of Significant Drinking Water Quality Threats

~~The Technical Rules (MOE, 2009b) require an estimation of the number of locations at which an Activity is a significant drinking water threat and the number of locations at which a Condition resulting from past activity is a significant drinking water threat.~~

The threats enumeration was compiled using the data from various sources that were reviewed as part of this study. Following the preliminary research, field assessments were used to verify and complete the threats inventory process. As a conservative measure no effort to include the impact of management techniques that may be employed at any threat location was considered. It can therefore be concluded that the level of uncertainty associated with this enumeration is high. A re-evaluation of the prioritized threats is required if the level of uncertainty associated with the current results is to be reduced.

Data Sources for the Enumeration of Significant Drinking Water Quality Threats
The threats inventory was compiled using the data and information sources outlined below. All threats were recorded in a database provided by the MECP~~OE~~.

EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS) is a national database service, which provides specific environmental and real estate information for locations across Canada. A review of all available provincial, federal and private environmental databases was requested for the areas within a radius around the wells that included the outer edge of the WHPA-D. As a result, the search included data to the west of the Wellhead Protection Areas. The search included the following databases:

Federal Government Source Databases

- National PCB Inventory 1988-June 2004
- National Pollutant Release Inventory 1994-2004
- Environmental Issues Inventory System 1992-2001
- Federal Convictions 1988-January 2002

- Contaminated Sites on Federal Land June 2000-2005
- Environmental Effects Monitoring 1992-2004
- Fisheries & Oceans Fuel Tanks 1964-September 2003
- Indian & Northern Affairs Fuel Tanks 1950-August 2003
- National Analysis of Trends in Emergencies System (NATES) 1974-1994
- National Defense & Canadian Forces Fuel Tanks Up to May 2001 National Defense & Canadian Forces Spills March 1999-February 2005
- National Defense & Canadian Forces Waste Disposal Sites 2001,2003
- National Environmental Emergencies System (NEES) 1974-2003
- Parks Canada Fuel Storage Tanks 1920-January 2005
- Transport Canada Fuel Storage Tanks 1970-May 2003

Provincial Government Source Databases

- Certificates of Approval 1985-September 2002
- Ontario Regulation 347 Waste Generators Summary 1986-2004
- Ontario Regulation 347 Waste Receivers Summary 1986-2004
- Private Fuel Storage Tanks 1989-1996
- Ontario Inventory of PCB Storage Sites 1987-April 2003
- Compliance and Convictions 1989-2002
- Waste Disposal Sites – MOE CA Inventory 1970-September 2002
- Waste Disposal Sites – MOE 1991
- Historical Approval Inventory Up to October 1990
- Occurrence Reporting Information System 1988-2002
- Pesticide Register 1988-August 2003
- Wastewater Discharger Registration Database 1990-1998
- Coal Gasification Plants 1987, 1988
- Non-Compliance Reports 1992(water only), 1994-2003
- Ministry Orders 1995-1996
- Aggregate Inventory Up to May 2005
- Abandoned Aggregate Inventory Up to September 2002
- Abandoned Mines Inventory System 1800-2005
- Record of Site Condition 1997-September 2001
- Ontario Oil and Gas Wells (1999-Oct 2004; 1800-May 2004 available for 14 select counties)
- Drill Holes 1886-2005
- Mineral Occurrences 1846-October 2004
- Environmental Registry 1994-July 2003

Private Sources Databases

- Retail Fuel Storage Tanks 1989-June 2005
- Canadian Pulp and Paper 1999, 2002, 2004, 2005
- Andersen's Waste Disposal Sites 1930-2004
- Scott's Manufacturing Directory 1992-2005
- Chemical Register 1992,1999-June 2005
- Canadian Mine Locations 1998-2005
- Oil and Gas Wells October 2001-2005

- Automobile Wrecking & Supplies 2001-June 2005
- Anderson's Storage Tanks 1915-1953
- ERIS Historical Searches, March 1999-2005

Items identified within the Drayton Wellhead Protection Area include one landfill site, the Drayton Water Supply System and two registered waste generators. The Occurrence Reporting Information System documented a sewage spill due to a force main break, however the location was not given (EcoLog ERIS, 2006a).

No items were identified by the search within the Moorefield Well Wellhead Protection Area (EcoLog ERIS, 2006b).

Municipal Parcel Assessment Codes

Data from the Municipal Property Assessment Corporation (MPAC) was obtained from the GRCA. This data classifies parcels by land use and is generally used by Municipalities for tax purposes. For this reason it is a fairly up to date and a reliable source of information to identify land uses on a parcel basis. The data obtained was used for land use classification where other data was not available and for servicing information such as whether the parcel has water or sanitary services. The MPAC data was also useful in identifying agricultural land types.

Aerial Photo Interpretation

Historical aerial photographs (1978 and 2000) were obtained from the University of Waterloo Map and Design Library and reviewed to identify land use changes and potential high-risk activities such as waste disposal sites within the Wellhead Protection Areas. Current aerial photography of the Wellhead Protection Areas was obtained from the GRCA Watershed Ortho-imagery (2006).

Site Reconnaissance and Inspection

A drive-by roadside inspection of the Wellhead Protection Areas was completed in 2006 to verify and compliment the dataset compiled during the records review portion of the assessment. The inspection consisted of a fence line/roadside documentation of the properties and their land uses included in the Wellhead Protection Area.

Sanitary Sewers

Drayton and Moorefield are serviced with sanitary sewers. The wastewater for Drayton and Moorefield is conveyed via sanitary sewers to storage lagoons at the Drayton Wastewater Pollution Control Plant southwest of Drayton. The plant is approved to handle 750 m^3/day of wastewater (MOE, 2008a). The sewers and their connections that transport the wastewater are considered threats as there is the potential for leaks to occur.

According the to the Certificate of Approval (4150-7JDP55), sanitary sewers within the Drayton Wellhead Protection Area are located on John Street, Wood Street, Robin Drive, Elm Street and Main Street (MOE, 2008a). There are no sanitary sewers within the Moorefield Wellhead Protection Area. The sewage pumping station and lagoons are located outside of both of the Wellhead Protection Areas.

Septic Systems

Within the Wellhead Protection Areas, septic systems are assumed to be used at all rural homes and buildings outside of the serviced areas. Septic systems that are not properly maintained can contribute to pathogen and chemical contamination in ground water. To identify properties with septic systems MPAC data was used to identify properties that had a building on it and were not municipally serviced. These parcels were assumed to have a septic system.

Significant Drinking Water Quality Threats in the Drayton Wellhead Protection Areas

The lands within the Drayton Wellhead Protection Areas are used dominantly for agricultural activities with some residential and municipal uses on the north edge of the town of Drayton. Within WHPA-B there is residential housing, a large municipal park and fairgrounds, a church, the Municipal works yard, a school bus yard, an auto body shop, a manufacturer of fabricated metal products and a commercial business. The municipal works yard contained two underground storage tanks, one unmarked above ground storage tank and a large empty storage dome for sand.

The remainder of the Wellhead Protection Area consisted of agricultural and natural lands. Several livestock operations for chickens, swine and beef were observed during the inspection. Sizes of farms ranged from small barns to large intensive livestock operations. Cash crops such as soy, corn and grains were commonly planted on the fields in the zone. Rural residential properties were observed within WHPA-D. It is assumed that these homes have septic systems and water wells. Some private above-ground storage tanks (ASTs) for propane or other heating fuel were observed at these homes. No quarries or gravel pits were noted within the Wellhead Protection Area during the site inspection. The Bosworth landfill is located within the WHPA-D but is no longer in operation.

~~As per the Technical Rules (MOE, 2009b), the enumeration of significant threats is required for the completion of the Assessment Report.~~ **Table 6-16** summarizes the significant drinking water quality threats identified in the Drayton Wellhead Protection Areas in Drayton.

Table 6-16: Significant Drinking Water Threats in the Drayton Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	4	WHPA-A
2	Sewage System or Sewage Works- ~~Septic~~ Onsite Sewage Systems	1	WHPA-A
	Sewage System or Sewage Works- Sanitary Sewers and related pipes	1	WHPA-A
15	Handling and Storage of Fuel	1	WHPA-A
16	Handling and Storage of Dense Non-Aqueous Phase Liquids	7	WHPA-A WHPA-B
17	Handling and Storage of Organic Solvents	4	WHPA-A
Total Number of Activities		**18**	
Total Number of Properties		**7**	

Table 6-16: Significant Drinking Water Threats in the Drayton Wellhead Protection Areas			
PDWT[1] #	**Threat Subcategory[2]**	**Number of Activities**	**Vulnerable Area**

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Significant Drinking Water Quality Threats in the Moorefield Wellhead Protection Areas

A drinking water quality threat is defined as a chemical or pathogen contaminant that poses a potential risk to the drinking water sources (MOE, 2006a). Threats are considered to be of two main types; threats related to current land use practices (activities) and threats related to pre-existing circumstances (conditions). Both of these threat types are described in the following sections.

Significant threats to the Moorefield groundwater supply were assessed through the development of a desktop land use inventory.

A site inspection of the Moorefield Wellhead Protection Areas confirmed that the majority of land use is agricultural. The Moorefield Water Supply wells are located within the Town of Moorefield municipal lot, which also contains municipal office buildings, a fire department building, a maintenance garage and a salt storage building. Surrounding the wells is land used for cash crops such as hay, soy and corn. Within the Wellhead Protection Areas, there are a total of five residential and/or farm properties.

~~As per the Technical Rules (MOE, 2009b), the enumeration of significant threats is required for the completion of the Assessment Report.~~ **Table 6-17** summarizes the significant threats identified in the Moorefield Wellhead Protection Areas in the Township of Mapleton.

Table 6-17: Significant Drinking Water Threats in the Moorefield Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	1	WHPA-A
2	Sewage System or Sewage Works- Sanitary Sewers and related pipes	1	WHPA-A
3	Application of Agricultural Source Material to Land	2	WHPA-A
10	Application of Pesticides to Land	2	WHPA-A
15	Handling and Storage of Fuel	1	WHPA-A
16	Handling and Storage of DNAPLs	1	WHPA-A
17	Handling and Storage of Organic Solvents	1	WHPA-A
Total Number of Activities		**9**	

Table 6-17: Significant Drinking Water Threats in the Moorefield Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
Total Number of Properties		**3**	

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Limitations and Uncertainty for the Enumeration of Significant Drinking Water Supply Threats for the Drayton and Moorefield Well Supply Systems

In this study a number of databases were used to create the threats inventory database. All databases have an error associated with them, whether it applies to the spatial or attribute information. The accuracy of the databases used depends on the source, the age of the information and the scale at which the spatial information was recorded. In this study, to decrease some of the error in the database information a field reconnaissance was completed to confirm the data when possible.

The determination of land use activities used a series of assumptions which have an uncertainty associated to them. For this enumeration, it was assumed that any possible threats associated with an activity were present and that all potential chemicals were present. The circumstances and quantity for each threat were assigned based on available knowledge such as typical storage practices, typical chemical quantities and typical waste disposal practices for that particular land use activity.

Based on the uncertainty involved in the assumptions and data used, the uncertainty for threats enumeration has been classified as high, but this level of uncertainty is expected in desk top study. With regards to the location of the threats, however, there is low uncertainty as most locations were field verified.

6.3 Township of Centre Wellington

6.3.1 Centre Wellington Well Supply

Two municipal groundwater systems are located within the Township of Centre Wellington: the Village of Elora and the Town of Fergus. Both Elora and Fergus obtain their water supply from municipal wells located within the village and town but the systems are connected. The serviced area is shown on **Map 6-23.** Together the two water systems are referred to as the Centre Wellington Well Supply, as presented in **Table 6-18**. The number of residents using municipal water is estimated to be 20,600 ~~. 12,893 in Fergus and 5,202 in Elora~~. The Township of Centre Wellington owns and operates the water supply system.

Table 6-18: Municipal Residential Drinking Water System Information for the Township of Centre Wellington in the Grand River Source Protection Area (Centre Wellington Well Supply)

DWS Number	DWS Name	Operating Authority	GW or SW	System Classification[1]	Number of Users served[2]
220000086	Centre Wellington Well Supply	Township of Centre Wellington	GW	Large Municipal Residential	~~18,095~~20,600

[1] as defined by O. Reg. 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002.*
[2] Centre Wellington Well Supply ~~2008~~ 2018 Annual System Reports (O.Reg 170/03)

Elora Well Supply

The water supply system for Elora consists of three bedrock wells referred to as E1, E3 and E4 (**Table 6-19**). Well E2 is no longer used due to water quality issues (iron) and potential interference with other municipal wells. As such, E2 has been decommissioned in accordance with Ontario Regulation 903.

Table 6-19: Municipal Production Wells in the Elora Well Supply

Well	Well Field	Depth of Well (m)	Depth of Casing (m)	Purpose	Status
E1	Elora	130	19.8	Production	In Regular Use
~~E2~~	~~Elora~~	~~N/A~~	~~N/A~~	~~Production~~	~~Decommissioned~~
E3	Elora	122	29.2	Production	In Regular Use
E4	Elora	128	25	Production	In Regular Use

The water takings allowed for each well is governed by Permit to Take Water No. 2823-7QEH3C. A summary of the permitted taking and ~~the average takings over the period 2006 – 2008~~ the rates used to delineate Elora WHPAs are summarized in **Table 6-20**.

Table 6-20: Municipal Production Wells Pumping in the Elora Well Supply

Well	Permit to Take Water (L/day)	Rate Used to Delineate WHPA (L/day)
E1	1,740,960	1,50~~12~~0,000
E3	1,963,000	900~~81~~,000
E4	1,227,000	1,200~~27~~,000

~~Only well E1 pumps close to the permitted capacity. Pumping rates at E3 are restricted due to potential interference effects on nearby private wells.~~

~~There is a monitoring well (61 m deep with casing to 26 m) near E4 used for monitoring purposes.~~

Fergus Well Supply

The water supply system for Fergus consists of six bedrock wells referred to as F1, F2, F4, F5, F6 and F7 (**Table 6-21**). Well F3 is no longer used due to potential interference with other municipal wells and reduced capacity. As such, F3 has been decommissioned in accordance with Ontario Regulation 903.

Table 6-21: Municipal Production Wells in the Fergus Well Supply

Well	Well Field	Depth of Well (m)	Depth of Casing (m)	Purpose	Status
F1	Fergus	79.6	19.9	Production	In Regular Use
F2	Fergus	76.5	3.6	Production	Well Not in Use
~~F3~~	~~Fergus~~	~~N/A~~	~~N/A~~	~~Production~~	~~Decommissioned~~
F4	Fergus	129.5	80.5	Production	In Regular Use
F5	Fergus	124.4	31.1	Production	In Regular Use
F6	Fergus	122.5	33.4	Production	In Regular Use
F7	Fergus	138.7	47.2	Production	In Regular Use

Well F2 in Fergus has been identified as GUDI (Groundwater Under the Direct Influence of surface water) and there is a potential for surface water from the Grand River to migrate to the well. It should be noted that Well F2 has not been used for municipal supply since June 2003 as a result of water quality concerns associated with the GUDI status of the well and limited pumping rates imposed on this well due to interference with nearby private wells (Stantec, 2010).

The water taking allowed for each well is governed by Permit to Take Water No. 2823-7QEH3C. A summary of the permitted taking and the rates used to delineate Fergus WHPAs ~~the average takings over the period 2006 – 2008~~ are summarized in **Table 6-22**.

Table 6-22: Municipal Production Wells Pumping in the Fergus Well Supply

Well	Permit to Take Water (L/day)	Rate Used to Delineate Wellhead Protection Area (L/day)
F1	1,832,947	~~974,000~~1,300,000
F2	490,140	~~630~~400,000
F4	1,963,911	1,~~113~~200,000
F5	1,963,872	~~736,000~~1,000,000
F6	1,963,872	~~870,000~~1,300,000
F7	1,962,000	~~1,961,000~~1,600,000

~~Well F4 pumps close to the permitted capacity. Pumping rates at some of the other wells (F2) are restricted due to potential interference effects on nearby private wells, water quality deterioration in some wells (F2, F6) when pumped at higher rates and incapability of some wells (F5) to produce water at higher rates.~~

~~There is a sentry well (29 m deep with casing to 2 m) near F1 that is used for monitoring purposes.~~

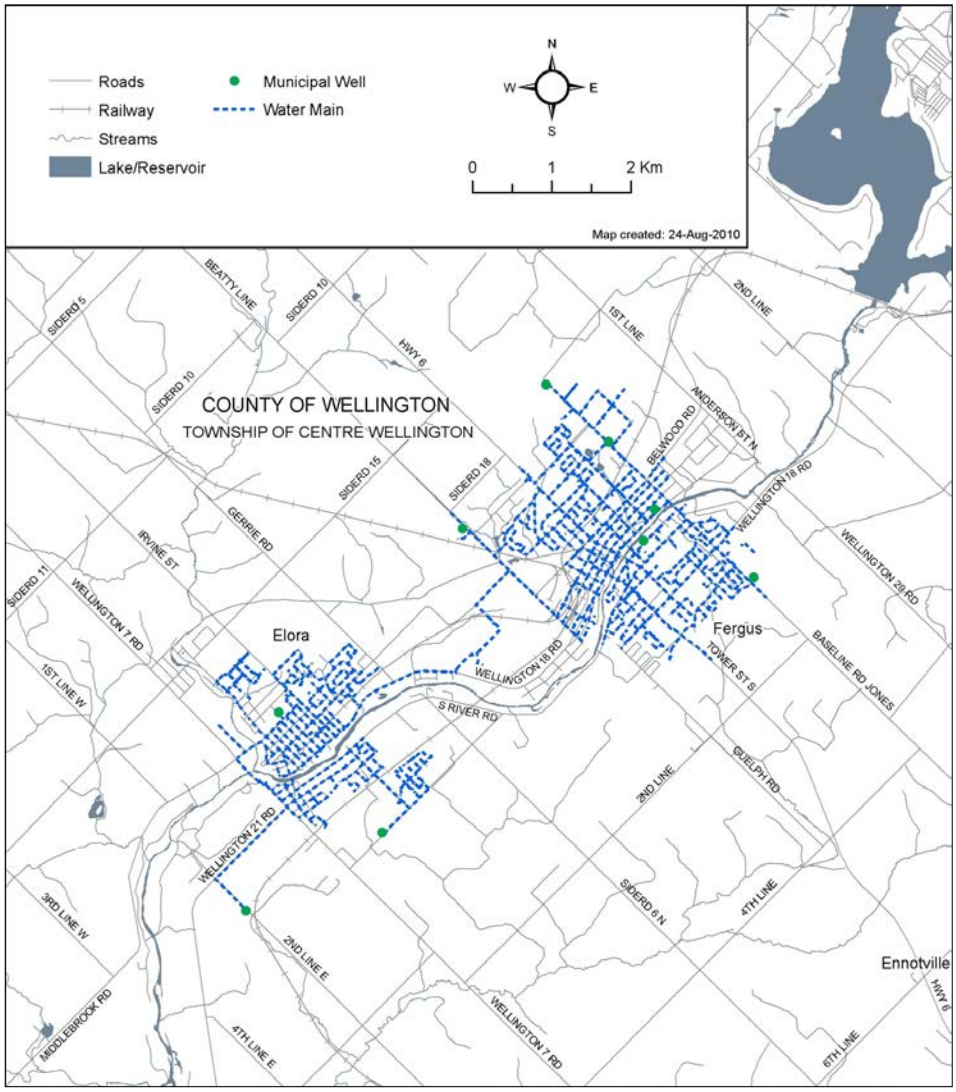
Table 6-23 summarizes the average annual and monthly pumping rates for all wells in the Centre Wellington Well Supply.

Table 6-23: Annual and Monthly Average Pumping Rates for Centre Wellington Well Supply

Well or Intake	Annual ~~Avg.~~ Taking[1] (m^3/~~d~~)	Monthly Total~~Average~~ Taking[1] (m^3/~~d~~)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Elora Well System													
E1	316,707~~10~~ ~~92~~	33,828 ~~1404~~	32,236 ~~1452~~	27,459 ~~1043~~	20,506 ~~1205~~	24,730 ~~1333~~	~~1~~22,94 2~~170~~	25,802 ~~1495~~	30,920 ~~1447~~	26,544 ~~1269~~	23,278 ~~661~~	23,096 ~~66~~	~~562~~25 ,~~366~~
E3	264,474~~21~~ ~~9~~	22,198 ~~160~~	26,743 ~~312~~	~~109~~24, 926	21,064 ~~177~~	20,888 ~~228~~	21,442 ~~237~~	24,732 ~~83~~	22,859 ~~220~~	21,929 ~~134~~	19,285 ~~237~~	20,413 ~~476~~	17,99 5~~255~~
E4	92,092~~291~~	8,916~~7~~ ~~9~~	99~~51~~	7,333~~3~~ ~~61~~	7,670~~1~~ ~~89~~	11,490 ~~35~~	13,313 ~~206~~	10,957 ~~77~~	7,220~~1~~ ~~2~~	6,798~~2~~ ~~17~~	7,360~~6~~ ~~29~~	2,984~~9~~ ~~42~~	7,953 ~~697~~
Fergus Well System													
F1	266,322~~67~~ ~~2~~	18,694 ~~769~~	20,757 ~~411~~	24,769 ~~514~~	27,160 ~~482~~	33,234 ~~533~~	32,371 ~~398~~	26,925 ~~590~~	17,703 ~~811~~	17,318 ~~798~~	16,198 ~~952~~	13,754 ~~857~~	17,43 9~~949~~
F4	373,135~~14~~ ~~07~~	27,601 ~~1455~~	25,944 ~~1452~~	27,219 ~~1305~~	19,652 ~~1434~~	20,615 ~~1404~~	26,522 ~~1436~~	34,055 ~~1435~~	35,520 ~~1432~~	39,203 ~~1396~~	40,491 ~~1479~~	38,014 ~~1281~~	38,30 0~~1375~~
F5	135,800~~40~~ ~~2~~	10,044 ~~401~~	7,280~~4~~ ~~47~~	5,571~~4~~ ~~42~~	11,481 ~~493~~	11,134 ~~411~~	15,598 ~~411~~	18,165 ~~233~~	14,998 ~~258~~	13,720 ~~384~~	9,956~~3~~ ~~51~~	5,390~~5~~ ~~85~~	12,46 4~~408~~
F6	188,777~~3~~ ~~83~~	28,19 3~~361~~	18,66 8~~314~~	18,48 7~~386~~	8,143 ~~366~~	8,014 ~~385~~	19,68 9~~387~~	10,88 1~~274~~	21,61 5~~363~~	11,27 1~~483~~	10,40 6~~393~~	17,78 0~~384~~	15,62 9~~505~~
F7	224,916~~3~~ ~~28~~	16,32 3~~217~~	14,54 7~~569~~	17,61 7~~541~~	21,60 0~~523~~	24,89 9~~527~~	15,65 0~~618~~	25,74 0~~593~~	20,91 3~~130~~	25,27 2~~149~~	17,45 6~~79~~	17,42 0~~0~~	7,449 ~~0~~

[1] source: Centre Wellington annual summary reports, based on 2018~~08~~ monitoring data

Map 6-23: Centre Wellington Well Supply Serviced Areas



6.3.2 Vulnerability Analysis

~~***Delineation of Wellhead Protection Areas***~~

~~The delineation of Wellhead Protection Areas (WHPAs) represents the foundation of a municipal groundwater protection strategy. Wellhead Protection Areas associated with the municipal water supply represent the areas within the aquifer that contribute groundwater to the well over a specific time period. According to the *Clean Water Act, 2006* Technical Rules (November 2009), four Wellhead Protection Areas are required, one a proximity zone and the three others time-related capture zones:~~

- ~~WHPA-A 100 m radius from wellhead~~
- ~~WHPA-B 2-year Time of Travel (TOT) capture zone~~
- ~~WHPA-C 5-year Time of Travel capture zone~~
- ~~WHPA-D 25-year Time of Travel capture zone~~

~~In addition, two other capture zones may be added to a wellhead protection area when a well obtains groundwater that is under the direct influence of surface water (is a GUDI well).~~

- ~~WHPA-E The time required for an operator to respond to a spill event (e.g. a 2-hour Time of Travel), in accordance with the rules of delineating an Intake Protection Zone 2.~~
- ~~WHPA-F Encompasses any sources of Issues identified with the well if the source of the Issue is located outside of WHPAs A,B,C,D or E, in accordance with the rules of delineating an Intake Protection Zone 3.~~

Modelling Approach for the Centre Wellington Well Supply

The numerical modelling completed for this current study utilized the FEFLOW groundwater flow model developed for the Centre Wellington Tier 3 Assessment (Matrix 2018a). In the area of Centre Wellington, the Tier 3 model was calibrated to long-term average water levels, to a baseflow estimate at Irvine Creek, and to transient conditions observed during a shutdown/pumping test over a period of 6 weeks in 2012. The Tier 3 model is the most current tool available to delineate capture zones for Centre Wellington's municipal wells. The Tier 3 model version used incorporates estimated current pumping for non-municipal wells, existing land use, and long term average climate and groundwater recharge.

The capture zones and WHPAs delineated for this study are based on a Base Case scenario model and three alternative uncertainty scenarios developed as part of a sensitivity analysis.

Base Case Scenario

The calibrated Centre Wellington Tier 3 FEFLOW model is referred to as the Base Case scenario. The municipal pumping rates assigned for WHPA delineation are consistent with the wellfield capacity estimates being developed for the "Centre Wellington's Water Supply Master Plan" project (AECOM 2018). The final pumping rates applied in the Base Case model are provided in **Table 6-20** and **Table 6-22**. Effective porosity was assigned as 0.2 for the overburden, 0.03 for bedrock aquifers and 0.01 for bedrock aquitards. These values are consistent with those used for similar geologic units for the neighbouring City of Guelph and Township of Guelph/Eramosa Tier 3 Assessment (Matrix, 2017b).

Sensitivity Scenarios

A sensitivity analysis was completed to estimate the effects of model parameter uncertainty on the size and shape of the predicted capture zones. Some groundwater flow model input parameters have greater uncertainty than others. The sensitivity analysis involved adjusting the calibrated Base Case model parameters and evaluating the change in particle tracking results used to delineate the capture zones.

The first sensitivity scenario tested a decrease in the effective porosity of the bedrock production aquifer from 0.03 to 0.01. A reduction in porosity leads to greater velocities and longer pathlines and time-of-travel capture zones. Sensitivity Scenario 2 included the lower porosity of Scenario 1 and also included increasing the production bedrock aquifer conductivity values by a factor of 1.5. The magnitude of this increase was considered appropriate to maintain a reasonable calibration, and the value was based on insights gained when calibrating the Tier 3 model (Matrix 2018a). Sensitivity Scenario 3 also included the lower porosity of Scenario 1 and included decreasing the confining bedrock aquitard conductivity values by 20%. The magnitude of this decrease was considered appropriate to maintain a reasonable calibration, and the value was based on insights gained when calibrating the Tier 3 model (Matrix 2018a).

Virtual particles can be released in a groundwater flow model and tracked forward or backward in time through the subsurface for various time intervals. The computed pathlines travelled by these particles are projected to the ground surface and plotted on a plan view map. Time-of-travel capture zones are subsequently created by drawing polygons around the well and the particle pathlines for specific time intervals. As such, capture zones represent the land areas beneath, which water and contaminants located at and below ground surface may migrate toward a well within a specified period.

~~A groundwater flow model was developed to identify time-of-travel (TOT) capture zones for the municipal well fields as part of the County of Wellington Groundwater Protection Study (Golder, 2006). The model was constructed using the three dimensional model MODFLOW. The numerical model code, MODFLOW, is a well-documented and widely used numerical model that is based on the finite difference method for simulation of groundwater flow system.~~

~~The Wellington County Groundwater Protection Study Model was used to delineate the Wellhead Protection Areas for the Centre Wellington Well Supply based on the pumping rates described below.~~

~~The pumping rates used to determine the Wellhead Protection Area are based on the allocated quantity of water. The allocated quantity of water is the lesser of:~~

- ~~The maximum annual quantity of water that can lawfully be taken under the Permit to Take Water; or~~
- ~~The quantity of water that would have to be taken annually to meet committed demand of the system.~~

~~The pumping rates used in developing the Wellhead Protection Areas are based on a forecast of anticipated future groundwater use as determined in the Wellington County Groundwater Protection Study through discussions with Wellington County staff and Centre Wellington Water Works staff. The pumping rates give consideration to local population growth statistics as contained in the County of Wellington Official Plan; operational constraints within each system; and potential servicing of currently un-serviced areas.~~

~~It should be noted that Centre Wellington is currently undertaking a Master Water Supply Plan. When this plan is completed, the forecast pumping rates may need to be revised to reflect the future growth for the area and anticipated pumping.~~

~~To develop the time of travel capture zones, groundwater particles were released at the pumping wells in the model and backward tracked (using MODPATH) towards their source of recharge. At each well location, particles were released in all hydrostratigraphic units "open" to the wellbore. The time-related pathlines that are subsequently generated by the model from this analysis are then overlain and a single time of travel capture zone drawn around the "family" of pathlines generated at each well. To check the capture areas generated from the backward tracking analysis (and in some cases to refine the time of travel outline produced) a series of forward tracking simulations were also completed. The resulting capture zone from this process represents the two-dimensional projection of the particle outlines to ground surface. Note that the capture zone developed in this manner does not imply that a contaminant, spilled or released at surface, would reach the water supply well within the specified 2-year, 5-year or 25-year travel times. While in some cases the aquifer (and water table) may be near ground surface and so the travel time down to the water table may be relatively short, for confined and deeper aquifers (i.e., typical of those found in Elora and Fergus), the travel times from the point of contaminant release within the capture zone may be considerably longer and/or the contaminant may never reach the pumping well(s).~~

~~The use of the MODFLOW groundwater model infers that the groundwater flow systems within the Township of Centre Wellington can be simulated as an "equivalent porous media" at the scale of the time-related capture zones under consideration. Under this assumption, the rate of groundwater flow towards a pumping well occurs as a function of the hydraulic gradient, the hydraulic conductivity of the aquifer, and the effective porosity of the aquifer. The use of equivalent porous media models is standard practice for sand and gravel (overburden) aquifers. The equivalent porous medium assumption has also been commonly applied for sedimentary bedrock aquifers of the type found in the Township of Centre Wellington. While groundwater flow (and solute transport) in these aquifers occurs primarily in the fractures and solution cavities, the use of an equivalent porous medium can still provide a reasonable approximation of the time of travel related capture zones of a bedrock supply well (in particular for longer travel times) provided the scale of observation is much greater than the scale of individual fractures and solution cavities, and consideration is given to the selection of a reasonable "effective" porosity. The effective porosity of the bedrock aquifer was assumed to be 1% and 5% in developing the WHPAs with 1% being used in the less permeable bedrock zones. This is considered to be a reasonably conservative estimate of effective porosity to use for the time of travel calculations and is consistent with typical values used in these calculations for other groundwater studies completed for similar aquifers within the province.~~

~~The capture zones developed from the numerical modelling approach described above are considered to represent reasonable "theoretical" estimates based on the available data. However, it should be recognized that following this approach, there will not be a unique solution to the model calibration process and therefore, there is inherently some uncertainty associated with the (subsequent) capture zones forecast by the calibrated groundwater model. These uncertainties stem (in part) from limitations in the available subsurface information and can be related to variability in the aquifer properties (e.g., hydraulic conductivity; porosity) or uncertainties with the conceptual model (e.g., groundwater surface water interactions; location of flow boundaries; recharge rates; continuity in aquitards; direction of regional groundwater flow).~~

~~To account for some of the uncertainty in the capture zones developed for the Township of Centre Wellington, a factor of safety is applied that effectively increases the spatial coverage of each time of travel related capture zone. The factor of safety is comprised of two components: in the first instance, using the pumping well as the reference point, the width and length of the capture zone is increased by 20% to account for some uncertainty in the hydraulic characteristics of the aquifer system supplying water to the well; secondly, and again using the pumping well as the reference point, the orientation of the capture zone is adjusted by 5 degrees (plus and minus) along its centreline which accounts for some uncertainty in the regional flow direction by increasing the width of the capture zone at increasing distances from the pumping well. The factor of safety approach to uncertainty described above is considered to provide a practical way to account for uncertainty in the scientific methods being used to generate the capture zones, and reflects the concept that the available data is typically concentrated around the pumping well and that the uncertainty in the hydrogeological understanding increases at increasing distances from the supply wells.~~

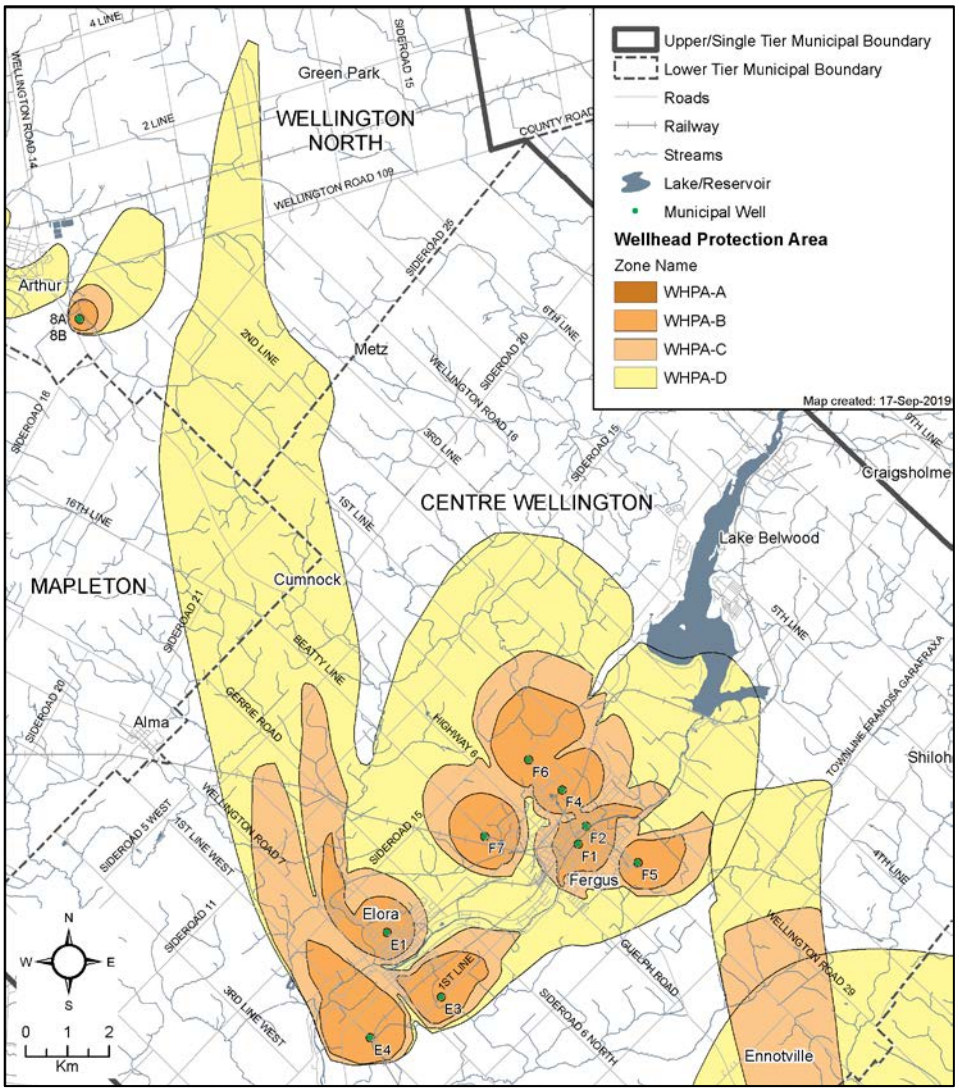
Delineation of Centre Wellington Wellhead Protection Areas

WHPA-A through WHPA-D were delineated for the nine Centre Wellington wells a~~A~~s seen in **Map 6-24**. ~~, the 25-year capture zones for the Elora wells merge together and extend approximately 15 km to the north in the direction (upgradient) of regional groundwater flow in the bedrock. The 25-year capture zones for the wells south of the Grand River extend northward beneath the Grand River. The land use overlying much of the 25 year capture zones is rural agricultural, although the entire urban area of Elora also lies within the capture zones.~~

The Elora WHPAs are elongated and extend towards the north (e.g., Well E1) and portions of others (i.e., Well E3) extend to the east. The WHPA-D extends approximately 25 km upgradient to the north. The Fergus WHPAs are more radial compared to the Elora WHPAs, with the WHPA-D extending approximately 7 km to the northeast.

~~As seen in **Map 7-26** the 25-year capture zones for most of the Fergus wells merge together and extend approximately 16 km to the north in the direction (upgradient) of regional groundwater flow in the bedrock. The 25 year capture zone for Fergus Well 5, located south of the Grand River, extends eastward for approximately 5 km. The land use overlying much of the 25-year capture zones is rural agricultural, although most of the urban area of Fergus also lies within the capture zones. Due to the close proximity of the wells there is some overlap of the Elora and Fergus Wellhead Protection Areas.~~

Map 6-24: Fergus and Elora Wells Wellhead Protection Areas



~~**Map 6-25: Fergus Wells Wellhead Protection Areas**~~

Delineation of WHPA-E for Centre Wellington – Fergus, Well F2

Well F2 in Fergus has been identified as GUDI ~~and~~ becasue there is a potential for surface water from the Grand River to migrate to the well. Consequently, WHPA-E was delineated for this well. Well F2 is located near the Grand River in Fergus approximately 4.3 km downstream of the Shand Dam. The location of F2 relative to the Grand River is shown on **Map 6-25.**

~~The Assessment Report Technical Rules state that WHPA-E is to be delineated in accordance with the rules for delineating an IPZ-2, as though the intake for the system were located at the point of interaction between surface and groundwater (if known) or a point within the waterbody closest to the well.~~ WHPA-E delineation for the F2 well in Fergus was based on a 2-hour time of travel under estimated high flow conditions and included appropriate setbacks on land, according to the Technical Rules. As the exact point of interaction between the Grand River and Well F2 is not known, WHPA-E was delineated from a point within the river adjacent to the well. A 2-hour response time, the minimum required by the Technical Rules, was deemed appropriate given the established protocol to quickly shut down the well in response to a spill and the fact that this supply well has not been used since June 2003.

The 2-hour time of travel in the Grand River upstream of the Well F2 was based on a statistical analysis of continuous flow monitoring data combined with dye tracer studies carried out at bankfull or near bankfull flow conditions. Continuous flow records for the Grand River were available from the Water Survey of Canada and Grand River Conservation Authority for the period from 1984 to 2009 and were used to calculate the 95th percentile of flow. Experience has shown that 95th percentile flow and bankfull conditions are not substantially different for natural watercourses. The 95th percentile flow was estimated to be 32 m^3/s.

A dye tracer study was carried out on April 28, 2009 at flows similar to the calculated 95th percentile flow and field observations indicated that water levels were at or near the top of bank (i.e. bankfull flow conditions). The results of the dye tracer study were used to calibrate a hydraulic model, which was used to scale up the time of travel to 95th percentile flow conditions. Under 95th percentile high flow conditions, it was estimated that the time of travel from the Shand Dam to Well F2 would be 100 minutes. This is 20 minutes less than the required 2 hour time of travel, therefore a semi-circular area within the reservoir upstream of the Dam was included in WHPA-E. The radius of the semi-circular area was conservatively estimated based on the minimum depth of water and the volume of water discharged from the reservoir at the 95th percentile flow for 20 minutes.

In accordance with the Technical Rules, WHPA-E also includes a setback on land to include the Conservation Authority Regulation Limit or 120 m, whichever is greater. Transport pathways were also included and accounted for in the delineation of WHPA-E. Several small tributaries, ditches and stormsewer outfalls that flow into the Grand River between Well F2 and the Shand Dam were identified. The WHPA-E was extended to incorporate portions of these pathways that may contribute water to the assumed intake point within a 2-hour time of travel as shown on **Map 6-25.** Detailed information on the areas draining to stormsewers was not available, therefore, it was conservatively assumed that all developed urban area draining toward the Grand River upstream of the assumed intake point was included in WHPA-E.

The technical study to delineate WHPA-E for Well F2 in Fergus is further described in the report *Wellhead Protection Area E Delineation and Vulnerability Scoring: Municipal Supply Well F2, Township of Centre Wellington* by Stantec Consulting Ltd. (2010).

Delineation of WHPA-F for Centre Wellington – Fergus, Well F2

WHPA-F was not delineated for the F2 well in Fergus as there were no Issues identified for this well. It should be noted that Well F2 has not been used for municipal supply since June 2003 as a result of water quality concerns associated with the GUDI status of the well and limited pumping rates imposed on this well due to interference with nearby private wells.

Intrinsic Vulnerability Scoring in Wellhead Protection Areas

Groundwater intrinsic vulnerability mapping for the Fergus and Elora wellfields was previously completed by EarthFX Inc. (2008) using the SAAT method. Golder (2010a) reviewed the vulnerability mapping and made adjustments based on hydrogeological knowledge at the WHPA scale. The intrinsic vulnerability was further refined in the Centre Wellington area by GRCA staff in May 2019. Smoothing (refinements) of the intrinsic vulnerability was done in areas where the existing vulnerability scoring was too complex to be implementable. This was done using the smooth line tool in ArcGIS (Polynomial Approximation with Exponential Kernel), with a 400m smoothing tolerance. Further manual adjustment was then made in a few minor areas to remove any tight loops created by the tool. The Elora and Fergus unadjusted and adjusted intrinsic vulnerability mapping is shown on **Map 6-26** and **Map 6-27**.

~~Following their delineation, the intrinsic vulnerability of the aquifer within each Wellhead Protection Area is assessed using one of the methods approved under the *Clean Water Act* Technical Rules. The resulting maps rank aquifer vulnerability as high, medium or low.~~

~~One method of assessing groundwater vulnerability is the surface to aquifer advection time (SAAT). The SAAT approach is described as "a direct estimate of the vertical travel time from the ground surface (or near ground surface) to the top of the aquifer (or top of the water table in and unconfined aquifer)". The intrinsic vulnerability derived from the SAAT method is expressed in units of time.~~

~~The SAAT time of travel has two components: 1) the unsaturated zone arrival time (UZAT); and 2) the water table to aquifer arrival time (WAAT). The UZAT is the time of travel from the surface to the water table and the WAAT is the time of travel from the water table to the aquifer of interest. The SAAT and UZAT are the same for unconfined aquifers. SAAT aquifer vulnerability mapping was completed for most of the Grand River Watershed as a separate project (Earthfx, 2008). A complete methodology is presented in the 2008 Earthfx report. This SAAT aquifer vulnerability mapping was used as the basis for the vulnerability scoring, although some Wellhead Protection Area scale adjustments to this mapping were made to account for local conditions in the Elora and Fergus Wellhead Protection Areas, as described later in this section.~~

~~The SAAT travel times were converted into aquifer vulnerability values based on Technical Rule IV.1 (38) as follows:~~

~~High Aquifer Vulnerability – SAAT less than 5 years;~~

~~Medium Aquifer Vulnerability – SAAT between 5 years and 25 years; and~~

~~Low Aquifer Vulnerability – SAAT greater than 25 years.~~

~~The watershed scale SAAT mapping was reviewed and adjusted at the Wellhead Protection Area scale through comparison of existing ISI mapping, surficial quaternary geology mapping (including bedrock outcrop locations) and cross sections throughout the Wellhead Protection Areas. The review and adjustments to the SAAT vulnerability mapping are further detailed in the draft technical memorandum Review and Refinement of the Grand River Conservation Authority's SAAT Vulnerability Mapping at the Wellhead Protection Area Scale (Golder, 2010b).~~

Identification of Transport Pathways and Vulnerability Adjustment

Following a review of the intrinsic~~initial~~ vulnerability scoring maps, an assessment of transport pathways was undertaken to determine whether adjustments to the vulnerability assessment were warranted. Technical Rules 39 – 41 address the general process of how transport pathways would increase vulnerability. Transport pathways for groundwater based drinking water systems include: wells (~~existing and abandoned~~current, unused, or abandoned), pits and quarries, mines, construction activities or deep excavations, storm water infiltration, septic systems, and ~~sanitary sewer~~buried municipal infrastructure.

The Technical Rules (MOECC, 2017) indicate that consideration should be given to the cumulative impact of any potential transport pathways; the impact of any discrete pathway should not be viewed in isolation. Therefore, following the assessment of risk for each feature, a density analysis was completed to determine where clusters of high risk pathways existed. A 50 m buffer was created around each of the high-risk pathways identified.

~~To evaluate the transport pathways, a review of water well records and previous pathway assessment (Blackport Hydrogeology Inc. and Triton Engineering Services, 2008) was conducted to identify transport pathways, but no on-site inspection of wells took place.~~

~~***Uncertainty of the Identification of Transport Pathways***~~

~~The transport pathway identification is a desktop analysis and involved only minor field verification or site visits to validate the information.~~

~~***Adjusted Vulnerability to Account for Transport Pathways***~~

~~At the completion of the transport pathways assessment, the Technical Rules allow investigators to modify the vulnerability scoring if there is a concern that the identified transport pathways within the Wellhead Protection Areas may increase the vulnerability of the aquifer beyond that represented by the intrinsic vulnerability. Modification of the vulnerability score is performed by increasing the vulnerability of the underlying aquifer vulnerability map from either a low to moderate value or moderate to high value. An initial aquifer vulnerability value of high cannot be increased.~~

Adjusted Vulnerability Scoring for the Centre Wellington Wellhead Protection Areas

Several data sources were reviewed to assess the relative risk of transport pathways to cross-cut natural protection over the municipal production aquifers in the Fergus and Elora WHPAs. Wells, buried municipal infrastructure, and septic systems were interpreted to warrant an update to vulnerability mapping. A total of 1,381 wells, 13.8 km of buried infrastructure, four lift stations, and 94 septic systems were identified as high-risk pathways. Where a high density of these pathways was identified, updates to the existing vulnerability mapping were recommended. These areas of transport pathway area of influence are identified on **Map 6-28.**

Following the adjustment of the vulnerability mapping based on the transport pathways assessment, vulnerability scoring was completed for Centre Wellington. The WHPAs for each well were overlain on the adjusted vulnerability mapping and scores were assigned. Final vulnerability scoring for the Fergus and Elora wellfields is shown on **Map 6-29**.

~~There have been no confirmed private well pathways, and as such, no increases to vulnerability due to the presence of private wells have been included. As well, no adjustments to the vulnerability were made due to septic systems and buried utilities as they most likely do not act~~

~~as significant transport pathways due to their shallow nature in relation to the deeper municipal aquifer and do not breach the lower permeable sediments.~~
~~As no adjustments were made to the vulnerability scoring, the final vulnerability scoring maps were prepared to provide an indication of the relative vulnerability of the aquifer within the Wellhead Protection Areas. Due to the proximity of the wells, the WHPAs are shown together for all of Centre Wellintongton on **Map 7-29** and on a smaller scale for the urban areas of Elora and Fergus on **Map 7-31**.~~

Vulnerability Uncertainty Assessment
The uncertainty analysis factors considered in this assessment follow Part I.4, Rule 14 of the Technical Rules (MOECC, 2017) and are detailed in **Table 6-24**.

Table 6-24: Uncertainty Analysis Factors and Ranking for WHPAs and Vulunerability Scores

Uncertainty Asssessment Factor	Uncertainty Designations	Description
14(1) The distribution, variability, quality, and relevance of data used in the preparation of the assessment report	Low	Good coverage of Ontario Ministry of Environment, Conservation and Parks (MECP) water well record data surrounding the Study Area as well as high-quality data local to the well fields and regionally. Water levels from multiple periods. Averaging of multiple water levels at individual wells was completed to best reflect most recent conditions.
14(2) The ability of the methods and models used to accurately reflect the flow processes in the hydrological system	Low	The groundwater flow model has been shown to reflect groundwater flow processes by representing water levels under long-term average and pumping conditions.
14(3) The quality assurance and quality control procedures applied	Low	Each step of the model development process relied on data that had been collected and/or reviewed by professional engineers or geoscientists. The development of the model was fully documented (Matrix 2018a) and that document was reviewed by leading academics and industry professionals for the purposes of fulfilling the requirements of the Act.
14(4) The extent and level of calibration and validation achieved for models used or calculations or general assessments completed	Low	The original Centre Wellington Tier Three model is a product of both steady-state and transient calibration efforts and the final parameters derived are both consistent with field observations and those that would be expected based on the conceptual model.
14(5) The accuracy to which the groundwater vulnerability categories effectively assess the relative vulnerability of the underlying hydrogeological features	High	The groundwater vulnerability mapping is based on the SAAT methodology completed by EarthFX (2008) and Golder (2010a); however, the hydrogeologic conceptual model of the Study Area was reworked as part of the Centre Wellington Tier Three Assessment (Matrix 2017a). The vulnerability mapping was not refined to reflect the current conceptual model. Further, an assessment of the differences between the current conceptual model, and the one that the 2008 vulnerability mapping is based on, has not been completed to verify whether the groundwater vulnerability categories still effectively assess the relative vulnerability of the underlying hydrogeological features.

Uncertainty in the delineation of the WHPAs was addressed through the simulation of multiple scenarios. The scenarios for WHPA delineation produced similarly shaped capture zones, which were all encompassed in the final WHPA delineation. Further, the reliability of the delineated WHPAs is supported by the reasonability of the calibrated model. The groundwater flow model is calibrated using model parameters that reflect hydraulic field tests and have values that are within expected ranges for the various hydrogeological units.

This results in a low uncertainty for the capture zone delineation. There is a low uncertainty rating associated with the time-of-travel delineation; however, there is a high uncertainty rating associated with the vulnerability mapping, which was not updated or reassessed using the current conceptual model (Matrix, 2017a). As a result, an uncertainty rating of high is assigned to the assessment of vulnerability of each WHPA. This high uncertainty is identified as a data gap and updates to the vulnerability mapping should be considered in the future.

Vulnerability Scoring in WHPA-E

Vulnerability analysis of WHPA-E includes consideration for both the area vulnerability and the source vulnerability as described in the Technical Rules. The two factors are multiplied to generate a vulnerability score for WHPA-E.

The area vulnerability factor for a WHPA-E is prescribed to be the same as IPZ 2, i.e. between 7 and 9. The source vulnerability factor for Well F2 has been assessed on the basis of Type C intake (i.e. assuming the well is hydraulically connected to an in-land river) and therefore was assumed to be in the range of 0.9 to 1.0.

The area vulnerability factor for Well F2 was assigned a value of 7 based on the following:

- Land area within WHPA-E is largely rural and undeveloped. While there is an area of low density residential, institutional and industrial development within WHPA-E, only 3 relatively small systems direct stormwater directly to the Grand River upstream of the well.
- There are only two minor road crossings of the Grand River within WHPA-E.
- Transport pathways that were identified for WHPA-E contribute relatively little flow compared to the Grand River.

These factors, taken together, suggest a low vulnerability of the source to contamination from spills, and, therefore, the lowest area vulnerability factor (7) was assigned to WHPA-E for Well F2.

According to the Technical Rules, the source vulnerability factor for a surface water intake takes into consideration the depth of the intake from the water surface, the distance from land and historical water quality concerns. For a WHPA-E, the first two factors do not apply as there is no particular relevance to a GUDI well that is likely drawing surface water from a distributed area, rather than a point and only a small portion of the water getting to the well originates from surface water.

There were no historical water quality concerns raised for Well F2 during the technical study. In addition, groundwater wells are known to be less vulnerable than surface water intakes to spills and other adverse conditions by virtue of the time delay between the surface water feature to the well, in-situ filtration through the soil and dilution of the surface water by groundwater from the rest of the well capture zone. For these reasons, the source vulnerability factor for Well F2 was assigned the lowest value, i.e. 0.9.

Combining the area and source vulnerability scores, the overall vulnerability score for the Well F2 WHPA-E is 6.3 (see **Table 6-25**).

Table 6-25: Vulnerability score summary for the Centre Wellington Well F2 WHPA-E.

Location	Intake Protection Zone	Area Vulnerability Factor	Source Vulnerability Factor	Vulnerability Score
Well F2	WHPA-E	7	0.9	6.3

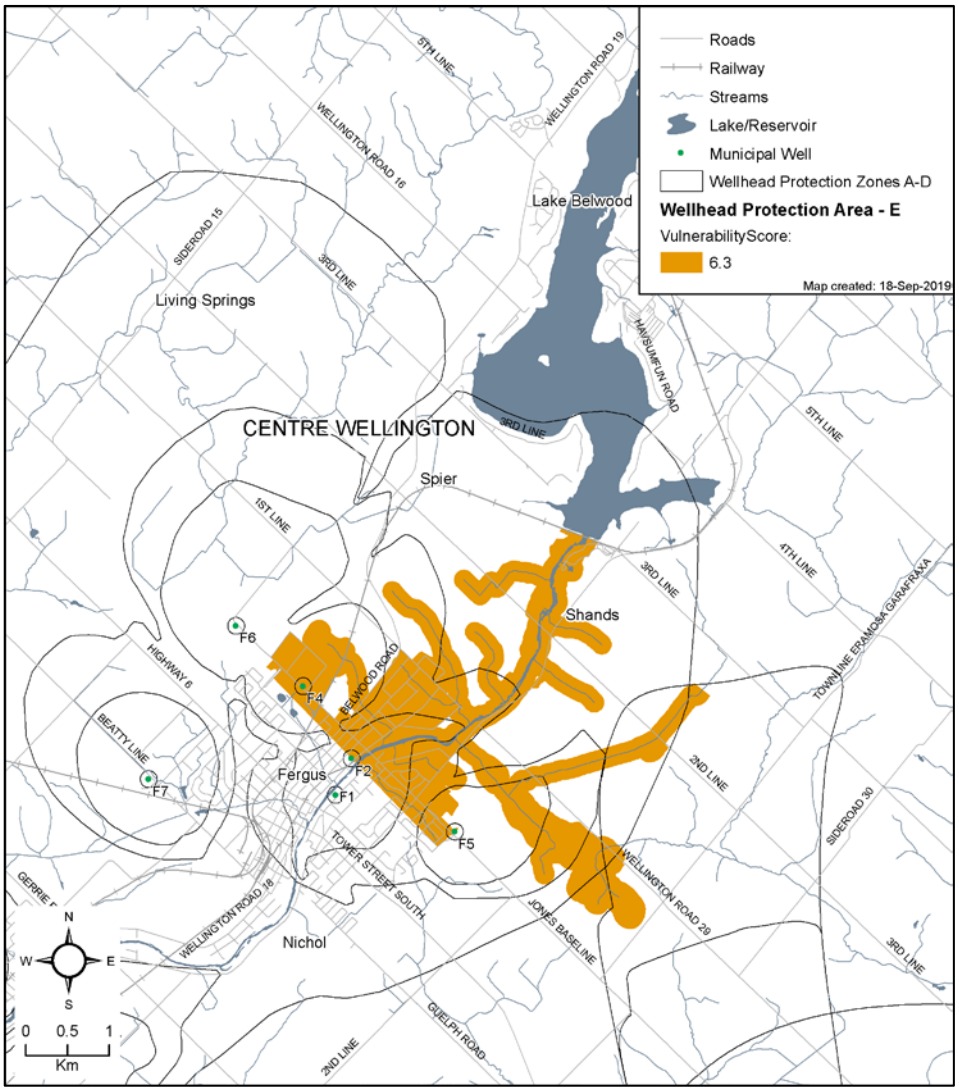
~~***Peer Review***~~

~~A peer review of the report *Township of Centre Wellington, Draft Source Protection Vulnerability, Issues and Threats Assessment Report* completed by Golder Associates, March 2010, was completed by Brian Luinstra of Luinstra Earth Sciences. The overall impressions of the report by the peer reviewer are as follows:~~

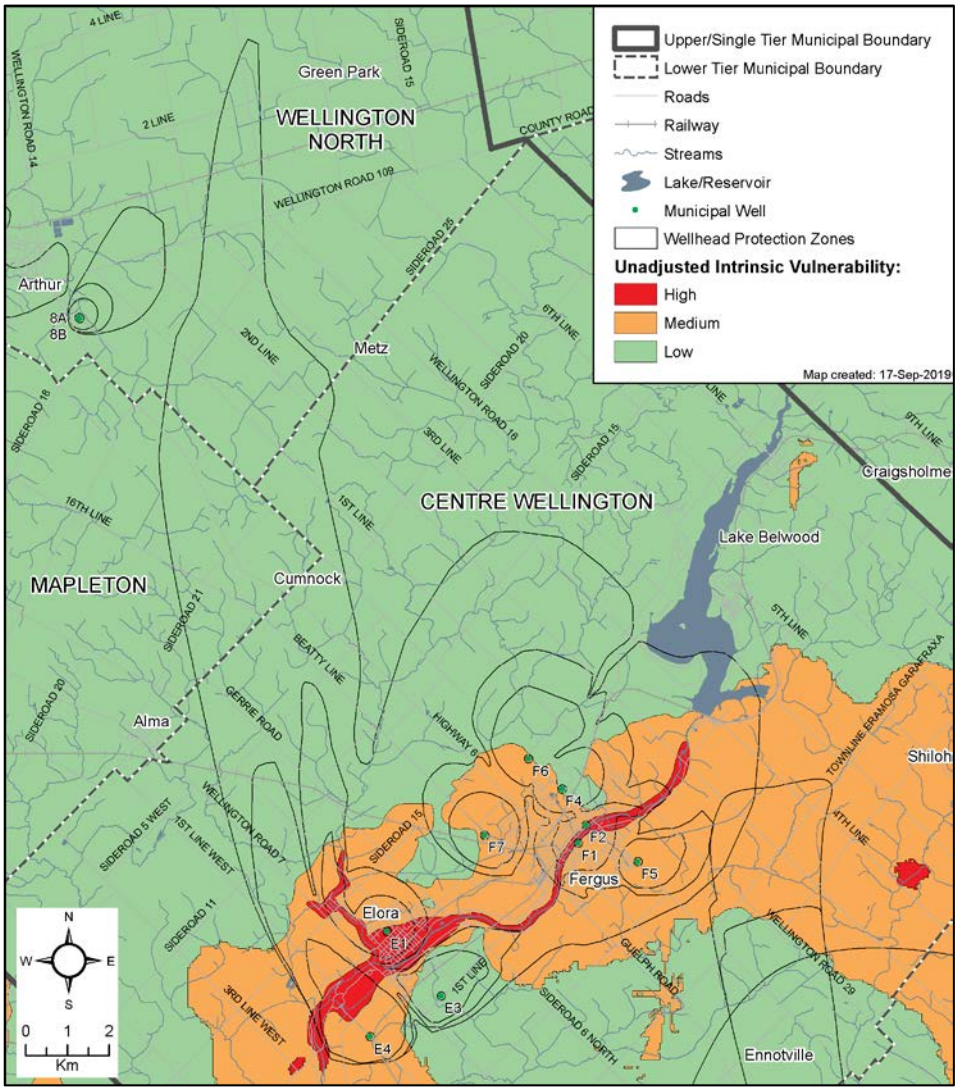
~~*"In the Peer Reviewer's professional opinion, the overall results appear reasonable and are consistent with the requirements outlined in the Ontario Ministry of Environment Technical Rules for completion of the Assessment Report under the Clean Water Act, 2006. The overall approach to the developing vulnerability scores, evaluating Issues and assessing threats are consistent with the Technical Rules.*~~

~~Responses to the peer review comments were incorporated into the final report. These responses to the peer review comments enhanced the overall defensibility or the report but did not impact the outcome of the Wellhead Protection Areas.~~

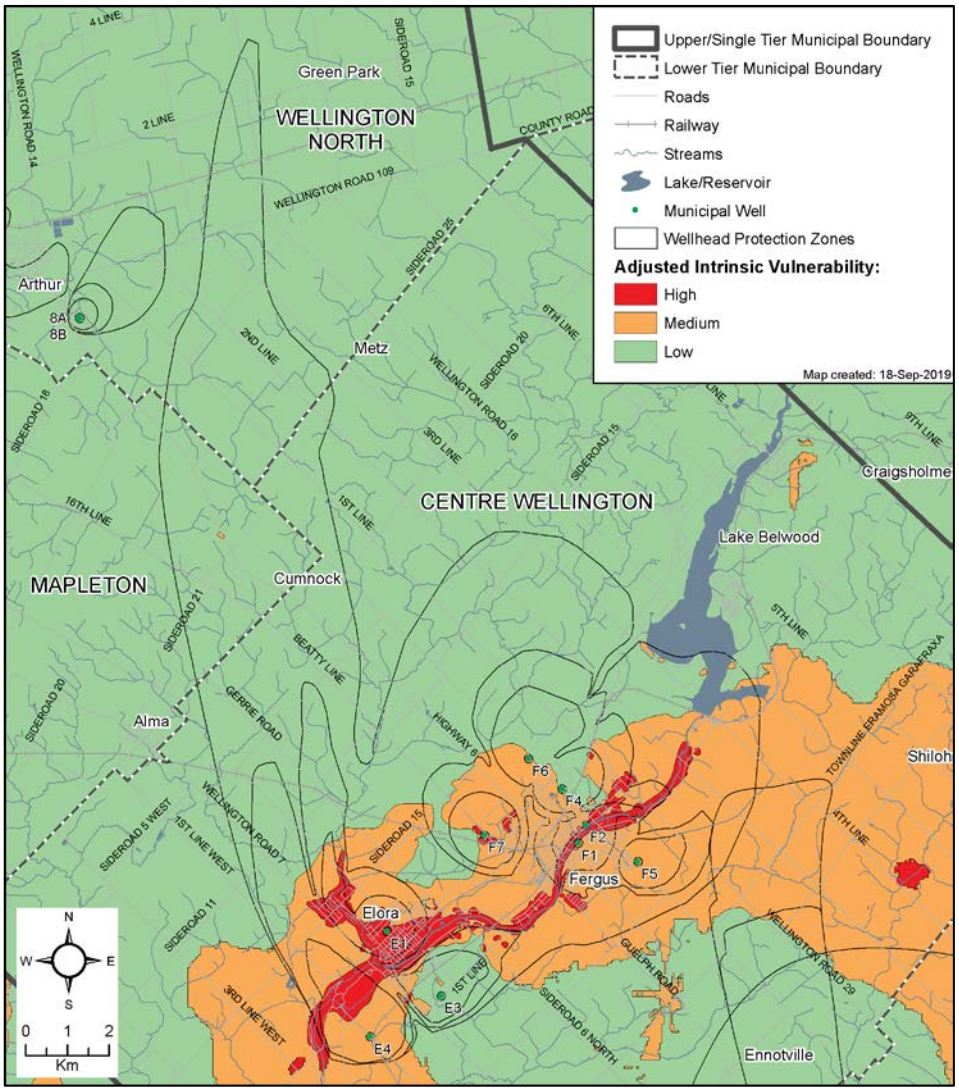
Map 6-25: Centre Wellington Well Supply Wellhead Protection Area E Delineation (Fergus Well F2)



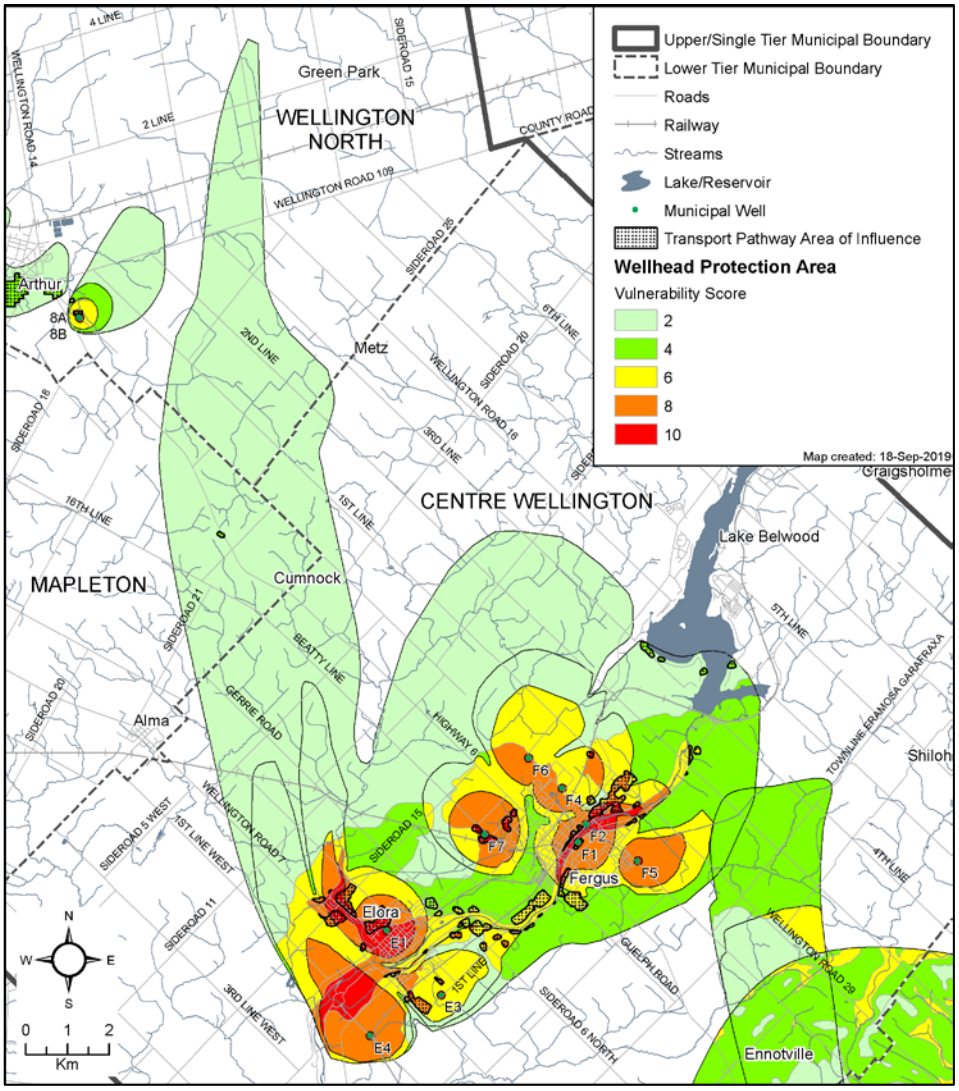
Map 6-26 Centre Wellington Well Supply Unadjusted Intrinsic Vulnerability ~~(Overview)~~



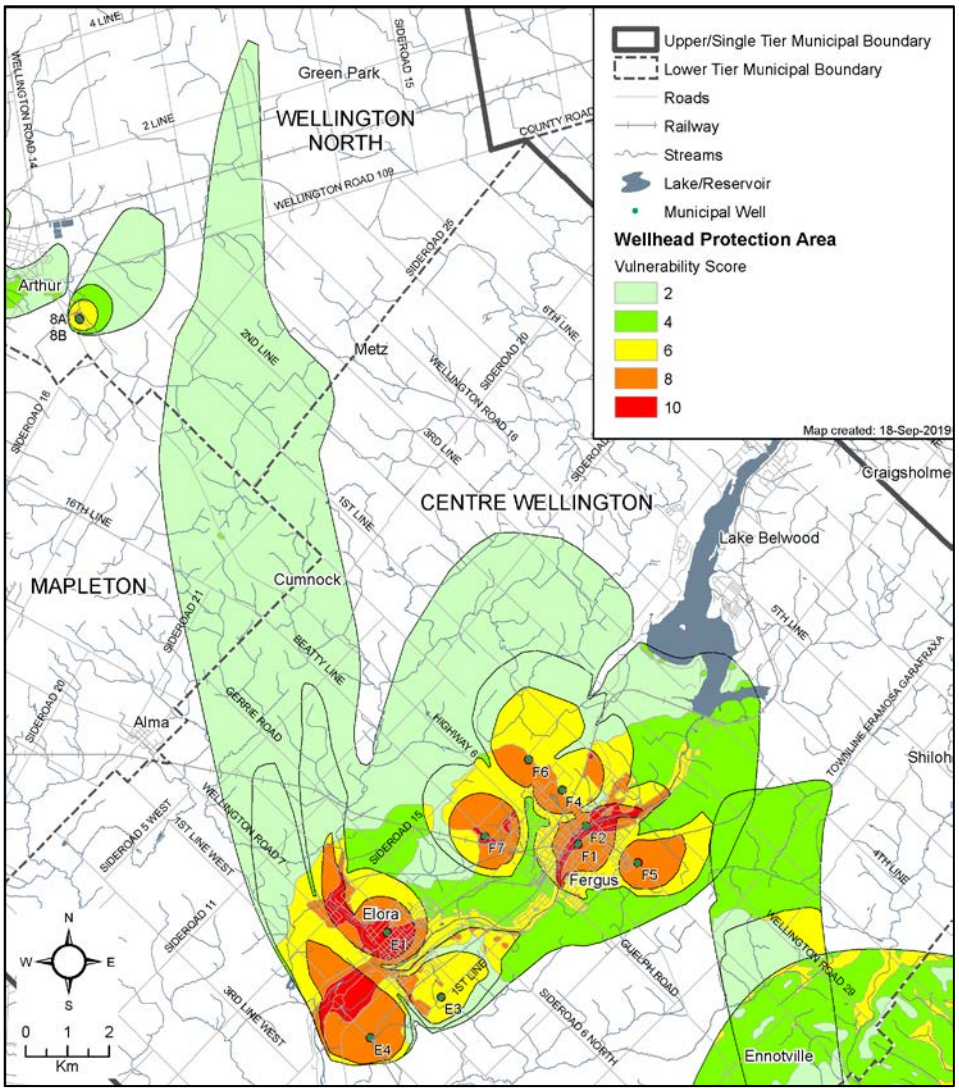
Map 6-27: Centre Wellington Well Supply Wellhead Protection Area Adjusted Intrinsic Vulnerability ~~(Overview)~~



Map 6-28 Centre Wellington Transport Pathways Area of Influence



Map 6-29: Centre Wellington Wellhead Protection Area Final Vulnerability



WHPA-E Peer Review

The vulnerability assessment of Fergus Well F2 was carried out by Stantec Ltd. on behalf of the Grand River Conservation Authority and Township of Centre Wellington. Some technical and peer review for the surface water vulnerability assessment was provided by GRCA during the study. External peer review was provided by Dr. Hugh Whitely, University of Guelph. Peer review comments were stated to be minor points for clarificatiUncertainty for the Wellhead Delineation and Vulnerability Scoring

An uncertainty assessment associated with the development of Wellhead Protection Areas and vulnerability mapping is required in order to assess the level of confidence in the results and determine the need for additional data collection and/or analysis as part of future assessments.

Hydrogeological investigations and groundwater modelling are dynamic and inexact sciences. A groundwater model uses science and mathematics to draw together the available data into a mathematical or computer-based representation of the essential features of an existing hydrogeological system. The validity and accuracy of the model depends on the amount of data available relative to the degree of complexity of the geologic formations, the site geochemistry, the fate and transport of the dissolved compounds, and on the quality and degree of accuracy of the data entered. Therefore, every groundwater model is a simplification of reality and the model described in this report is not an exception.

It should also be recognized that because the supply wells are completed in the bedrock aquifer, there is a fair amount of uncertainty over the times of travel and the effective area of capture. In a general sense, there would be greater uncertainty for bedrock systems than overburden systems due to the effect of the fractured rock and the assumptions with effective porosity.

For the Centre Wellington area, in addition to the regional studies that have been conducted, local hydrogeological studies have also been completed. Also, numerous water well records exist for private wells located within and around the Wellhead Protection Areas. After filtering out the lower quality water well records, the remaining water well records can provide information to fill in the gaps of the detailed studies. The Wellhead Protection Areas were delineated using a numerical model that had been calibrated reasonably well with the field data as described previously. In addition, a factor of safety was applied in delineating the Wellhead Protection Areas to help address in part the uncertainty in the hydraulic parameters assigned and potential regional uncertainty in the flow direction.

The SAAT mapping was initially conducted at a watershed scale to provide a consistent mathematical approach to the vulnerability aspect of the scoring. For Elora and Fergus, these results were further reviewed at a Wellhead Protection Area scale and changes applied to improve the results and reduce uncertainty in the SAAT mapping. The vulnerability scoring used in the threats assessment is based on both the Wellhead Protection Area delineation and the SAAT vulnerability mapping and, therefore, the overall uncertainty is related to the combined uncertainty of these two tasks.

Efforts have been made to reduce the uncertainty in the hydrogeological mapping products, following the guidance outlined in the Technical Rules. However, the following missing information adds to the uncertainty of this assessment: there is no site specific information on the effective porosity of the bedrock; there are relatively few high quality monitoring wells within and surrounding the capture zone to confirm the local groundwater flow direction; and the influence on the nature of the fracturing and distribution of water bearing zones within the bedrock are not explicitly mapped.

~~Notwithstanding the above, the vulnerability scoring reflects the best estimate of the actual conditions at Elora and Fergus. The Wellhead Protection Areas, SAAT vulnerability and resulting vulnerability scoring for Elora and Fergus are, therefore, estimated to have a low uncertainty rating.~~

Uncertainty for the WHPA-E Delineation and Vulnerability Scoring

The methods used to delineate WHPA-E zones were generally consistent with MOE guidance and the Technical Rules. The dye tracer fieldwork and resultant confirmation of excellent calibration of the hydraulic model of the Grand River for the design flow regime provides confidence that this aspect of the upstream system is generally well understood.

There is some uncertainty in the use of statistical flow analyses, performed on the historical flow data sets, to define the "design" flow. While efforts were made to ensure that all flow data included in the analysis were accurate, it is not possible to eliminate all sources of error. Some uncertainty exists in the data sets in the form of minor gauge malfunctions and/or the effect of ice and vegetation on water levels and flows. Generally speaking, however, the Fergus Shand Dam flow gauge data set was found to be of sufficiently high quality and duration to minimize concerns in this regard.

Observations of bankfull or near bankfull flood stage during the dye tracer fieldwork, when flows from the reservoir were known to be 25 m^3/s, provide further confidence in the use of the 95% flow, determined through statistical analysis to be 32 m^3/s, as representative of design flow.

In the absence of detailed studies being completed on every transport pathway within WHPA-E, it is inherent that numerous assumptions must be incorporated into the completion of the delineation work. While these assumptions were conservative to ensure that any errors were on the side of caution, this approach increased uncertainty in the validity of resultant protection zones in these areas and may result in the inclusion of areas in WHPA-E that may not impact on Well F2.

A typical example of the conservative approach applied within the WHPA-E delineation includes the assumption that small wetlands within the zone provide zero detention time to contaminant inputs. This assumption is obviously conservative as it must take some finite time for inflows to these areas to travel to the associated outlet. However, in the absence of field evidence to support the inclusion of a finite detention time provided by these elements, professional judgement dictated the conservative approach.

Despite potential uncertainty and conservative assumptions associated with transport pathways, in most instances the secondary transport pathways are sufficiently short that, even if the analysis does contains uncertainty, there can be a high degree of confidence that the resultant WHPA-E delineation limits would not require revision. In other words, there is a relatively high degree of confidence that the resultant "area of concern" envelopes all contributing drainage areas within a two-hour travel distance.

The exception to this confidence lies with the assumed extents and general configuration of storm sewer systems that were assumed immediately upstream of the intake location. Although most of the hydrology and hydraulics are considered to be generally well understood, the uncertainty pertaining to those portions of the protection area within the urbanized limits requires that the Well F2 WHPA-E delineation be assigned an uncertainty of high. Further assessment and field work required to reduce this high uncertainty is not recommended at this time due to the low

vulnerability of WHPA-E, the lack of significant threats and the fact that the well is not currently used for municipal supply.

The general characteristics of the WHPA-E for Well F2 suggest that the vulnerability score is consistent with the relative vulnerability of the hydrological features. For these reasons, the Study Team has a relatively high degree of confidence in the WHPA-E vulnerability scores for Well F2 and has ranked the uncertainty as low. The associated overall uncertainty assessment is summarized on **Table 6-26**.

Table 6-26: Uncertainty Evaluation for Well F2 WHPA-E in Fergus

Location	Delineation Uncertainty	Vulnerability Uncertainty
Fergus Well F2 WHPA-E	High	Low

Managed Lands within the Centre Wellington Wellhead Protection Areas

Managed Lands are lands to which nutrients are applied. Managed lands can be categorized into two groups: agricultural managed land and non-agricultural managed land. Agricultural managed land includes areas of cropland, fallow, and improved pasture that may receive nutrients. Non-agricultural managed land includes golf courses, sports fields, lawns and other built-up grassed areas that may receive nutrients (primarily commercial fertilizer). Detailed methods on managed lands calculations are described in Chapter 3 of this Assessment Report.~~Determining the location and percentage of managed lands, the location of agricultural managed lands, and the calculation of livestock density were used to determine whether the application of agricultural source material (ASM), non-agricultural source material (NASM), and fertilizer were significant threats within the Wellhead Protection Areas.~~

~~To calculate the percentage of managed lands, Technical Rule 16(9) was used (MOE, 2009b). Mapping the percentage of managed lands area is not required where the vulnerability score for an area is less than the vulnerability score necessary for the activity to be considered a significant threat.~~ Based on ~~this statement in the~~ Technical Rule 16 (9)~~s~~, the percentage of managed lands were only calculated where the vulnerability score in each ~~Wellhead Protection Area~~WHPA was greater than 4.

Managed lands calculations for Elora and Fergus were completed in WHPA-A to WHPA-D where the vulnerability was 6 or higher. **Table 6-27** provides the results of the calculations and **Map 6-30** and show the ranges of managed lands percentage for ~~Elora and Fergus respectively.~~the Centre Wellington WHPAs.

Table 6-27: Percent Managed Lands in the Centre Wellington Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Centre Wellington ~~Centre Wellington~~	Elora	E1	57.69%~~32%~~	54.41%~~60%~~	59.69%~~82%~~	38.2%~~25%~~
		E3	49.20%~~32%~~	58.53%~~61%~~	~~64%~~	~~25%~~
		E4	76.78%~~87%~~	57.01%~~77%~~	~~41%~~	~~25%~~
	Fergus	F1	20.71%~~5%~~	47.99%~~41%~~	58.49%~~90%~~	~~31%~~
		F2	41.41%~~25%~~	~~41%~~	~~90%~~	~~31%~~
		F4	11.32%~~0%~~	~~41%~~	~~90%~~	~~31%~~
		F6~~5~~	39.24%~~25%~~	~~74%~~	~~82%~~	~~31%~~
		F5~~6~~	48.95%~~47%~~	68.76%~~52%~~	~~88%~~	~~31%~~
		F7	60.47%~~31%~~	56.69%~~57%~~	~~64%~~	~~31%~~

~~Note that the managed lands percentage was only calculated in WHPA-D where the vulnerability score was greater than 4, i.e., 6 or more.~~

The percentage of managed lands within each WHPA-E was estimated according to the Technical Rules. The percentage of managed land within WHPA-E for well F2 is shown on **Map 6-33.**

Livestock Density within the Centre Wellington Wellhead Protection Areas

Technical Rule 16 also requires the mapping of livestock density. Livestock density is defined as the number of nutrient units over a given area, and is expressed by dividing the nutrient units by the number of acres in the agricultural managed land area or the livestock grazing area depending on the threat being assessed. Detailed methods on livestock density calculations are described in Chapter 3 of this Assessment Report.

~~The calculation of livestock density involves the following steps: estimate the number of each category of animal present; convert the numbers of each animal present into nutrient units (to allow for all animals to be compared on an equivalent unit of measure); and sum the total nutrient units of all animals present and divide by the agricultural managed land within the same area. For this study, properties with an agricultural property code (200 series MPAC codes) were reviewed using the GRCA 2006 orthoimagery to help in determining the detailed livestock density estimates. The maximum livestock density of an area was based on the assumption that all existing barns are in use to full capacity based on their size.~~

~~Nutrient units are calculated for an entire property; however, nutrient units on a property that crosses a Wellhead Protection Area boundary are to be prorated for the area within that Wellhead Protection Area zone. The nutrient units were prorated based on the percent of the parcel that is located within the vulnerable zone. Similarly to the managed lands mapping, T~~the livestock density mapping was completed for the entire WHPA-A, WHPA-B and WHPA-C zones and only within the WHPA-D zones with a vulnerability score of ~~six~~6.

Table 6-28 summarizes the livestock density results in nutrient units/acre (NU/acre) in the Elora and Fergus ~~Wellhead Protection Areas~~WHPAs. **Map 6-31** ~~and~~ shows the livestock density results for ~~Elora and Fergus respectively.~~ the Centre Wellington WHPAs.

Table 6-28: Livestock Density (NU/acre) in the Centre Wellington Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Centre Wellington ~~Centre Wellington~~	Elora	E1	0.000	0.160.7	0.76	0.32
		E3	0.240.23	0.040.2	0.16	0.32
		E4	0.150	0.480	1.160.2	0.32
	Fergus	F1	0.000	0.280.12	0.311.03	2.25
		F2	0.000	0.12	1.03	2.25
		F4	0.000	0.12	1.03	0.39200.11.25
		F65	0.550.54	0.45	0.12	2.25
		F56	0.440.6	0.460.3	2.05	2.25
		F7	0.000	0.010.45	0.34	2.25

A coding of 0 indicates that there were no agricultural livestock barns to contribute nutrients and therefore the value for livestock density is 0.

Similarly, the livestock density within each WHPA-E was estimated according to the Technical Rules. Livestock density within WHPA-E for well F2 is shown on **Map 6-37.** The vulnerability scores for these WHPAs are less than the vulnerability score necessary for the related activities to be considered significant threats, according to the Ministry of Environment's Table of Drinking Water Threats.

Uncertainty of the Livestock Density within the Wellhead Protection Areas

The MECP~~OE~~ livestock density circumstance is calculated/averaged over the entire protection zone and does not represent the livestock density at an individual property. The degree of threat posed by nutrient application at the scale of an individual property would need to be established from field visits and additional information from land owners, such as that collected as part of the development of nutrient management plans. The data on actual farming practices is currently based on assumptions.

Percent Impervious Surface Area within the Centre Wellington Wellhead Protection Areas

To determine whether the application of road salt poses a threat in the Centre Wellington, the percentage of impervious surface where road salt can be applied per square kilometre was calculated as per Technical Rules 16(11) and 17. The 1km X 1km method, described in Chapter 3 was used for Centre Wellington wellfield . The application of road salt can only be a threat in areas with a vulnerability score of 6 or greater under the threats-based approach; therefore the percent impervious calculation was only completed in areas with a score of 6 or greater.

~~To calculate the percent impervious surface, information on land cover classification from the Southern Ontario Land Resource Information system (SOLRIS) was used. This provided land use information, including road and highway transportation routes, as continuous 15x15 metre grid cells across the entire Source Protection Area. All the cells that represent highways and other impervious surfaces used for vehicular traffic were re-coded with a cell value of 1 and all other land cover classifications were given a value of 0, to identify impervious surface areas.~~

~~Then, a focal sum moving window average was applied using the Spatial Analyst module of the ArcGIS software. For each 15x15 metre cell, the total number of neighbouring grid cells coded as impervious, within a 1x1 kilometre search area, was calculated. This total was then converted into the percentage of impervious surface by land area, using the area of each cell (225 sq. m) and the area of the moving window (1 sq. km). This provides a 1x1 kilometre moving window~~

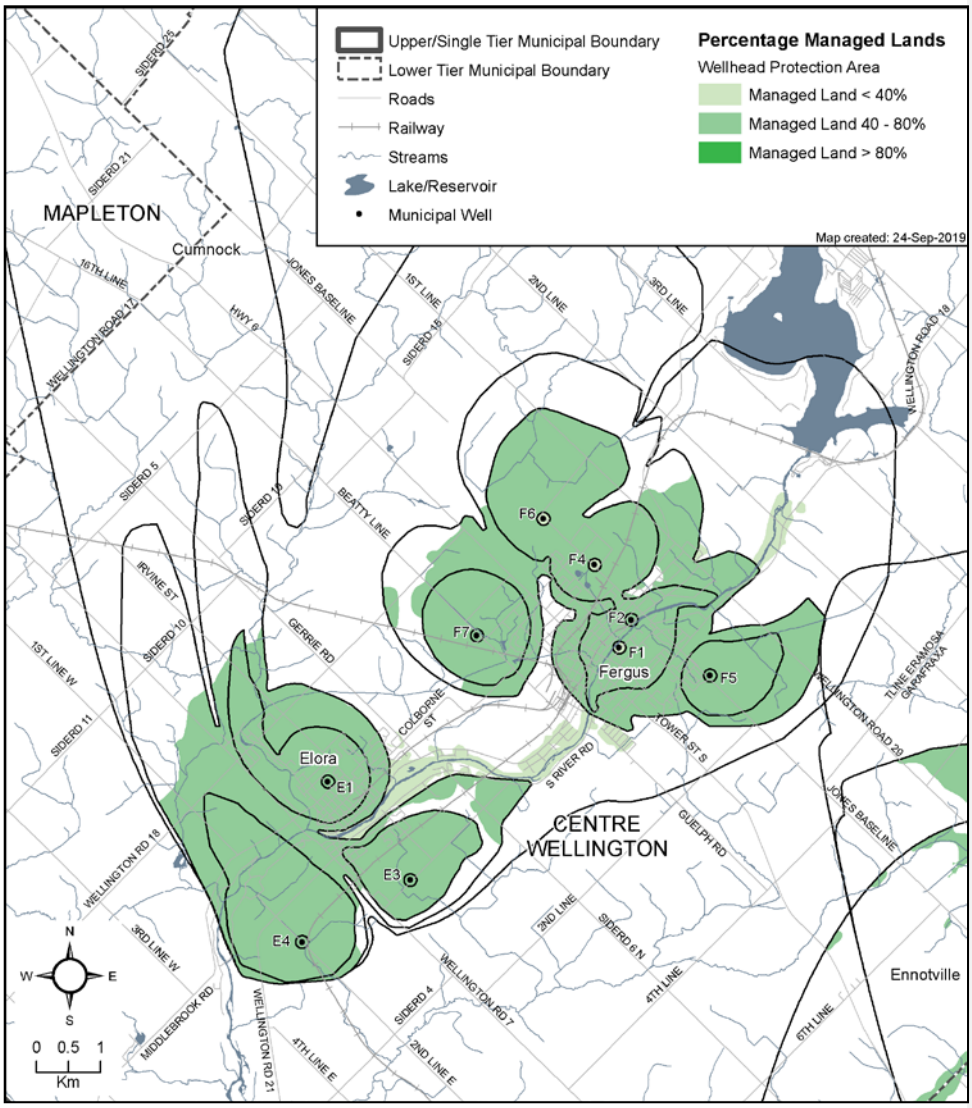
~~calculation of percent impervious surface, represented in 15x15 metre spatial increments. This dataset was calculated for the entire Source Protection Area, but was clipped to show those results only in the Wellhead Protection Areas and Intake Protection Zones. The analysis is more representative of road density and is better than the method described in the Technical Rules. As per Technical Rule 15.1, the Director has confirmed his agreement with the departure. The Director's letter of confirmation can be found in **Appendix B.**~~

The application of road salt can only be a threat in areas with a vulnerability score of 6 or greater; therefore the percent impervious calculation was only completed in areas with a vulnerability score of 6 or greater.

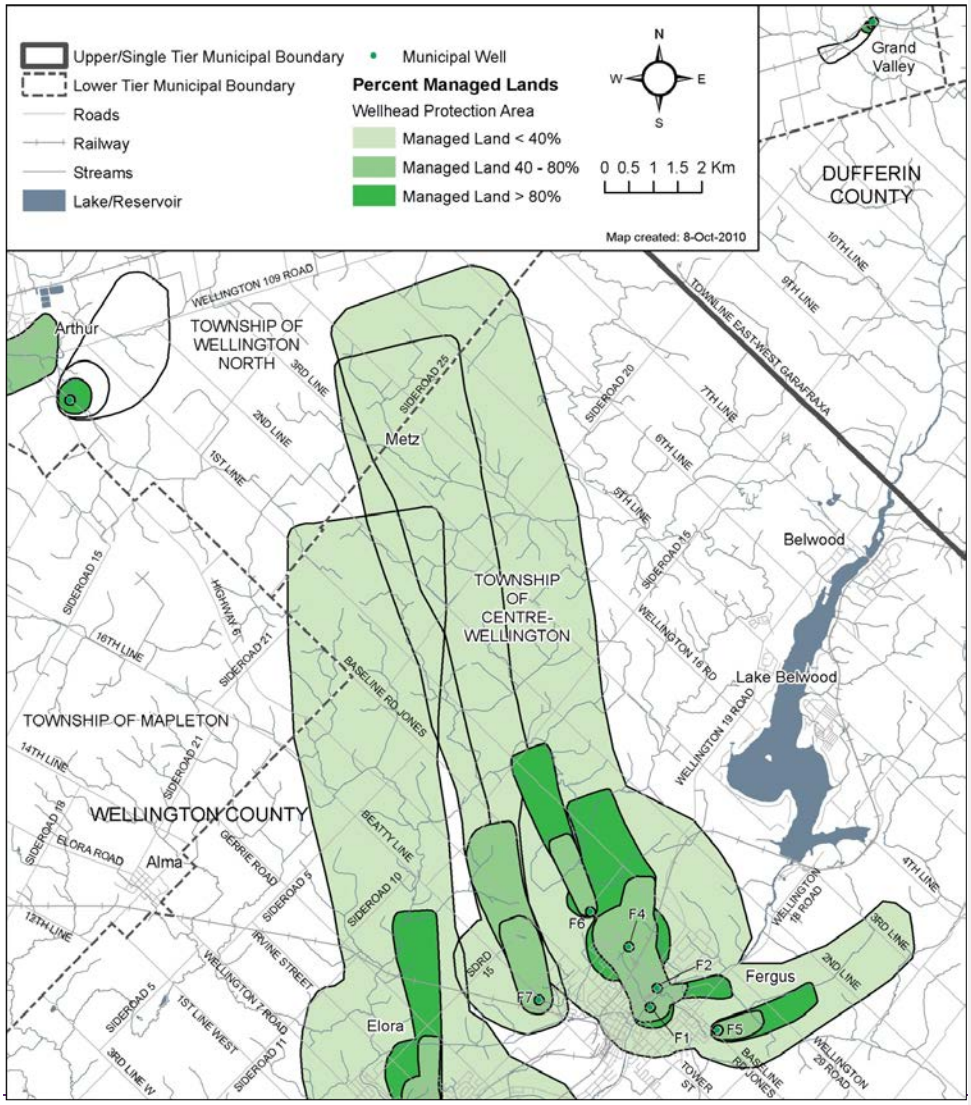
Map 6-32 and show the sumary of the percent imperviousness within the Centre Wellington Wellhead Protection Areas respectively.

The percentage of impervious surface area where road salt can be applied within the Fergus WHPA-E is shown on **Map 6-38.** The vulnerability scores for this WHPA is less than the vulnerability score necessary for the related activities to be considered significant threats, according to the ~~Ministry of Environment's~~MECP's Table of Drinking Water Threats.

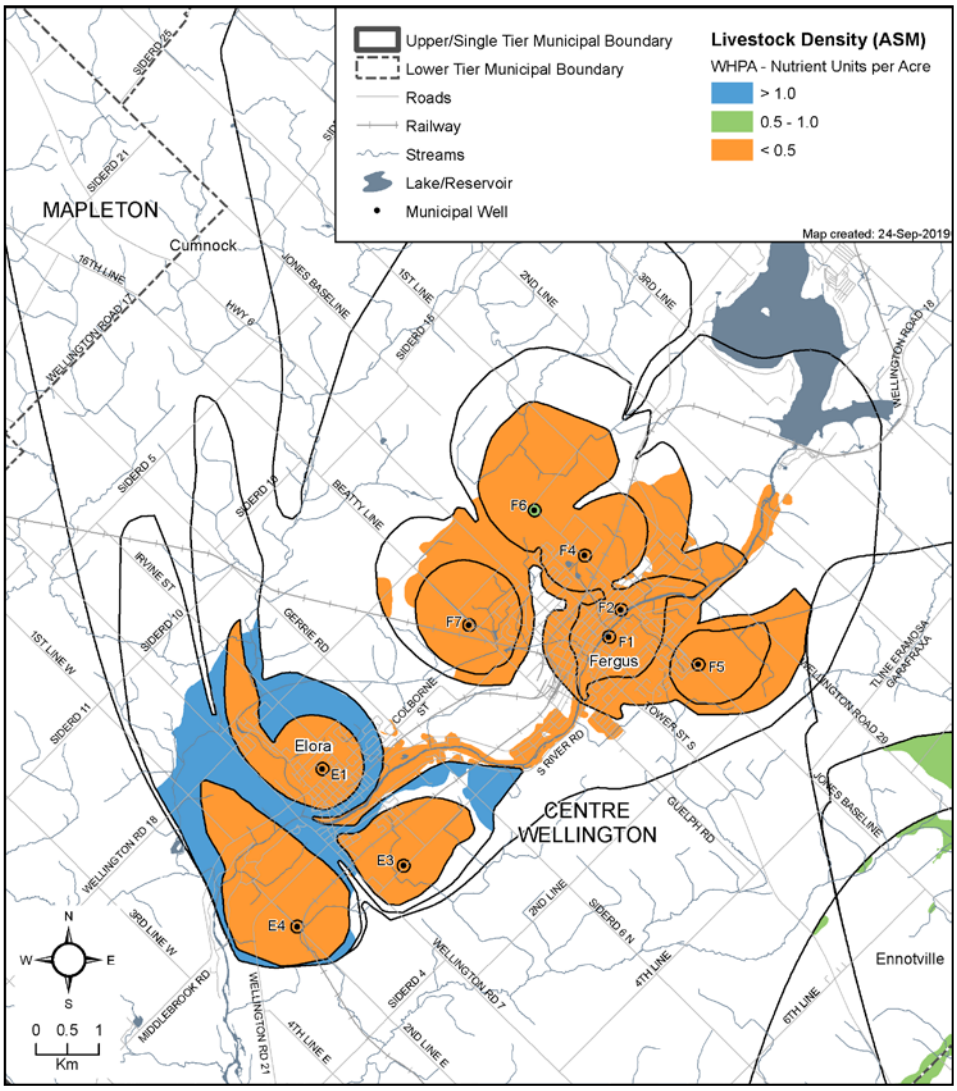
Map 6-30: Centre-Wellington Well Supply Percent Managed Lands



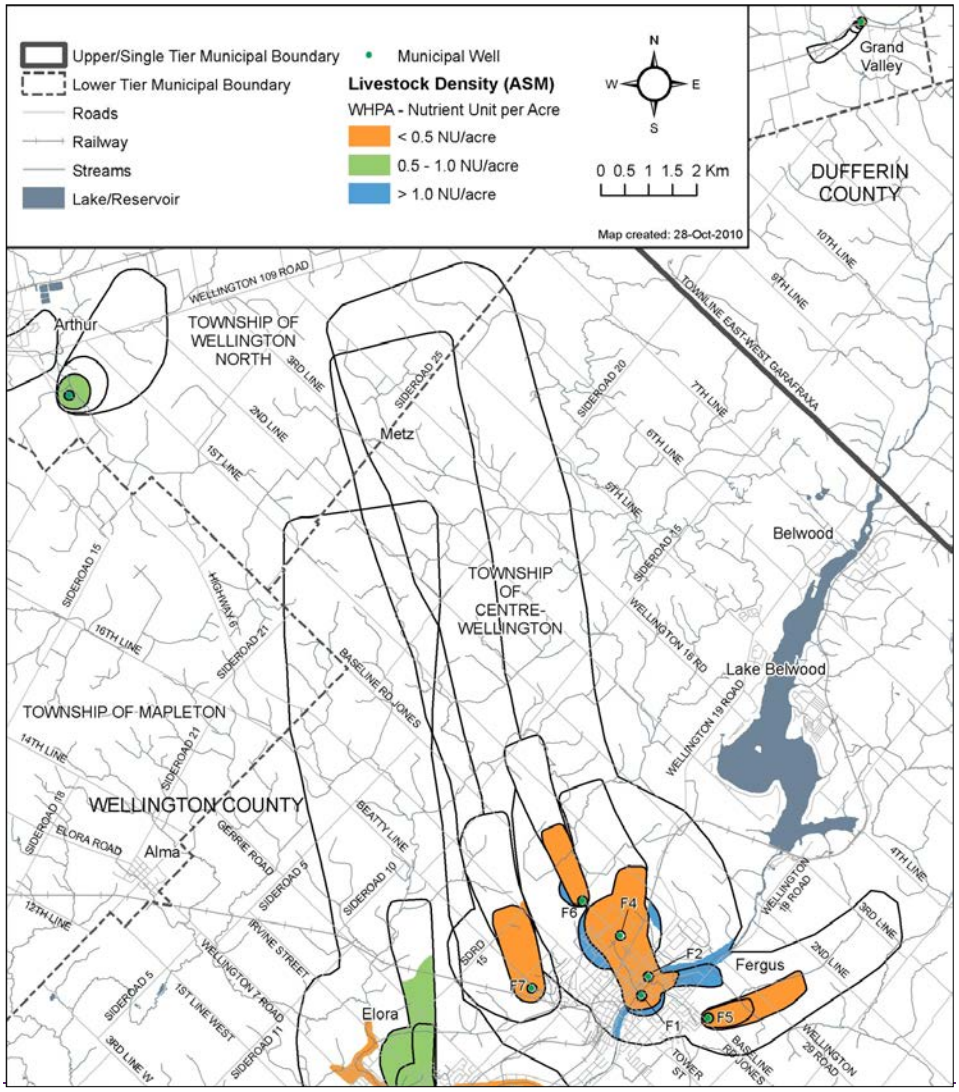
~~Map 6-31: Fergus Well Supply Percent Managed Lands~~



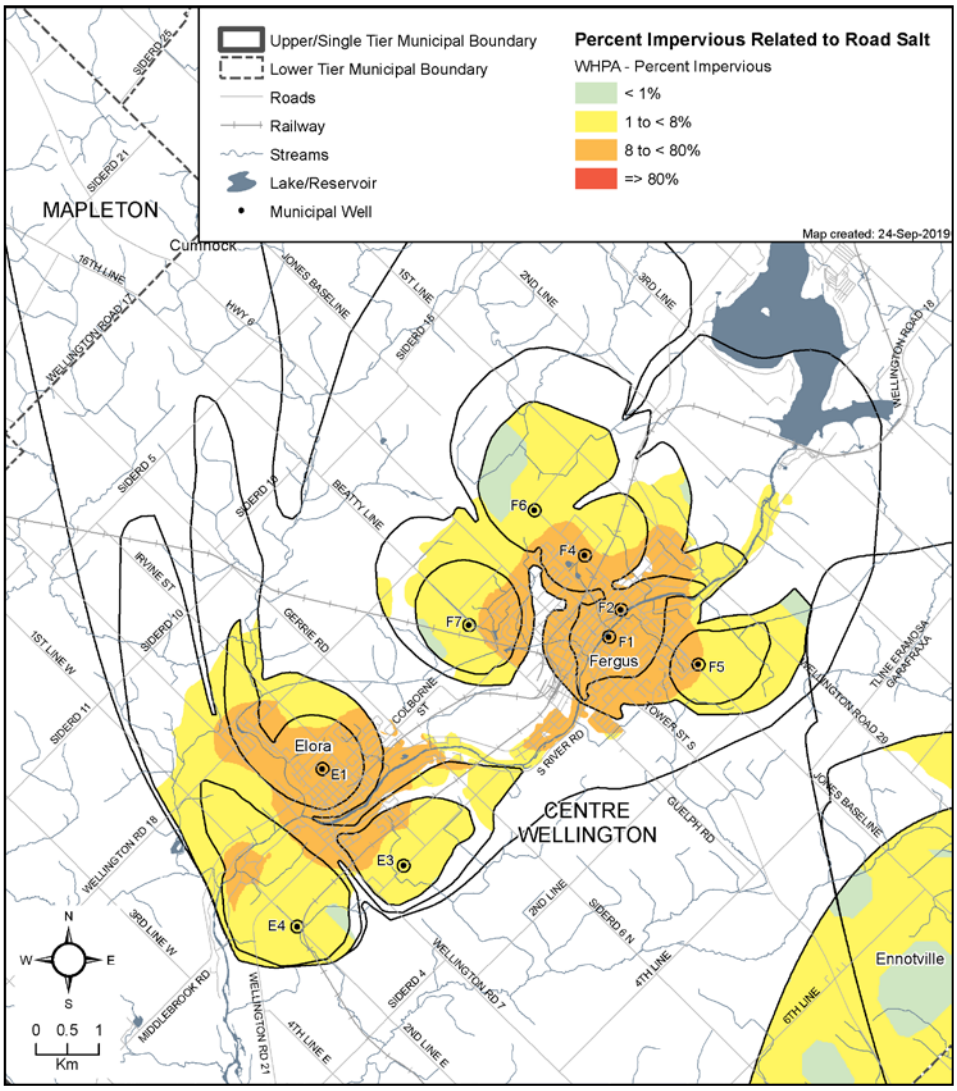
Map 6-31: ~~Elora~~ Centre-Wellington Well Supply Livestock Density



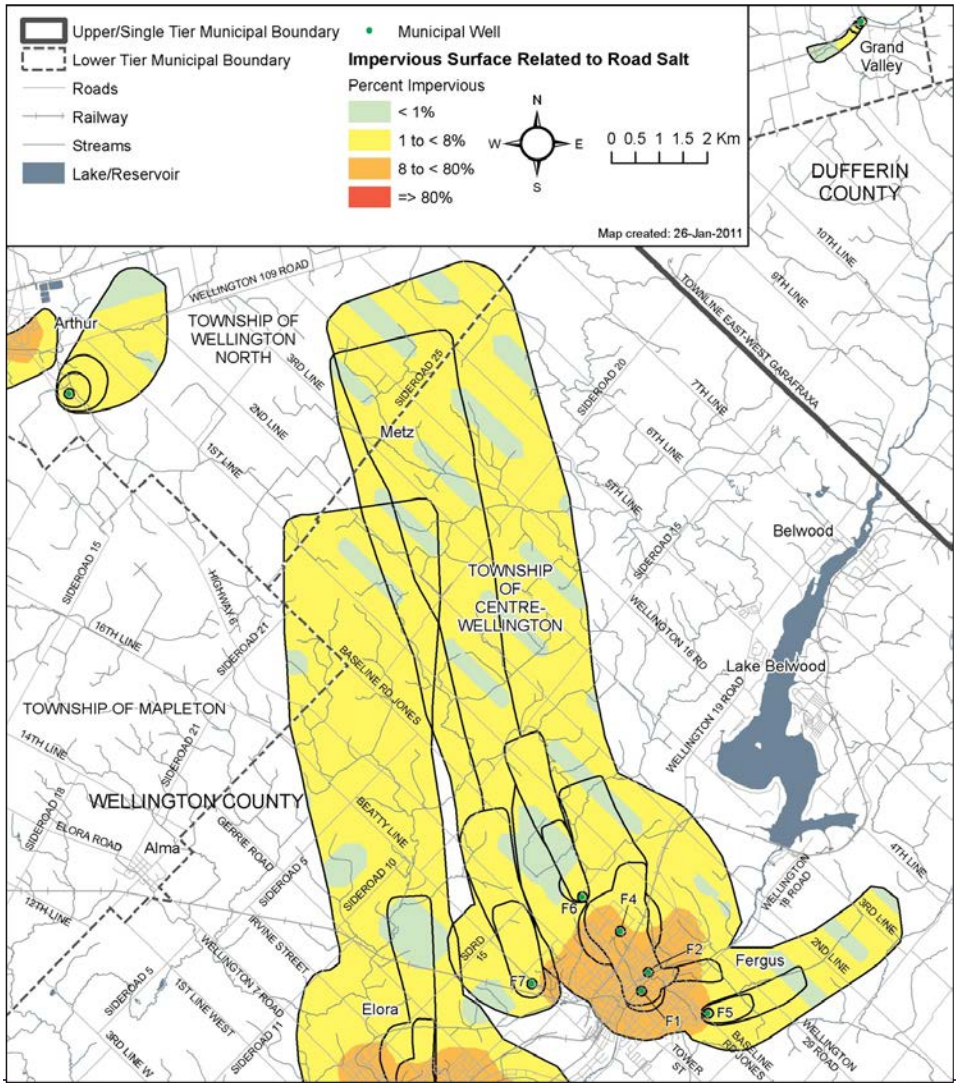
~~Map 6-33: Fergus Well Supply Livestock Density~~



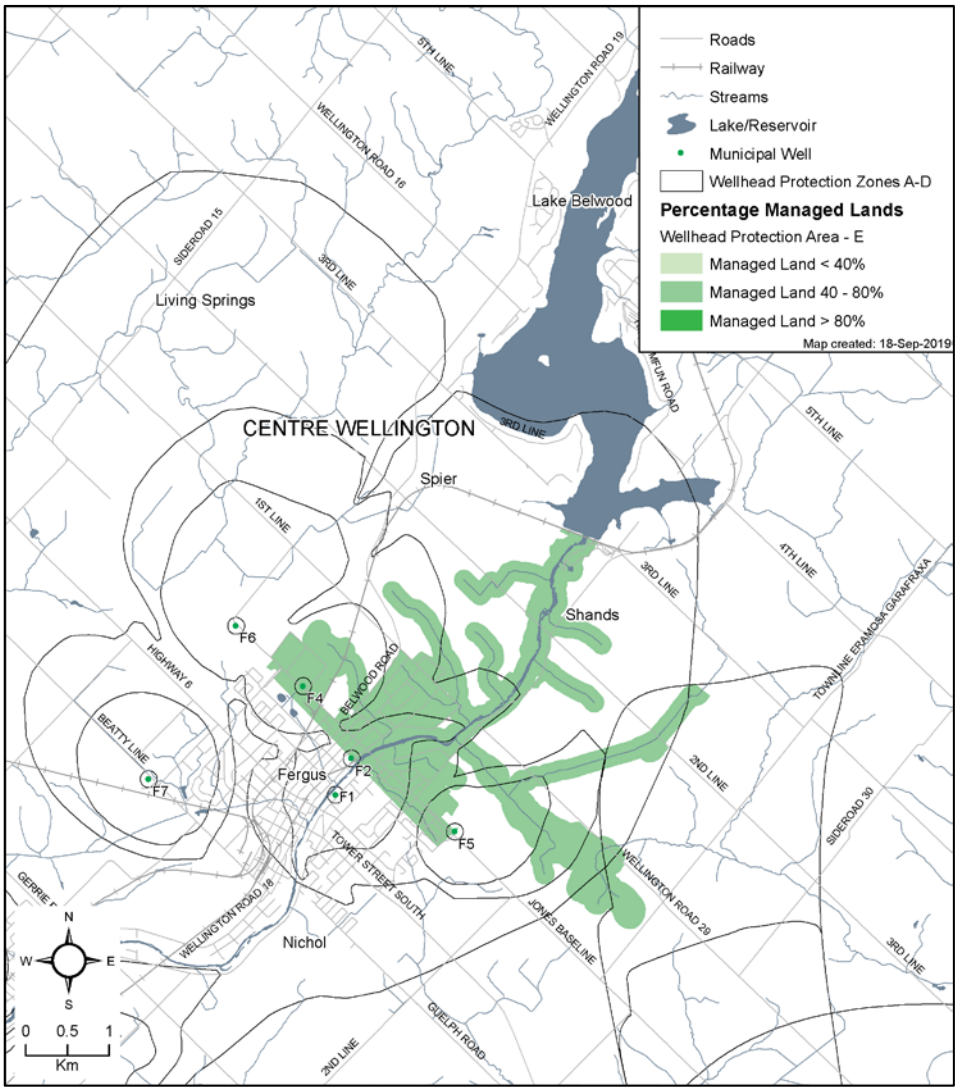
Map 6-32: ~~Elora~~ Centre-Wellington Well Supply Percent Impervious Surfaces



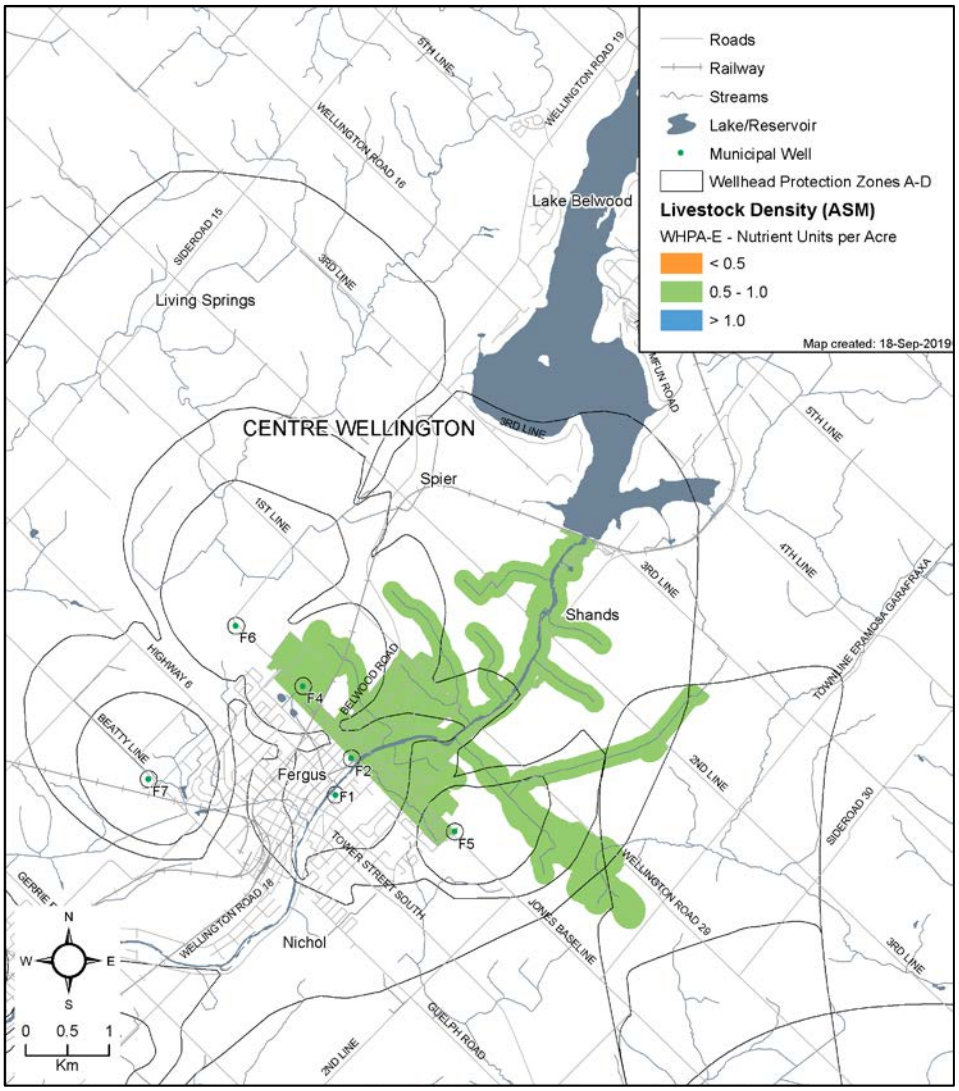
~~Map 6-35: Fergus Well Supply Percent Impervious Surfaces~~



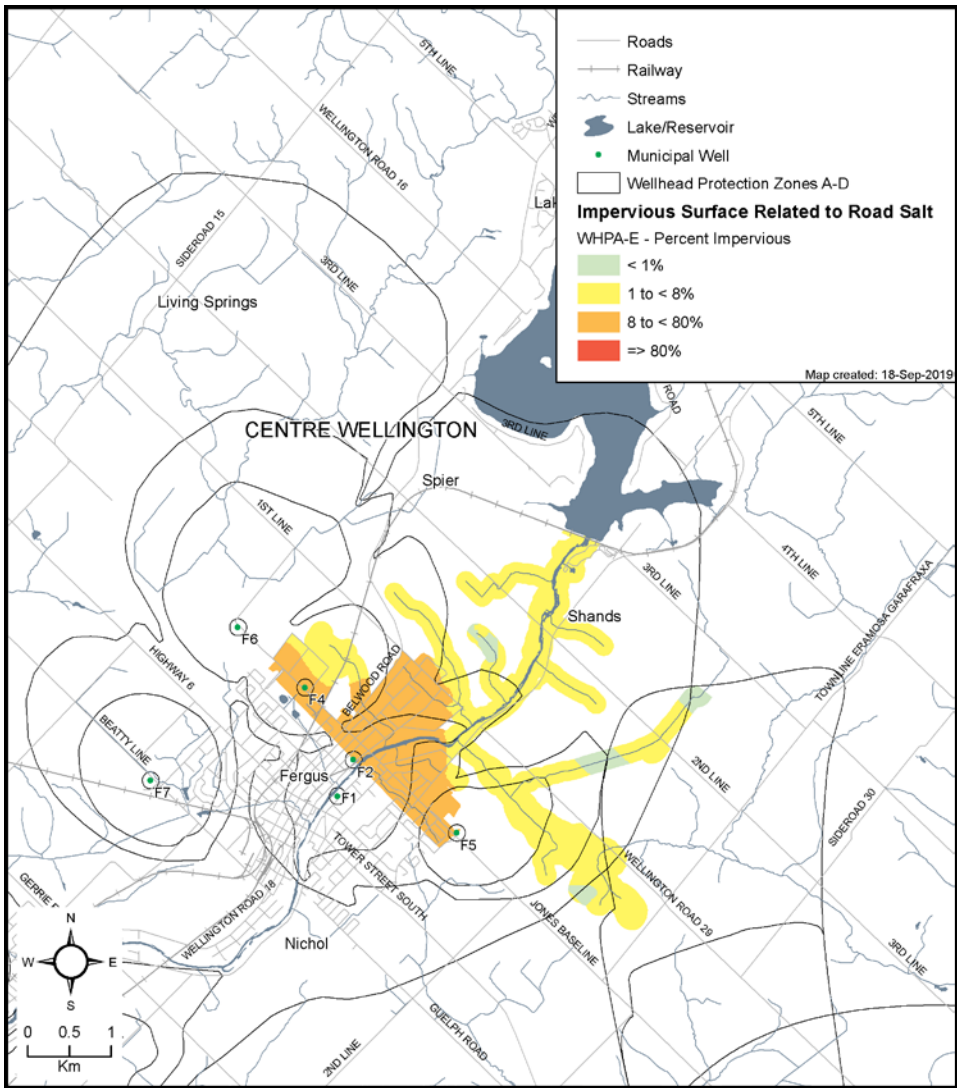
Map 6-33: Centre Wellington Well Supply WHPA-E Percent Managed Lands (Fergus, Well F2)



Map 6-34: Centre Wellington Well Supply WHPA-E Livestock Density (Fergus, Well F2)



Map 6-35: Centre Wellington Well Supply WHPA-E Percent Impervious Surfaces (Fergus, Well F2)



6.3.3 Drinking Water Threats Assessment

The Ontario Clean Water Act, 2006, defines a Drinking Water Threat as "an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulation as a drinking water threat." A Prescribed Drinking Water Threats table in Chapter 3 of this Assessment Report lists all possible drinking water threats.

Identification of Significant, Moderate and Low Drinking Water Quality Threats for the Centre Wellington Well Supply

The identification of a land use activity as a significant, moderate, or low drinking water threat depends on its risk score, determined by considering the circumstances of the activity and the type and vulnerability score of any underlying protection zones, as set out in the Tables of Drinking Water Threats available through www.sourcewater.ca. Information on drinking water threats is also accessible through the Source Water Protection Threats Tool: http://swpip.ca. ~~For local threats, the risk score is calculated as per the Director's Approval Letter, as shown in **Appendix C.**~~ The information above can be used with the vulnerability scores shown in **Map 6-27** and **Map 6-29** to help the public determine where certain activities are or would be significant, moderate and low drinking water threats.

Table 6-27 and **Table 6-28** provide a summary of the threat levels possible in the Centre Wellington Well Supply for Chemical, Dense Non-Aqueous Phase Liquid (DNAPL), and Pathogens. A checkmark indicates that the threat classification level is possible for the indicated threat type under the corresponding vulnerable area / vulnerable score; a blank cell indicates that it is not. The colours shown for each vulnerability score correspond to those shown in **Map 6-27** and **Map 6-29**.

Table 6-29: Identification of Drinking Water Quality Threats in the Elora Wellhead Protection Areas

Threat Type	Vulnerable Area	Vulnerability Score	Threat Classification Level		
			Significant 80+	Moderate 60 to <80	Low >40 to <60
Chemicals	WHPA-A/B	10	✔	✔	✔
	WHPA-B/C	8	✔	✔	✔
	WHPA-B/C/D	6		✔	✔
	WHPA-C/D	2 & 4			
Handling / Storage of DNAPLs	WHPA-A/B/C	Any Score	✔		
	WHPA-D	6		✔	✔
	WHPA-D	2 & 4			
Pathogens	WHPA-A/B	10	✔	✔	
	WHPA-B	8		✔	✔
	WHPA-B	6			✔
	~~WHPA-C/D~~	~~Any Score~~			

Table 6-30: Identification of Drinking Water Quality Threats in the Fergus Wellhead Protection Areas

Threat Type	Vulnerable Area	Vulnerability Score	Threat Classification Level		
			Significant 80+	Moderate 60 to <80	Low >40 to <60
Chemicals	WHPA-A/B	10	✔	✔	✔
	WHPA-B/C	8	✔	✔	✔
	WHPA-B/C/D	6		✔	✔
	WHPA-C/D	2 & 4			
	WHPA-E	6.3		✔	✔
Handling / Storage of DNAPLs	WHPA-A/B/C	Any Score	✔		
	WHPA-D	6		✔	✔
	WHPA-D	2 & 4			
	WHPA-E	6.3			✔
Pathogens	WHPA-A/B	10	✔	✔	
	WHPA-B	8		✔	✔
	WHPA-B	6			✔
	~~WHPA-C/D~~	~~Any Score~~			
	WHPA-E	6.3		✔	✔

6.3.4 Conditions Evaluation

Conditions are contamination that already exist and are a result of past activities that could affect the quality of drinking water. To identify a Condition, Part XI.3, Rule 126 of the Technical Rules (MOECC, ~~2009b~~2017), lists ~~the following~~ criteria for drinking water sources, which is outlined in Chapter 3 of this Assessment Report.~~:~~

- ~~The presence of a non-aqueous phase liquid in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or wellhead protection area.~~
- ~~The presence of a single mass of more than 100 litres of one or more dense non-aqueous phase liquids in surface water in a surface water intake protection zone.~~
- ~~The presence of a contaminant in groundwater in a highly vulnerable area, significant groundwater recharge area or a wellhead protection area, if the contaminant is listed in Table 2 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that Table.~~
- ~~The presence of a contaminant in surface soil in a surface water intake protection zone if, the contaminant is listed in Table 4 of the Soil, Ground Water and Sediment Standards is present at a concentration that exceeds the surface soil standard for industrial/commercial/community property use set out for the contaminant in that Table; and~~

~~The presence of a contaminant in sediment, if the contaminant is listed in Table 1 of the Soil, Ground Water and Sediment Standards and is present at a concentration that exceed the sediment standard set out for the contaminant in that Table.~~

The ~~above listed~~ criteria were used to evaluate potentially contaminated sites within the Elora and Fergus WHPAs to determine if such a Condition was present at a given site.

~~Data Sources for the Conditions Evaluation~~

Conditions Evaluation for the Centre Wellington Well Supply

The results of the condition site assessment presented in the Approved Grand River Assessment Report (August 2012) indicated that no condition sites were identified within the Township of Centre Wellington. For the Township of Centre Wellington, sixteen (16) potential condition sites were identified in the Approved Assessment Report, however, there was a lack of information pertaining to contaminant concentrations and off-site migration at the time that prevented identification of condition sites under Technical Rule 126. This lack of information was identified as a data gap or uncertainty for the Centre Wellington portion of the Assessment Report and no condition sites were identified.

Since the approval of the Assessment Report in 2012, additional information has been obtained from Ministry of the Environment files, municipal files, and some responsible parties pertaining to condition sites within the Township of Centre Wellington. As a result, the available documents, reports and data pertaining to nineteen (19) potential condition sites were reviewed in 2015 to determine whether any of the sites met the technical rules as a condition or significant drinking water threat condition site. In 2015, six (6) sites were identified as condition sites while two (2) sites were identified as significant drinking water threat condition sites. In 2019, a review of available data and reports was completed to reassess the condition and / or significant drinking water threat condition status of the nineteen (19) sites and any additional sites identified since 2015. This review was completed primarily because of the redelineation of the wellhead protection areas.

During the 2019 review, nineteen (19) potential condition sites were reviewed, all were sites previously identified in 2015. There were no additional sites identified. Three~~Eleven~~ (3~~11~~) of the nineteen (19) sites ~~reviewed~~ were not located within a municipal well head protection area and therefore are not considered condition sites under Technical Rule 126. The remaining sixteen~~eight~~ (16~~8~~) sites were located within municipal well head protection areas for either Elora, Fergus or Hamilton Drive wells. Fourteen (14) sites had sufficient information to be considered condition sites under Rule 126 while two (2) had insufficient information and therefore were not considered condition sites. Based ~~in Fergus with vulnerability scores of 8 or 10 and therefore, depending on the site specific information related to contamination may be condition sites under Rule 126. Based~~ on the documentation available at this time, ~~six (6) sites within the Fergus WHPAs are considered condition sites under Technical Rule 126 and~~ there is sufficient evidence to identify four (4) of the fourteen (14) ~~two (2) of the six (6)~~ sites as significant drinking water threat condition sites under technical rule 140 or 141. Three ~~The two~~ significant drinking water threat condition sites are located in Fergus and one significant drinking water threat condition site is located in Elora. The site in Elora and two of the sites in Fergus are related to petroleum hydrocarbon contamination and there is evidence of off-site contamination. The remaining site located in Fergus is related to trichloroethylene contamination and there is evidence of off-site contamination.

In 2015, two sites in Fergus were identified as significant drinking water threat condition sites and one of these sites is still identified as such in 2019. The remaining site is identified as a moderate drinking water threat condition site in 2019 due to a change in the wellhead protection areas and a reduction in the vulnerability scoring related to the site.

6.3.5 Drinking Water Issues Evaluation

The objective of the Issues evaluation is to identify drinking water Issues where the existing or trending concentration of a parameter or pathogen at an intake, well or monitoring well would result in the deterioration of the quality of water for use as a source of drinking water. The parameter or pathogen must be listed in Schedule 1, 2 or 3 of the Ontario Drinking Water Quality Standards (ODWQS) or Table 4 of the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines (Technical Rules XI.1 (114 – 117)). Elevated concentrations of selected parameters that are naturally occurring or where effective treatment is in place are not considered drinking water Issues.

~~Once a drinking water Issue is identified, the objective is to identify all sources and threats that may contribute to the Issue within an Issue Contributing Area and manage these threats appropriately. If at this time the Issue Contributing Area can not be identified or the Issue can not be linked to threats then a work plan must be provided to assess the possible link.~~

~~If an Issue is identified for an intake, well or monitoring well, then all threats related to a particular Issue within the Issue Contributing Areas are as significant drinking water threats, regardless of the vulnerability.~~

Drinking Water Issues Evaluation for the Centre Wellington Well Supply

Potential Issues were evaluated through a review of raw water data from each of the production wells provided by Centre Wellington ~~Public Works~~Environmental Services from 2005, 2007, 2009 and 2011 to 2019 ~~and 2009~~ and from treated water chemistry data for the parameters listed in Schedule 23 and 24 of Ontario Regulation 170/03 for 2006, 2007 and 2009, where available. The ~~Public Works~~municipality also supplied nitrate concentrations from 2003 to 2019~~09~~.

In addition, historical summaries of water quality were reviewed from previous reports including Threats Assessment and Issues Evaluation (Blackport Hydrogeology Inc. and Triton Engineering Services Limited, 2008) ~~and~~, Water Resource Characterization Groundwater Management Study (Blackport Hydrogeology Inc., 2002b) and Investigation of Chloride in Drinking Water (Golder Associates Ltd., 2018). The raw water quality data available for the review were compared to the Ontario Drinking Water Quality Standards and the Technical Support Document to identify parameters approaching or exceeding a standard.

The microbiological data for the raw water from the municipal wells was obtained through a review of the 2015, 2016, 2017 and 2018 Annual Drinking Water Reports for Centre Wellington. ~~provided by Centre Wellington Public Works was reviewed for 2008 and from comments provided in previous reports, such as Threats Assessment and Issues Evaluation (Blackport Hydrogeology Inc. and Triton Engineering Services Limited, 2008).~~ The raw water quality data available for the review were compared to the Ontario Drinking Water Quality Standards to identify parameters approaching or exceeding a standard.

The Issues evaluation for Centre Wellington focused on the water quality parameter groupings outlined in the Ontario Drinking Water Quality Standards (ODWQS) identified in Ontario Regulation 169/03 under the *Safe Water Drinking Act* and the related technical support document. These parameters include: a) Pathogens. b) Schedule 1 Parameters, c) Schedule 2 and 3 parameters and, d) Table 4 parameters.

Parameters have been screened for closer investigation where any of the following criteria have been met:

- Consistent presence of microbiological parameters;
- The parameter has a health related Maximum Acceptable Concentration (MAC) associated with it and the concentration in the raw or treated water exceeds half of the MAC level (with the exception of fluoride); and
- The parameter does not have a health related MAC but the concentration observed exceeds the objective or guideline associated with the ODWS.

Water quality parameters meeting the screening threshold above were further reviewed to determine whether to identify them as Issues. The considerations included:

- Whether the concentration is at or trending towards a health related MAC;
- The frequency with which the parameter meets the screening threshold;
- Capabilities of the treatment facility;
- The ability of the parameter to interfere with/upset the treatment process;
- Whether the parameter is related to issues raised by the public; and
- Importance of the well to the overall supply.

In the Grand River *Assessment Report* (2012), chloride was identified as having an increasing trend in Elora Well E3, however, was not identified as a drinking water issue per the Technical Rules under the *Clean Water Act* in the Approved Grand River Assessment Report. Since the approval of the Assessment Report in 2012, additional chloride data has been collected for all municipal wells in Elora and Fergus, except Well F2, and historical data incorporated into the data set. In 2014, the Township commissioned Golder Associates to review the sodium and chloride data at Elora and Fergus wells to recommend what further action wais required including whether there wais sufficient evidence to identify a drinking water issue as per the Technical Rules under the *Clean Water Act.* In 2015, a drinking water issue under Rule 115.1 for Well E3 in Elora and Well F1 in Fergus was declared. Declaration of an issue under this Technical Rule required further monitoring of the issue but did not require delineation of an issues contributing area. Therefore, the 2015 Assessment Report did not delineate an issues contributing area for these wells, however, the municipality was required to complete further monitoring. Following the continued municipal monitoring of the issue, ~~Further,~~ in 2018, Golder Associates completed a study on chloride concentrations at the Fergus and Elora wells which recommended, as it pertains to Issues, the following:

- the continuation of chloride investigations at production wells F1, F6, F7, and E3 with quarterly sampling of chloride, sodium, nitrate, sulphate, iron and manganese; and,
- the development of a chloride Issue Contributing Area for well F1 and E3.

Elora Drinking Water Issues Evaluation

~~A review of the water quality data for Elora did not identify any Issues under Rule 114 with the drinking water sources. The review of the water quality data for Elora did identify a drinking water issue under Rule 115.1 for Well E3.~~ The 2018 Golder Associates review of the water quality data for the Elora~~Fergus~~ Wellfield identified a chloride Issue for drinking water source E3 under Rule 114. The chloride Issue Contributing Area is mapped on **Map 6-36**.

Well E1, in the north part of Elora, has ~~generally has good water quality, with~~ sodium and chloride concentrations below 20 mg/L and nitrate concentrations less than ~~2~~ 0.1 mg/L or non-detect. The Ontario drinking water quality standard for nitrate is 10 mg/L, the aesthetic objective for chloride, sulphate and iron are 250, 500 and 0.3 mg/L, respectively. Sulphate concentrations are below 3400 mg/L and are naturally occurring. Aluminum was detected at 0.5 mg/L in one sample in 2009

which is above the operational guideline of 0.1 mg/L. When re-sampled, aluminum was detected at 0.06 mg/L. ~~Previous~~ All measurements of aluminum ~~in 2005 and 2007~~to 2019 were below the detection limit. Zinc concentrations ~~appear to be increasing since 2005 but~~ are well below the aesthetic objective of 5 mg/L and in almost all cases belwo the detection limit of . The 2014 review confirmed the above findings related to sodium and chloride concentrations (Golder, 2014).

Well E3, in the south part of Elora, currently ~~has good~~meets ODWQS for all health related parameters. ~~water quality.~~ S~~s~~odium concentrations ~~are below~~range from 5 to 50 mg/L, nitrate concentrations are below 1.3~~2~~ mg/L and sulphate concentrations ~~are below~~range from ~~3~~1 to 283~~40~~ mg/L. Sulphate concentrations have shown a sharp increase in 2011, 2015 and 2017 with values ranging from 278 to 283 mg/L, while sulphate concentrations in 2005 to 2009 and 2013 ran~~e~~ge from 30 to 34 mg/L. Sulphate concentrations are higher with higer pumping rates at E3 (Golder, 2018).

~~The 2014 review, however, indicated that~~ c~~c~~hloride concentrations range from 0.5~~1~~ to 165~~52~~ mg/L for Well E3 and appear to be increasing although variable. ~~The chloride concentration in July 2014 (152 mg/L) was over 50% of the aesthetic objective while in June 2014, the chloride concentration was 20 mg/L. The source of this variation is not clear currently and further study is required.~~ The chloride concentrations measured during some of the sampling events from 2~~3~~013 onward were greater that 50% of the Aesthetic Objective of 250 mg/L. As detailed in ~~the figure~~Figure 7-1 ~~below~~, the well E3 chloride data shows an increasing trend that approaches the 50 percent of Ontario Drinking Water Aesthetic Objective of 250 mg/L ~~within fifteen years (2030)~~ (Golder, ~~2014~~2018).

According to the Golder 2018 report, groundwater at well E3 is derived mainly from the bedrock aquifer and receives chloride from a surface (anthropogenic) source, which results in decreased chloride when it is pumped at a high rate. Due to the fact that the chloride is from an anthropogenic source and concentrations at the well have been above 50% of the AO and are on an increasing trend, chloride should be considered and Issue at well E3 (Golder, 2018).

~~It is recommended that the chloride concentrations at Well E3 be described a drinking water issue per Technical Rule 115.1 under Section 15 (2) (f) of the *Clean Water Act, 2006*. Under this Technical Rule,~~ A~~a~~n Issues Contributing Area is ~~not~~ delineated for Elora Well E3 and therefore ~~there can be no~~ significant threat activities are identified which are associated with the c~~C~~hloride ~~i~~issue. The chloride Issue Contributing Area at Elora Well E3 is shown on **Map 6-36**.

~~The only applicable policies would relate to the monitoring of the chloride issue. Since the chloride concentrations are variable, although apparently increasing, this issue approach allows the Township time to complete further sampling and study into the trends, timing and fate / transport mechanisms for chloride at well E3.~~

Well E4, also located in the south part of Elora, ~~has good~~ currently meets ODWQS for all health related parameters~~water quality~~. There appears to be little groundwater impacts from surface sources of contamination. Chloride concentrations are below 10 mg/L, sodium concentrations are below 20 mg/L, nitrate concentrations are below 1 mg/L and sulphate concentrations are below 250~~300~~ mg/L. ~~Again, s~~Sulphate is naturally occurring in the area. It should be noted that zinc and iron concentrations increased in 2009 compared to previous and current concentrations; however, both are below the aesthetic objective.

~~The 2014 review confirmed the above findings related to sodium and chloride concentrations (Golder, 2014).~~Review of microbiological data for the Elora wells collected weekly indicates that no *E. coli* was detected in the three municipal wells in 2008. Total coliforms were detected ~~once~~

in 2008 and 2018 in Well E4 and Well E1, respectively. ~~at a concentration of 1 CFU/100 mL.~~ The absence of any *E. coli* detections, the minimal detections of total coliforms in the raw water samples collected from the municipal wells and no previous issues indicate that microbial water quality is not an Issue. However, it is important to monitor and ensure that the pathogen loading in the ~~Wellhead Protection Area~~WHPA is minimized or eliminated in accordance with the principles of source water protection.

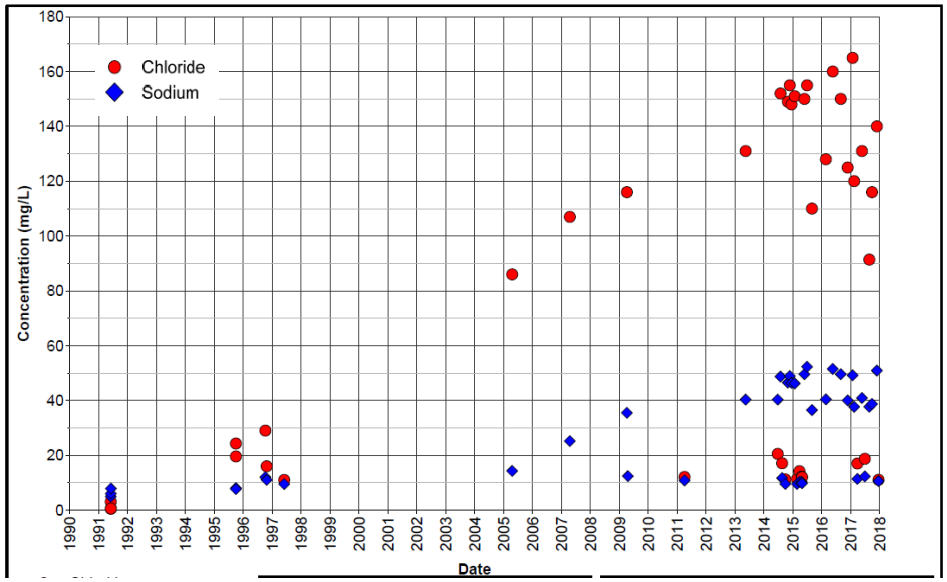


Figure 7-1: Sodium and Chloride Concentrations at Well E3, Elora, Township of Centre Wellington.

Fergus Drinking Water Issues Evaluation

A review of the water quality data for the Fergus Wellfield identified chloride and trichoroethylene Issues for drinking water source F1 under Rule 114. The c~~C~~hloride and t~~T~~richloroethylene Issue Contributing Area is mapped on **Map 6-36**.

~~No Issues under Rule 114 were identified with the drinking water sources for the Fergus wells. The presence of trichloroethylene (TCE) was noted at Well F1 as described below.~~

~~Well F1, with the exception of TCE and chloride, generally has good water quality~~Fergus well F1 has ~~slightly~~ e~~ve~~levated c~~C~~hloride concentrations that range up to 160 mg/L~~, but are~~ ~~are below 80 110 mg/L~~, sodium concentrations ~~are slightly above 20~~range ~~from 14 to 60~~up to 93 mg/L, nitrate concentrations are less than 1.5~~2~~ mg/L and sulphate concentrations are elevated and ~~are generally below~~range from ~~500~~ 481 to 670 mg/L~~. (Golder, 2010d).~~

The ~~2014~~ 2018 Golder review indicated that chloride concentrations range from 21 to 128~~10~~ mg/L for Well F1 and appear to be increasing, but ~~vary significantly~~show variation. The chloride c~~C~~oncentrations ~~remain below~~measured during a sampling event in 2019 was above the 50% of the On~~a~~tario Drinking Water Aesthetic Objective (AO) of 250 mg/L~~. The source of this variation is not clear currently and further study is required (Golder, 2014).~~

Groundwater at well F1 appears to be derived mainly from the overburden and shallow bedrock and receives chloride from a surface (anthropogenic) source, which results in increased chloride in the well when it is pumped at a high rate (Golder, 2018). Due to the fact that the chloride is from an anthropogenic souce and concentrations at the well have been above 50% of the AO and are potentially on an increasing trend, chloride should be considered an Issue at well F1.

Well F1 has historically contained elevated concentrations of TCE (Golder, 2010d). Since 2000, measured TCE concentrations have ranged from less than 1 µg/L to 32 µg/L. For comparison purposes, the Ontario Drinking Water Standard has recently been updated and the criterion is 5 µg/L. TCE concentrations have averaged about 15 µg/L from 2001 to 2003, decreasing to 12 µg/L from 2004 to 2006, and decreasing again to an average concentration of 6.6 µg/L from 2007 to 2009. Recent TCE concentrations from 2016 to 2018 range from 0.76 µg/L to 11.7 µg/L, with an average concentration of 7.6 µg/L. ~~In 2009, the concentrations ranged from 1.6 µg/L to 13.8 µg/L averaging 5.9 µg/L, which is a little above the applicable criterion (5 µg/L). The well operates with an air stripper and seems to function well, as the Township indicates that water quality results for TCE are at or below detection limits and the water continues to be used for public water supply.~~TCE concentrations have been declining and are occasionally below the maximum allowable concentration (MAC) of 5 µg/L; however, overall TCE concentrations remain above the MAC of 5 µg/L. Based on these exceedances and the absence of a known TCE source, Centre Wellington has now identified TCE at Well F1 as an issue under Technical Rule 114, such that TCE management policies under the Clean Water Act (Government of Ontario 2017) can be implemented.

The occurrence of TCE at F1 was investigated in 1990 after TCE was discovered in two private wells in September 1989. The report indicated that there may be numerous sources of TCE, with the sources occurring at various depths. In general, most of the sources are in close proximity and it is assumed that pumping F1 would contain them. With respect to the TCE at F1, Blackport Hydrogeology Inc. (2002c) indicates that the source of contamination was not verified. Further, Blackport Hydrogeology Inc. and Triton Engineering Services Limited (2008) concluded that the source of TCE is likely distant from the well as the elevated concentrations of TCE were found in a deeper zone of the open bedrock well.

In addition to F1 operating with an air stripper since 1991, treatment was added to two bedrock wells at a private site in about 1993 where water from these two wells has been pumped and treated continuously since that time with the treated water being discharged into a local storm water drain. All of these wells essentially act as containment wells to minimize the potential for further spreading of the TCE. The Township submits annual water quality and pumping reports to the MECP~~OE~~ for Well F1 consistent with the Drinking Water Regulations.

~~All available data indicates that the TCE treatment system is performing as designed and has done so for more than 10 years. Triton Engineering Services indicates that the system was originally designed to treat 1137 L/min with a raw water concentration of 100 µg/L. With an average taking from 2006 to 2008 of 537 L/min and the maximum raw water TCE concentration measured during that time at less than 20 µg/L, it appears that excess treatment capacity is available. Triton Engineering Services also indicate that there have been no incidences of the system being, or coming close to being, overwhelmed and that the system has been operating well within the design objectives since it was put into operation. Since the concentrations in the raw water appear to be decreasing to below the drinking water standard and the air stripper is effective in reducing the concentrations to below the drinking water standard, it is anticipated that the treatment system is sufficient in addressing this concern and no additional management plan is warranted at this time. It should be noted that the existing management plan should be formalized.~~

~~Well F2, located north of the Grand River in Fergus, is not currently in use for water supply purposes and historical data appears to be sparse. Summaries of water quality from previous studies indicate that the water quality is generally good. It appears that chloride concentrations are less than 90 mg/L, sodium concentrations are slightly above 20 mg/L, nitrate concentrations are less than 1 mg/L, sulphate concentrations are less than 200 mg/L and iron concentrations are around 0.1 mg/L. Blackport (2002c) indicates that iron concentrations become elevated if the well is pumped at a high rate.~~

Well F4, located in the northern part of Fergus, ~~generally has good water quality with~~ has elevated concentrations of iron. The iron concentrations in well F4 are greater than 0.6 mg/L, which is greater than the aesthetic objective of 0.3 mg/L. The iron is naturally occurring. Treatment is in place at F4 to filter out the iron to less than 0.3 mg/L prior to delivery into the distribution system. Chloride concentrations are generally less than 30 mg/L, sodium concentrations are slightly above 20 mg/L, nitrate concentrations are less than 0.3 mg/L and sulphate concentrations are less than 400 mg/L. ~~The 2014 review confirmed the above findings related to sodium and chloride concentrations (Golder, 2014).~~

Well F5, located in the southern limits of Fergus~~, has good quality water~~. Chloride and sodium concentrations are less than 20 mg/L, nitrate concentrations are less than 0.6 mg/L and sulphate concentrations are generally less than 100 mg/L. In 2009, a~~A~~luminum concentrations ~~may be increasing at well F5 and were first~~ recorded an above the operational guideline of 0.1 mg/L ~~in 2009~~; however concentrations have since been below the operational guideline. ~~The 2014 review confirmed the above findings related to sodium and chloride concentrations (Golder, 2014).~~

Well F6, located north of Fergus contains elevated levels of sulphate greater than the aesthetic objective of 500 mg/L. The sulphate is naturally occurring and is believed to be elevated at well F6 due to the influence of deeper flow systems within the well. ~~Chloride concentrations are less than 100 mg/L,~~ Ssodium concentrations are slightly above 20 mg/L~~,~~ and nitrate concentrations have not been detected. ~~It should be noted that the chloride concentration~~Chloride concentration were around 40 mg/L up to the mid-2008 and since 2009, concentrations have been variable

ranging from 10 to 88 mg/L. The concentrations are below 50% of the Ontatio Drinking Water Aesthetic Objective of 250 mg/L. An investigaton by Golder (2018) determined that high pumping at well F6 resulted in decreased chloride concentrations and that surficial recharge dominates at the high pumping. The low sulphate concentrations at high pumping indicates that a bedrock (natural) source of chloride at well F6 (Golder, 2018). increased in 2009 compared to previous concentrations measured, but is below the aesthetic objective. Iron concentrations are variable and exceeded the aesthetic Aesthetic objective Objective of 0.3 mg/L in 2009, 2011 and 2015. Iron is naturally occurring in the groundwater system. The 2014 review indicated that chloride concentrations range from 10 to 88 mg/L for Well F6 and appear to be increasing but vary significantly. Concentrations remain below 50% of the Onatrio Drinking Water Aesthetic Objective of 250 mg/L. The source of this variation is not clear currently and further study is required (Golder, 2014).

Well F7 is, located on the western side of Fergus, has good water quality. Chloride concentrations are less than 28mg/L, Ssodium concentrations are occasionally slightly above 20 mg/L, nitrate has not been detected and sulphate concentrations are less thanrange from 45100 mg/L to 317 mg/L. The 2014 review confirmed the above findings related to sodium and chloride concentrations (Golder, 2014). Chloride concentrations measured at well F7 range from 7 to 29 mg/L. There is no long term historical record of water quality at F7, however, the available data indicates that chloride concentrations are low and variable with no apparent increasing trend. The concentrations are below 50% of the Ontatio Drinking Water Aesthetic Objective of 250 mg/L. An investigaton by Golder (2018) determined that high pumping at well F7 resulted in increased chloride concentrations and that a bedrock water source dominates at the high pumping. The higher sulphate concentrations at high pumping indicates that a bedrock (natural) source of chloride at well F6 (Golder, 2018)

Review of microbiological data for the Fergus wells (F1, F4, F5, F6, F7) collected weekly indicates that no *E. coli* was detected in 2008. from 2015 to 2018. Total coliforms were only detected three a total of seven times in 2008from 2015 to 2018 at F1 at concentrations of 1 CFU/100 mL. and once resampled to detection of total coliforms were present. No samples were collected from F2 as it was not in use.

GUDI assessments have also been conducted at Wells F1 and F2 as they are located adjacent to the Grand River and have only a limited thickness of overburden above the bedrock. The studies concluded that Well F1 showed a low risk of contamination from surface sources but Well F2 was classified as GUDI. The absence of any *E. coli* detections and the minimal detections of total coliforms in the raw water samples collected from the municipal wells indicate that microbial water quality is not an Issue. However, it is important to monitor and ensure that the pathogen loading in the Wellhead Protection Areas is minimized or eliminated in accordance with the principles of source water protection.

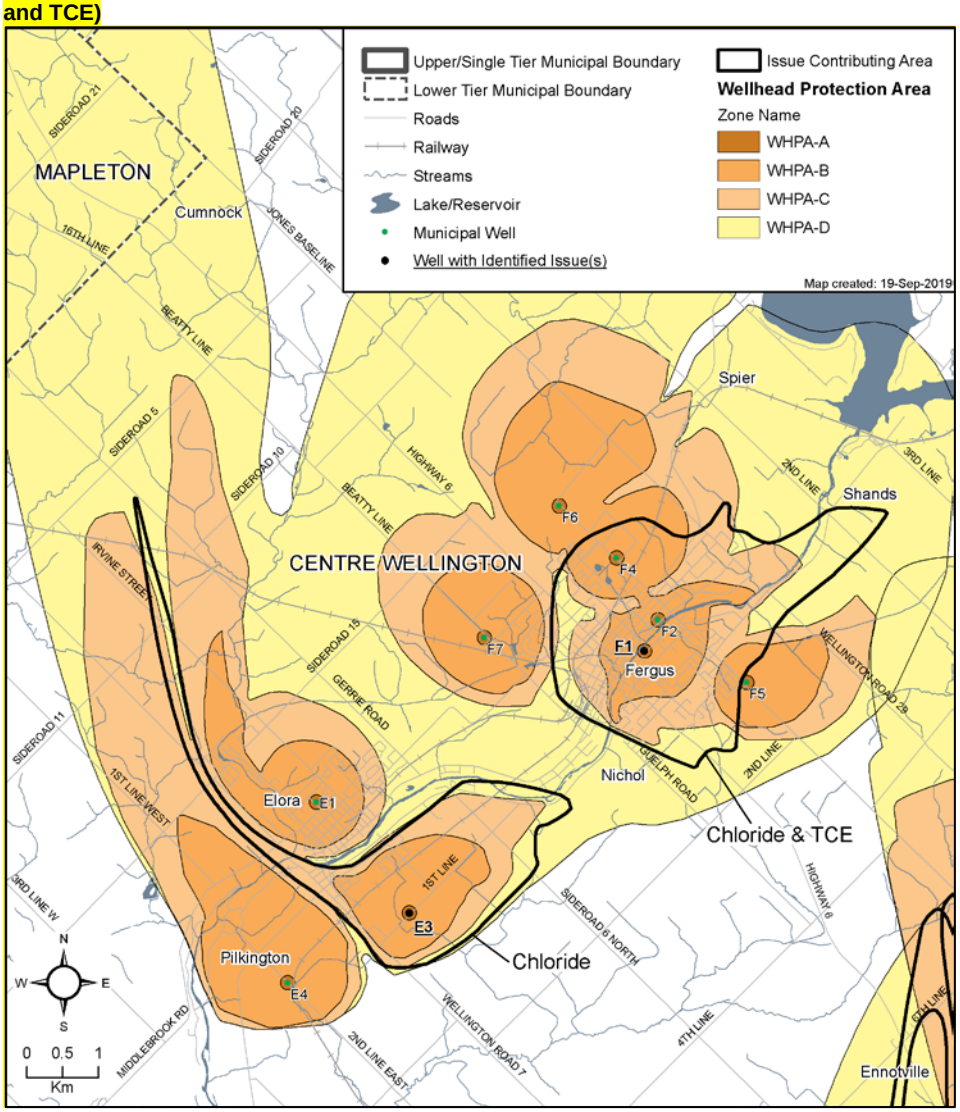
Summary of Drinking Water Issues Evaluation

Chloride concentrations at Well E3 and F1 appear to be on an increasing trend with concentrations measured above 50% of the Ontario Drinking Water Aesthetic Objective of 250 mg/L. Measured chloride concentrations at wells E3 and F1 is from shallow sources and potential chloride sources exist within the capture zones; therefore, Issue Contributing Areas were delineated for Wells E3 and F1. TCE concentrations continue to remain near 50% of the MAC; therefore a TCE Issue Contributing Area was delineated for F1.

ICAs were delineated for Wells F1 and E3 using backward particle pathlines simulated using the Base Case model scenario, where the time-of-travel to each well is less than or equal to 25 years. Delineation of the ICAs was done using the same method as described above in Section 6.3.2 for delineating the Centre Wellington WHPAs. A 25-year capture zone for each well, for each set of pumping rates, was delineated and then combined to create a single ICA for each well. The pumping rates used were both exisiting and future rates (Matrix, 2018). The Issue Contributing Areas are shown on **Map 6-36**.

~~The review of the data for the Elora and Fergus wells indicated no Issues under Rule 114 are present.~~

Map 6-36: Issue Contributing Areas for Elora E3 (Chloride) and Fergus F1 (Chloride and TCE)



6.3.6 Enumeration of Significant Drinking Water Quality Threats

The Technical Rules require an estimation of the number of locations at which an Activity is a significant drinking water threat and the number of locations at which a Condition resulting from past activity is a significant drinking water threat.

6.3.6.1 Initial Enumeration of Significant Drinking Water Threats

For the 2012 Assessment Report, t~~T~~he initial enumeration of land use activities that may be associated with prescribed drinking water threats was based on a review of multiple data sources, including public records, data provided through questionnaires completed by municipal officials, previous contaminant/historical land use information, and data collected during windshield surveys. No site specific information was collected. ~~As more site specific information becomes available during the source protection planning process, the presence of drinking water threats and their current level of management can be confirmed.~~

Drinking water threats as defined in the Ontario Clean Water Act (2006) were identified within the Centre Wellington Wellhead Protection Areas through an enumeration of land use activities that may be associated with Prescribed Drinking Water Threats (Ontario Regulation 287/07).

~~The main objective of the assessment was to identify significant threats. A significant threat to a source of drinking water has a high likelihood of rendering a current or future drinking water source impaired, unusable or unsustainable, combined with a potential route for the threat to enter the source water.~~

Data Sources for the Enumeration of Significant Drinking Water Threats

For the initial enumeration in the 2012 Assessment Report, t~~T~~he key data sources used to identify threats on properties within the Wellhead Protection Areas include the following:

- Municipal Property Assessment Corporation (MPAC) assessment information;
- Hazardous Waste Information Network (HWIN) database;
- Technical Safety and Standards Authority (TSSA) database;
- Discussions with Triton Engineering Services to identify current and historical land use activities;
- Review of previous threats inventory by Triton Engineering Services;
- Review of air photos; and
- Review of Schedule B of the Municipal Official Plan for the Township of Centre Wellington (2005).

The Township of Centre Wellington operates under both the County of Wellington Official Plan and the Township's Official Plan. The general policies apply to the entire Township and the land use of the County Official Plan applies to the rural areas. The Township Official Plan applies to the urban centres of Fergus and Elora. The Township provided copies of their Official Plan that was approved by the Ontario Municipal Board in May 2005 and a Consolidated Official Plan as of July 2008. The following provides some of the pertinent information directly from the Consolidated Official Plan as it relates to land uses and source water protection.

A review of these land uses within vulnerability zones of 10 (i.e., locations of significant chemical and pathogen threats) within the urban boundary indicates that all of the land uses, except Highway Commercial and Residential Transition Area, are present. In addition, all the land uses, except Residential Transition Area are present within WHPA-C, which are possible locations for DNAPL threats. The same threats that were associated with the various MPAC property codes can also be assumed for similar land use planning zones, for example, application of commercial fertilizer to recreational areas.

The completed threat enumeration has involved numerous assumptions regarding the threat types and circumstances associated with various property types based on current land use information and existing data sources. An inventory of potential future land uses and associated threats, constrained within the official plan, would involve additional assumptions. It should also be noted that the approvals process in Wellington County requires a site specific investigation and impact assessment associated with the proposed activities and the appropriate monitoring and mitigation plans. Therefore, before the County would approve any zoning change, or issuance of a building permit, these conditions of the Counties current groundwater management plan would need to be met.

Assumptions for the Enumeration of Significant Drinking Water Quality Threats
A standardized set of assumptions (**Table 6-29**) were made for each land use type and activity, a summary is provided below:

- All properties with identified agricultural managed lands were based on MPAC codes;
- Areas were applied pesticides were determined by calculating the area of the parcel with agricultural managed lands;
- Assumptions with respect to type of facility, mass or material and storage;
- Assumed surrounding land uses;
- Only areas outside the municipal wastewater serviced areas and were identified as being on septic systems; and
- Assumed hazard scores based on property codes.

Table 6-31: Land Use Activity Assumptions for the Purpose of Enumerating Significant Drinking Water Quality Threats in the Centre Wellington Well Supply

Scenario	Assumption
Agricultural property with residence and outbuildings	• Storage and handling of pesticides, fuel, commercial fertilizer, agricultural source material, septic system. • Application of pesticide, commercial fertilizer, agricultural source material.
Agricultural property with residence and outbuilding – buildings not in WHPA	• Circumstances related to storage and handling or septic systems are not applied. Those related to application are applied.
Agricultural property without farm buildings and structures	• Circumstances related to storage and handling or septic systems are not applied. Those related to application are applied.
Residence with no gas line	• Oil furnace

Table 6-31: Land Use Activity Assumptions for the Purpose of Enumerating Significant Drinking Water Quality Threats in the Centre Wellington Well Supply

Scenario	Assumption
Organic solvent	• Storage below grade in a quantity that would make it a significant threat
No sanitary sewer infrastructure	• Septic system
Presence of any chemical	• Storage is below grade
Multiple PINs associated with one Assessment Roll number	• One threat point assigned to the entire assessed property.
Where an assessment line transects a property, but has one PIN	• One threat point assigned to the entire property.
Lawn/turf	• Potential application of commercial fertilizer (ID dependent on the percent of managed land and the application of NU to the surrounding properties)
Municipal well sites	• Commercial fertilizer not applied unless the well is within a municipal park, in which case there is potential that fertilizer is applied.
All properties	• If buildings and structures are located outside the vulnerable area – circumstance IDs associated with storage and handling are not applied
Septic system	• In serviced villages where sanitary services are being phased in, but have not yet reached the mandatory connection date, it is assumed private septic systems are still present.
Sanitary sewers	• A sanitary sewer is a linear feature. For the purposes of enumeration of threats, where a sanitary sewer is present one threat point is assigned to represent the sanitary sewer in each WHPA.
Storm sewer piping	• Storm sewer piping is not considered to be part of a storm water management facility.

6.3.6.2 Enumeration of Significant Drinking Water Threats for 2019 Assessment Report

Since the initial enumeration of significant drinking water threats for the 2012 Assessment Report, a substantial amount of work has been completed by municipal Risk Management staff and consultants to verify threats at a site level. This work has included additional air photo analysis, site visits, windshield surveys, review of databases and site specific files / reports. The focus of this work is to compete verification of significant drinking water threats and where warranted negotiate risk management plans and to conduct inspections. This work has been focused within the wellhead protection areas delineated in the 2012 and 2015 Assessment Reports. New wellhead protection areas have now been delineated, however, there is overlap between the 2015 and the new wellhead protection areas.

For purposes of updating significant drinking water quality threats in the newly delineated wellhead protection areas, a review is being conducted of the existing database of verified threats, municipal servicing data and air photos. Results will be updated in the Assessment Report prior to public consultation. For purposes of identifying significant drinking water quality threats within

the Chloride Issues Contributing Area, all properties present within the Issues Contributing Area have been identified as significant drinking water quality threats.

Significant Drinking Water Quality Threats in the Elora Wellhead Protection Areas

The results of the Elora threat enumeration are presented by threat type. A summary of the threat ranking results for each Wellhead Protection Area, grouped by threat type, is presented in **Table 6-30**.

Table 6-32: Significant Drinking Water Quality Threats in the Elora Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	4	WHPA-A WHPA-B
2	Sewage System or Sewage Works- ~~Septic~~ Onsite Sewage Systems	1	WHPA-A
	Sewage System or Sewage Works- Sanitary Sewers and related pipes	1	WHPA-A WHPA-B
3	Application of Agricultural Source Material to Land	3	WHPA-A
8	Application of Commercial Fertilizer	2	WHPA-A
10	Application of Pesticides to Land	3	WHPA-A
12	Application of Road Salt	793	ICA
13	Handling and Storage of Road Salt	793	ICA
14	Storage of Snow	793	ICA
16	Handling and Storage of DNAPLs	30	WHPA-A WHPA-B WHPA-C
17	Handling and Storage of Organic Solvents	4	WHPA-A WHPA-B
Total Number of Activities		**48**	
Total Number of Properties		**34**	

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Significant Drinking Water Threats in the Fergus Wellhead Protection Areas

The results of the Fergus threat enumeration are presented by threat type. A summary of the threat ranking results for each Wellhead Protection Area, grouped by threat type, is presented in **Table 6-31**.

Table 6-33: Significant Drinking Water Quality Threats in the Fergus Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	26	WHPA-A WHPA-B
2	Sewage System or Sewage Works- Onsite Sewage~~Septic~~ Systems	23	WHPA-A WHPA-B
	Sewage System or Sewage Works- Sanitary Sewers and related pipes	1	WHPA-A WHPA-B
3	Application of Agricultural Source Material to Land	2	WHPA-A
10	Application of Pesticides to Land	2	WHPA-A
12	Application of Road Salt	3863	ICA
13	Handling and Storage of Road Salt	3863	ICA
14	Storage of Snow	3863	ICA
14	Storage of Snow	1	WHPA-A
15	Handling and Storage of Fuel	1	WHPA-B
16	Handling and Storage of Dense Non-Aqueous Phase Liquids	79	WHPA-A WHPA-B WHPA-C
17	Handling and Storage of Organic Solvents	26	WHPA-A WHPA-B
Total Number of Activities		**161**	
Total Number of Properties		**108**	

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

According to the Ministry of the Environment's Table of Drinking Water Threats, there are no significant threats in WHPA-E zone for Well F2 based on the vulnerability scores.

Limitations and Uncertainty for the Enumeration of Significant Drinking Water Threats

- The threat assessment is a desktop scale analysis based on the assumptions used for the threat rankings. The assessment has involved only minor field verification or site visits to validate the information. The current assessment identifies significant water quality threats based on a number of assumptions and site visits to confirm actual site conditions and circumstances were not conducted. Site visits may be needed to confirm the actual site conditions and circumstances and in some cases to develop site specific response and risk management activities.

- The threat assessment has relied on a number of pre-existing data sources to complete the evaluation. In some cases the existing data sources are not current. Activities taking place on a given property may change from year to year or month to month.

- The MPAC property codes, used to identify the use of the property and the associated threats, do not always represent the current land use activity on the property. As such,

Commented [KD1]: This section will need to be updated once the threat enumeration is complete for the new areas. This section could get moved to the 2012 / 2015 enumeration section.

threats may be applied to a property where they do not exist or vice versa, threats may have been missed on a property where they do exist.

- To confirm whether the sites identified as potential Conditions meet the criteria to be a Condition threat, all documentation relating to the potential Conditions would need to be obtained from the MOE or other agencies and reviewed to understand the current status of these sites.

- The location of a threat Activity on a property was assumed to be over the most vulnerable portion of a property where more than one vulnerability score zone was present on the property.

- As noted in Section 6.3.2, the vulnerability score has not been updated to be consistent with the most recent geological understanding developed during the Tier 3 studies.

- The results of this assessment are to be used for development of source protection plans at the wellhead protection area scale of analysis only; and should not be used, and are not intended for use, at the scale of the individual property.

6.4 Township of Guelph-Eramosa

Two municipal groundwater systems are located within the Township of Guelph-Eramosa: Rockwood Water Supply and Hamilton Drive Water Supply. The area serviced by these two systems is shown on **Map 6-37.** The Guelph serviced area is also shown on this map to provide additional context. **Table 6-32** and **Table 6-33** summarize the municipal groundwater systems and the average monthly and annual pumping rates for both systems.

Table 6-34: Municipal Residential Drinking Water System Information for the Township of Guelph-Eramosa in the Grand River Source Protection Area (Rockwood and Hamilton Drive Water Supply Systems)

DWS Number	DWS Name	Operating Authority	GW or SW	System Classification[1]	Number of Users served[2]
220005599	Rockwood Water Supply System	~~Ontario Clean Water Agency (OCWA)~~Guelph / Eramosa Township	GW	Large Municipal Residential System	~~3,970~~1635
220009197	Hamilton Drive Water Supply System	~~Ontario Clean Water Agency (OCWA)~~Guelph / Eramosa Township	GW	Large Municipal Residential System	216~~653~~

1 as defined by O. Reg. 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002.*

2 Based on ~~Ontario Clean Water Agency 2008 Annual Summary Reports (2009a, 2009b)~~ Watson & Associates Economists LTD. The Township of Guelph / Eramosa Water and Wastewater Rate Study (July 2015)

Table 6-35: Annual and Monthly Average Pumping Rates for Rockwood and Hamilton Drive Water Supply Systems

Well or Intake	Annual Avg. Taking[1] (m^3/d)	Monthly Average Taking[1] (m^3/d)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rockwood													
Well 1	~~285.48~~29 2.96	3.31~~35 2.84~~	240.10 ~~261.93~~	230.13 ~~189.52~~	232.65 ~~185.07~~	392.77 ~~251.03~~	331.92 ~~348.57~~	305.18 ~~252.61~~	315.27 ~~323.81~~	361.69~~3 03.80~~	296.36~~2 27.61~~	318.40~~4 27.17~~	487.76 ~~301.81~~
Well 2	~~216.87~~23 8.05	279.64 ~~68.0~~	3.89~~15 1.86~~	~~174.39~~ 205.83	~~284.90~~ 257.76	237.49 ~~371.52~~	325.94 ~~296.97~~	303.58 ~~326.94~~	277.76 ~~265.45~~	333.69~~2 70.07~~	292.67~~2 16.42~~	230.56~~1 0.6~~	~~165.42~~ 107.84
TW3/02	~~410.94~~38 0.55	~~422.52~~ 617.10	~~418.40~~ 625.08	370.23 ~~466.13~~	355.13 ~~451.94~~	382.15 ~~398.71~~	335.65 ~~387.62~~	~~448.92~~ 337.81	~~341.52~~ 312.42	~~355.54~~2 85.63	~~421.16~~2 94.04	~~401.89~~3 07.56	~~417.01~~ 343.77
Hamilton Drive													
Cross Creek	~~91.48~~69.8 0	~~73.23~~5 4.90	~~72.78~~7 4.62	~~77.53~~7 4.95	~~88.36~~4 .27	~~113.93~~ 90.11	~~117.38~~ 108.75	~~124.92~~ 83.76	~~94.46~~7 7.16	~~99.46~~6 3.31	~~70.96~~ 41.90	~~80.91~~ 42.88	~~78.63~~ 60.88
Huntington	~~90.48~~73.0 8	~~78.56~~8 .33	~~73.86~~4 1.11	47.31~~6 9.36~~	~~86.49~~6 4.39	~~97.51~~8 0.49	~~111.05~~ 57.04	~~113.95~~ 111.78	~~105.94~~ 98.23	~~98.44~~9 0.49	~~84.27~~ 72.77	~~81.16~~ 71.57	~~85.22~~ 73.50

1 source: Based on ~~Ontario Clean Water Agency~~Guelph / Eramosa Township ~~2008~~ 2018 Annual Summary Report~~s~~ (~~2009a, 2009b~~2019)

Hydrogeological Setting

The Township of Guelph/Eramosa is located within the Speed/Eramosa River Subwatershed and the Hopewell Creek and Cross Creek catchments of the Grand River Drainage Basin. Land in the area generally slopes towards the Eramosa River and Speed River.

Overburden Geology

Overburden units deposited during the Quaternary Period (2 million years before present [ybp] to 10,000 ybp) detail a period of repeated ice advance and retreat of ice lobes that originated from the Erie-Ontario lake basin (Karrow 1967). Overburden deposits range in thickness from 10 to 30 m near Hamilton Drive and from less than 1 m to 15 m in Rockwood according to water well logs. These overburden deposits are largely fine-grained till and glaciolacustrine deposits. Due to the predominance of largely fine-grained overburden sediments, overburden has not been typically targeted as a source of municipal water supply in these areas (Matrix, 2018).

Coarse-grained materials in the area may form shallow overburden aquifers, as seen south of the City of Guelph, but these granular deposits are not laterally extensive. However, there is a potential connection between the surface and the deeper production zone of the middle Gasport Formation through overburden aquifers in buried bedrock valleys where the thickest overburden sediments are present. The bedrock valley infill tends to be coarser in nature; mainly sand with minor silt-rich beds and capped by finer grained sediments at surface near Rockwood (Burt and Webb 2013). Just north of Rockwood and southeast of Everton, the valley sand is interpreted to be partially overlain by coarser grained glaciofluvial outwash that outcrops at surface.

~~The quaternary geology of the Township consists primarily of Wentworth Till. Wentworth Till is described as sandy silt till that does not readily transmit water. Outwash deposits of sand and gravel occur as kames and eskers across the Township (Golder, 2006a). Ice contact stratified drift deposits and glaciofluvial deposits are located in the Rockwood area. The area of the Hamilton Water Supply System wells is dominantly Wentworth Till with some glaciofluvial deposits and sand deposits. Bedrock outcrops and organic deposits are found along the Speed River and Eramosa River.~~

~~The overburden thickness in the Township is generally less than 25 m. Overburden is thickest along glacial deposits ranging from 25 to 75 m (Golder, 2006a). The Rockwood area consists of minimal overburden cover that ranges from no overburden in the area of the Eramosa River to just over 6 m in the area of the production wells. At the Cross Creek area the overburden can be up to 21 m thick while at the Huntington site the overburden is only 3 m thick.~~

Bedrock Geology

Bedrock geology beneath the Study Area consists of Paleozoic limestone, dolostone, and shale formations that overlie deeply buried Precambrian crystalline basement rocks (Armstrong and Carter 2006). Bedrock formations dip regionally to the southwest and record deposition related to sea level changes in a shallow subtropical sea during the Paleozoic Era (approximately 440 to 420 million years ago).

~~The bedrock in the study area consists of the Silurian age dolostone of the Guelph and Gasport Formations. The bedrock in the Rockwood area consists of dolostone from the Gasport Formation. The bedrock in the area of the Cross Creek and Huntington Wells consists of brown or tan dolostone of the Guelph Formation and is encountered at depths between 3 m and 21 m below ground.~~

Hydrogeology

Bedrock aquifers in the Guelph Formation and Gasport Formation are the ~~principal~~ main source of groundwater in the Township. The spatial distribution and subsurface geometries of the major bedrock units are important in understanding patterns in the groundwater flow system and potential hydraulic connections between aquifer units.

The Guelph Formation is the shallowest bedrock unit, is characterized as an aquifer, and near Hamilton Drive ranges in thickness from 2 to 28 m and generally thins toward the south. Near Rockwood, this unit is only present west of the Eramosa River, west of Rockwood, and ranges in thickness from 2 to 15 m (Matrix, 2018).

The Reformatory Quarry Member of the Eramosa Formation lies beneath the Guelph Formation and is characterized as a weak aquitard. Near Hamilton Drive, the Reformatory Quarry Member ranges in thickness from 0 to 50 m. It is thickest in the west and near the municipal wells, thinning toward the east. In Rockwood, this unit is more prevalent in the vicinity and west of the municipal wells, and ranges in thickness from 0 to 19 m. The distribution of this unit is controlled by post-depositional erosion; its absence is most visible near buried bedrock channels (Matrix, 2018).

The Vinemount Member of the Eramosa Formation lies beneath the Reformatory Quarry Member and is characterized as a regional aquitard. Near Hamilton Drive, the Vinemount Member ranges in thickness from 1 to 9 m. The Vinemount Member plays a significant role in subsurface groundwater flow, separating upper and lower bedrock aquifers. In Rockwood, the Vinemount Member is shown to be eroded by channels and infilled with overburden sediments, suggesting potential hydraulic interaction of deep aquifers (e.g., Gasport Formation) with either the near-surface aquifers or surface water (e.g., Eramosa River) in topographic valleys (Matrix, 2018).

The Goat Island Formation, which thickens and thins in response to the absence or presence of reef mounds in the underlying Gasport Formation, ranges in thickness from 0 to 26 m near Hamilton Drive. In Rockwood, this unit is prevalent and ranges in thickness from 0 to 17 m. The presence of this unit is controlled by post-depositional erosion; its absence is most visible near buried bedrock channels (Matrix, 2018).

The Gasport Formation is one of the main source aquifers in the area of Rockwood and Hamilton Drive. The upper Gasport Formation ranges in thickness from 4 to 33 m in the Hamilton Drive area and 0 to 33 m in the Rockwood area, while the middle Gasport Formation is approximately 12 m thick across these areas. Coarse-grained fill sequences in these valleys suggest a potential hydraulic connection between the middle Gasport Formation and the near-surface aquifers. The lower Gasport Formation ranges in thickness from 4 to 13 m near Hamilton Drive and 0 to 26 m in Rockwood. The Gasport Formation horizons appear relatively constant in thickness, except where eroded by bedrock valleys and built up as reef mounds. In areas where the Vinemount Member has been eroded, the Gasport Formation may be hydraulically connected to the near-surface aquifer units and/or surface water features (Matrix, 2018).

The Cabot Head Formation acts as a regional aquitard and represents the bottom of the active groundwater flow system.

~~The aquifer in the Rockwood area has a maximum thickness of approximately 60 m. The permeability of the dolomite is due to the chemical dissolution of dolomite along fractures, reef structures and bedding planes, resulting in a large variety of openings within the bedrock. As a result the permeability of the bedrock aquifer can vary substantially. Municipal wells are often~~

~~drilled to the bottom of the formation (60 m at Rockwood Wells 1 and 2) in order to intercept as many water bearing fractures as possible. The aquifer is regarded as being unconfined as there are no overlying confining layers and areas of exposed bedrock occur frequently in the area of the wells.~~

~~Within the study area, highest recharge areas are associated with topographically elevated areas and permeable formations such as sand and gravel deposits in the vicinity of Eden Mills (Golder, 2006a). Most of the remainder of the Township is considered to be a recharge area, but with lower vertical gradients. Groundwater discharge within the town is associated with tributaries of the Eramosa River.~~

6.4.1 Rockwood Water Supply System

The Rockwood Water Supply System services a population of approximately 1,635~~3,970~~ people (2015~~08~~) in the Village of Rockwood. ~~and consists of three municipal groundwater wells and two pumphouses: the Station Street Pumphouse and the Bernardi Pumphouse. A fourth well is not currently online but has been identified as a future municipal supply well.~~ There are four municipal supply wells in the Town of Rockwood and two pumphouses (Station Street and Bernardi). The production zone of the middle Gasport Formation is the target bedrock supply aquifer in this area. Drinking water for Rockwood is currently supplied from three wells including Rockwood Well 1 (TW1-67), Well 2 (TW1-76), and Well 3 (TW3/02). A fourth Rockwood bedrock well (Well 4; TW2-14) was constructed in 2014, on a site previously identified as being suitable for a production well (i.e., site of TW2-02; Burnside 2015). Well 4 was permitted in 2015 as part of a consolidated Permit To Take Water (PTTW) for the four wells and Well 4 will eventually be put into production. Rockwood Well 1 and Well 2 are contructed approximately 60 m bgs into the fractured Gasport bedrock aquifer. Rockwood Well 3 and Well 4 are constructed approximately 50 m bgs and 62 m bgs, respectively into the Gasport bedrock aquifer.

Rockwood Wells 1 and 2 are designated Groundwater Under the Direct Influence of surface water (GUDI) “based on the karstic nature of the area, the proximity of the bedrock to the surface and the immediate response to pumping recorded in the shallow bedrock at a nearby monitoring well. These occurrences indicate that the wells likely respond directly to recharge over the bedrock outcrops.” (Burnside, 2010). Rockwood Wells 3 and 4 are not designated as GUDI.

~~Rockwood Wells 1 and 2 are both inside the Station Street Pumphouse located west of Main Street and south of the Canadian National Railway Line. Rockwood Well 2 (also known as TW#1-67) was constructed in 1967 as a municipal source for the village. Rockwood Well 2 is a 300 milimetres (mm) diameter well drilled to a depth of 59.1 metres (m). A second well, Well 1 (also known as TW#1-76), was constructed in 1976. Rockwood Well 1 is a 250 mm diameter well that is 60.4 m deep and is completed as an open hole in the bedrock starting from 10 m. The overburden is approximately 6 m thick at both wells and consists of stony gravel with some clay. The bedrock is part of the heterogeneous, layered and fractured Gasport aquifer.~~

~~In March 2002, 150 mm and 200 mm diameter liners were installed in Rockwood Wells 1 and 2, respectively. The liner in Well 1 was installed to a depth of 36.5 m and the liner in Well 2 was installed to a depth of 38.4 m. The liners were installed to seal off shallow water producing intervals that caused cascading conditions from the open bedrock hole (Burnside, 2002b).~~

~~Rockwood Well TW3/02 (also known as the Bernardi Well and Well 3), is located approximately 5 m to the north of the Bernardi Pumphouse. The Bernardi Pumphouse is located southeast of the Eramosa River and adjacent to the Town boundary. Well 3 was drilled in 2002 as a 150 mm diameter test well and was reconstructed to a diameter of 250 mm in 2004 so it could be used as a supply well. At this site, overburden sediments were encountered from ground surface to 12.6 m below grade. Brown/ grey limestone bedrock was encountered between 12.6 and 66 m. Below 66~~

~~m, the well penetrated red shale to a depth of approximately 73 m. The bottom of the well below 50 m was sealed and a large fracture between 45.7 to 48.8 m was further developed to enhance the production from the well (Burnside, 2002c).~~

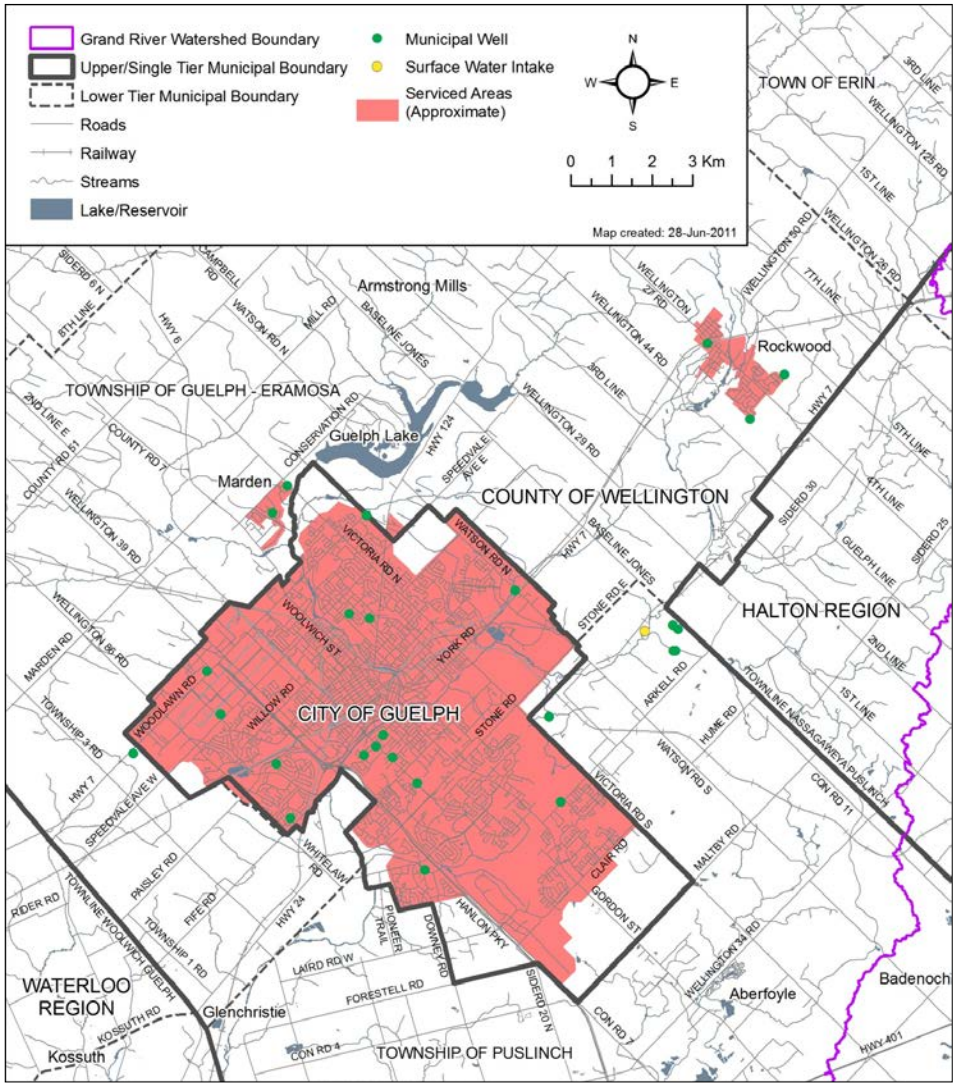
~~Rockwood Well TW2/02 (Well 4) is not currently online, but has been identified as a future municipal supply well. TW2/02 is located east of Highway 7 and south of the Eramosa River. This Well was drilled in 2002 as a 150 mm diameter test well to a depth of 68.58 m below grade. At this site, overburden sediments were encountered from ground surface to 12.6 m below grade. Brown/ grey limestone bedrock was encountered between 12.6 and 62 m. Below 62 m, the well penetrated red and grey shale to a depth of approximately 68.58 m (Burnside, 2002c). The well was constructed at the same time as TW3/02 when the Village was looking for future water supply wells. Both wells were tested and TW3/02 was chosen for development, however, plans to use TW2/02 for future supply remain in place.~~

6.4.2 Hamilton Drive Water Supply System

The Hamilton Drive Water Supply System services a population of approximately 216~~653~~ people (2008) in a community located just north of the City of Guelph. The system services the geographical area bounded by Victoria Road to the east, Conservation Road to the north, Highway 6 to the west and the Speed River to the south. The Hamilton Drive Water Supply System consists of two municipal groundwater wells located at two pumphouses: the Cross Creek Pumphouse and the Huntington Pumphouse. The Cross Creek Well, also known as Cross Creek PW3, ~~was drilled in 1990. The well was completed as a 250 mm diameter well with a steel casing to 21.3 m and a 200 mm steel casing to 39.6 metres. The well~~ is an open bedrock hole in bedrock from 39.62 m to a depth of 99 m bgs within the Reformatory Quarry member of the Eramosa Formation. ~~The bedrock is overlain by 21.3 m of clay overburden.~~ The Huntington Well also known as Huntington Estates PW1, is ~~was drilled in 1986 and is a 200 mm well with~~ an open hole in bedrock~~bedrock interval~~ from 12.5 to 71.9 m ~~below grade~~bgs~~. The well is completed in~~within the Guelph and middle Gasport Formations~~ and is overlain by 3 m of till.~~.

The Cross Creek and Huntington Estates Wells are not designated as GUDI.

Map 6-37: Guelph, Rockwood and Hamilton Drive Water Supply System Serviced Areas



6.4.3 Vulnerability Analysis

~~***Delineation of Wellhead Protection Areas***~~

~~The delineation of Wellhead Protection Areas represents the foundation of a municipal groundwater protection strategy. Wellhead Protection Areas associated with the municipal water supply represent the areas within the aquifer that contribute groundwater to the well over a specific time period. According to the *Clean Water Act* Technical Rules (November 2009), four Wellhead Protection Areas are required, one a proximity zone and the three others time-related capture zones:~~

- ~~WHPA-A 100 m radius from wellhead~~
- ~~WHPA-B 2-year Time of Travel (TOT) capture zone~~
- ~~WHPA-C 5-year Time of Travel capture zone~~
- ~~WHPA-D 25-year Time of Travel capture zone~~

Modelling Approach for the Rockwood and Hamilton Drive Water Supply Systems

The numerical modelling completed for the Rockwood and Hamilton Drive study area used the FEFLOW groundwater flow model developed for the Guelph/Guelph-Eramosa Tier 3 Assessment (Matrix, 2017). In the area of Rockwood and Hamilton Drive, the Tier 3 model was calibrated to long-term average water levels, baseflow estimates, and to transient water level response data from constant rate pumping tests performed at Rockwood Wells 3 and 4. Transient verification simulations were also performed for the Hamilton Drive and Rockwood areas, and results showed that the model was able to represent the expected response of the shallow and deeper groundwater systems to varying recharge and pumping stress over a 5-year period (2008 to 2012; Matrix 2017).

The capture zones and WHPAs delineated for this study are based on a Base Case scenario model and three alternative uncertainty scenarios developed as part of a sensitivity analysis.

Base Case Scenario

The calibrated Guelph/Gueph-Eramosa Tier 3 FEFLOW model is referred to as the Base Case scenario. The pumping rates for the Rockwood wells (**Table 6-34**) represent future rates derived during the Tier 3 Assessment and were based on water use forecasts to reach build-out in 2026 (Matrix, 2017). The total future pumping rate derived for all of Hamilton Drive during the Tier 3 Assessment was 185 m^3/day and was based on water consumption forecast estimates to 2020 (Matrix, 2017). This rate was assigned to both the Cross Creek and Huntington Estates wells for the current WHPA delineation work assuming that either well may have to accommodate the future demands of the subdivision community in the event that the other well goes offline for maintenance or other reasons.

Table 6-36: Water Takings from Municipal Production Wells in the Rockwood and Hamilton Drive Well Supply

Well	Permit to Take Water (m^3/day)	Rate Used to Delineate WHPA (m^3/day)
Rockwood 1	1,965	763
Rockwood 2	1,965	
Rockwood 3	1,310	572
Rockwood 4	1,310	572

Huntington Estates	812	185
Cross Creek	916	185

Sensitivity Scenarios

A sensitivity analysis was completed to estimate the effects of model parameter uncertainty on the size and shape of the predicted capture zones. Some groundwater flow model input parameters have greater uncertainty than others. The sensitivity analysis involved adjusting the calibrated Base Case model parameters and evaluating the change in particle tracking results used to delineate the capture zones. Specifics on the sensitivity scenarios are in the Matrix 2018 report 'Township of Guelph/Eramosa Wellhead Protection Area Delineation, Vulnerability Scoring, and Transport Pathways Assessment Report.'

Virtual particles can be released in a groundwater flow model and tracked forward or backward in time through the subsurface for various time intervals. The computed pathlines travelled by these particles are projected to the ground surface and plotted on a plan view map. Time-of-travel capture zones are subsequently created by drawing polygons around the well and the particle pathlines for specific time intervals. As such, capture zones represent the land areas beneath, which water and contaminants located at and below ground surface may migrate toward a well within a specified period. All particle tracks of the Base Case and sensitivity scenarios were rotated by +/- 5 degrees around each municipal well to account for some uncertainty in the groundwater flow direction.

~~The Township delineated Wellhead Protection Areas (WHPAs) for the municipal supply wells as part of their previous groundwater management study (Golder, 2006b). The Wellhead Protection Areas were delineated using the FEFLOW Guelph-Puslinch Groundwater Model. The groundwater model was calibrated (using a regional parameterization approach) to groundwater elevations from over 4,500 water well information system (WWIS) locations and 302 higher quality monitoring wells, as well as base flow estimates from both longterm and non-permanent stream flow monitoring stations. The NRMS error for the calibration is reported as being 2.9% for all data combined which is considered to be within the acceptable limits of less than 10% for numerical models (Golder, 2006b).~~

~~The groundwater model used for the delineation of the Wellhead Protection Area was developed by Golder (2006b). The model assumes that the groundwater flow systems are equivalent porous media at the scale of the time-related capture zones under consideration. While groundwater flow in bedrock aquifers occurs primarily in the fractures, the use of an equivalent porous medium approach can still provide a reasonable approximation of the Time of Travel related capture zones of a bedrock supply well provided the scale of observation is much greater than the scale of individual fractures, and consideration is given to the selection of a reasonable "effective" porosity. The effective porosity assumed for the travel time calculations was 5 percent (Golder, 2006b). The model was calibrated primarily through the adjustment of hydraulic conductivities in the hydrostratigraphic units in the model to match simulated hydraulic head distribution with observed groundwater elevations and groundwater discharge rates to streams in the study area. Minor adjustments were also completed to internal stream and model perimeter boundary conditions. The calibration targets for the model were regional steady state groundwater elevations and the water balance for the model as defined by the stream flow base estimates. Overall the normalized root mean squared (RMS) from the calibrated model based on 4,400 calibration locations was~~

~~2.9% (Golder, 2006b). This is well below the generally acceptable limit of 10% for NRMS error for groundwater models.~~

~~To develop time of travel capture zones groundwater particles were released at the pumping wells in the models and tracked backwards towards their source of origin (recharge). At each well location, particles were released in all hydrostratigraphic units "open" to the wellbore. The time-related pathlines that are subsequently generated by the model from this analysis are then overlain and a single time of travel capture zone drawn around the "family" of pathlines generated at each well. To check the capture areas generated from the backward tracking analysis (and in some cases to refine the time of travel outline produced) a series of forward particle tracking simulations were completed. The resulting capture zone from this process represents the two-dimensional (2-D) projection of the particle outlines to ground surface.~~

Delineation of the Rockwood and Hamilton Drive Wellhead Protection Areas

The Rockwood WHPAs ~~cover a total of 4,942 ha as~~are shown on **Map 6-38.** In general, t~~T~~he WHPAs ~~of~~ for all Rockwood Wells ~~1 and 2~~ extend~~s~~ in a northerly direction. The "Y" shape at Rockwood Well 1 and 2 is heavily influenced by the Eramosa River, where the pumping well captures groundwater flowing toward the well from both sides of the river. In the area of Rockwood Well 3 and 4, the refined hydrogeologic characterization, as part of the Tier 3 Assessment (Matrix 2017), suggests that the Vinemount aquitard is absent. The lack of a lower hydraulic conductivity confining layer in this area results in a capture zones that travel upwards into the overburden and do not extend as far in the upgradient direction.

~~The WHPA extends 3 km before bifurcating into two branches. The WHPA-D extends approximately 8 km away from the supply wells. The WHPA of Rockwood Well TW3/02 and TW2/02 both extend in north northeast (NNE) direction. The WHPA-C and WHPA-D of these wells overlap. The east side of the Rockwood wells 1 and 2 WHPA combines with the WHPA-D of Rockwood wells TW3/02 and TW2/02. The WHPA-D zone for Wells TW3/02 and TW2/02 extend approximately 16 km away from TW3/02 and crosses the Township boundary into Erin Township and into the Credit Valley Source Protection Area.~~

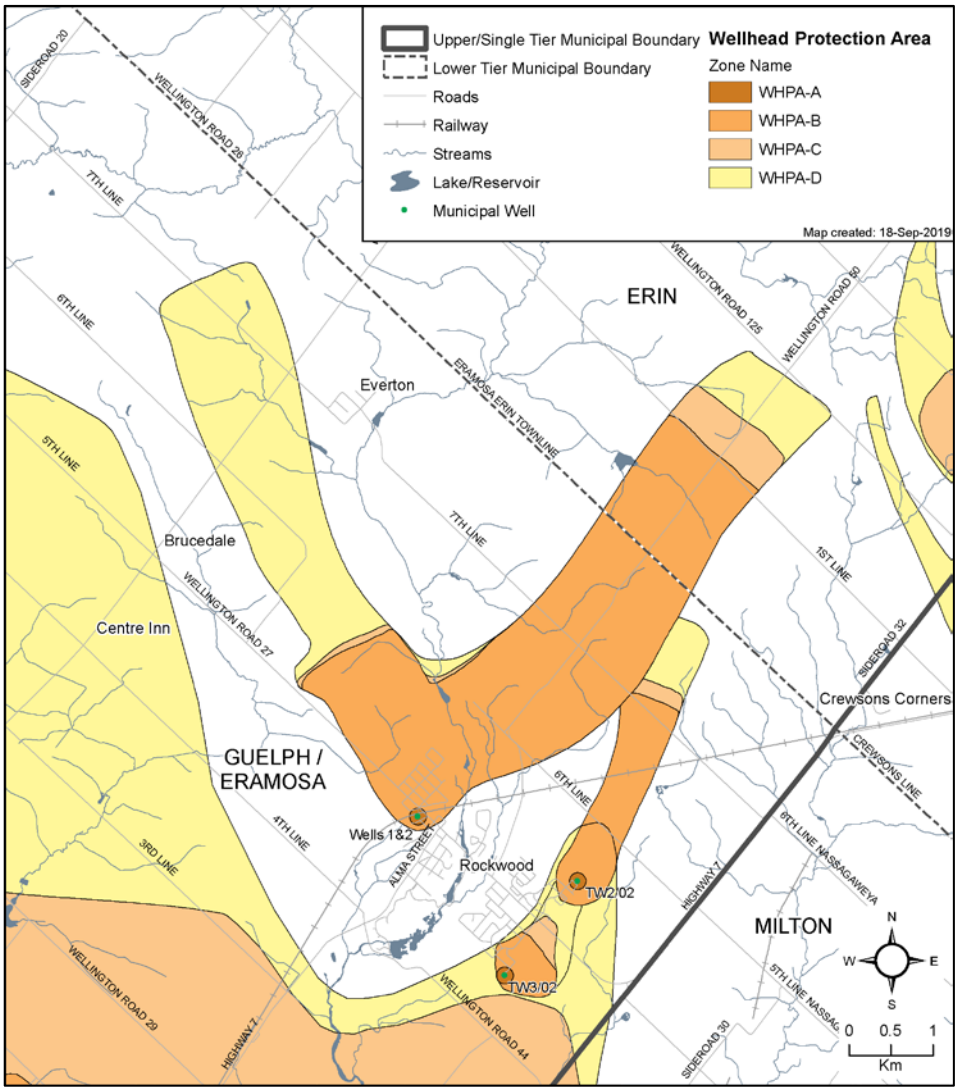
The Cross Creek and Huntington WHPAs extend in a north northwest (NNW) direction with their zones overlapping within the WHPA-~~D~~ B, C and D as presented in **Map 6-39.** The WHPA-D for both Cross Creek and Huntington extends approximately ~~10~~ 17 km from the supply well~~s~~ ~~and the WHPA-D for Huntington extends approximately 7 km~~. ~~The combined zones cover an area of 1,735 ha (Burnside, 2010b).~~

Delineation of WHPA-E and WHPA-F for the Rockwood Wellhead Protection Area

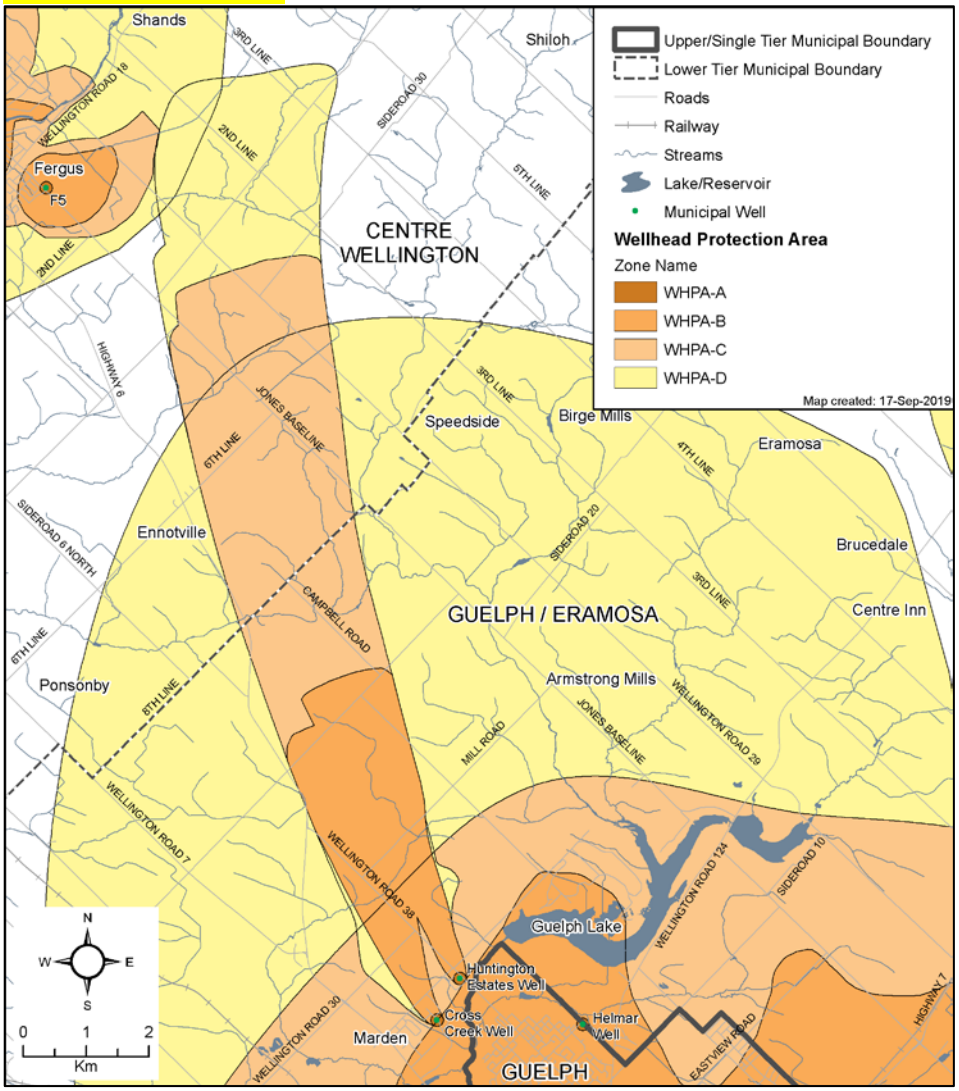
~~The Technical Rules: Assessment Report (Clean Water Act, 2006) requires that all wells that are identified as groundwater under direct influence of surface water (GUDI) delineate an additional protection zone that is representative of its surface water vulnerability, known as a WHPA-E. GUDI wells are identified in accordance with subsection 2 (2) of O. Reg. 170/03 (Drinking Water Systems) of the Safe Drinking Water Act, 2002.~~

Rockwood Wells 1 and 2 are classified as GUDI wells as a result of a study completed by Burnside in 2002. The wells are classified as GUDI due to the highly porous bedrock that outcrops at the surface in the vicinity of the well; however, there is no permanent surface water feature located in the vicinity of the wells that has been associated with the GUDI status. In light of the absence of a surface water body with which the GUDI status is linked it is not possible to delineate a WHPE-E that is compliant with Rule 47 (5) of the Technical Rules (MOECC, ~~2009b~~2017).

Map 6-38: Rockwood (Wells 1, ~~and~~ 2, ~~TW2/02~~3, and ~~TW3/02~~4) ~~and Hamilton Drive (Hungington and Cross Creek Wells)~~ Water Supply Wellhead Protection Areas



Map 6-39: Hamilton Drive (Hungington and Cross Creek Wells) Water Supply Wellhead Protection Areas



~~***Uncertainty of the Delineation of the Rockwood and Hamilton Drive Wellhead Protection Areas***~~

~~The delineation of the WHPAs was completed by Golder in the Wellington County Groundwater Protection Study, 2006 through the use of a FEFLOW groundwater model. The model was constructed and calibrated with available hydrogeological data and hydrogeological mapping products as described in Section 4.1 and the Wellington County Groundwater Protection Study Report (Golder, 2006a).~~

~~Uncertainties within the model are associated with limitations in the availability of subsurface information and can be related to projected variability in the aquifer properties (e.g. hydraulic conductivity; porosity) or uncertainties with the conceptual model (e.g. groundwater-surface water interactions; location of flow boundaries; recharge rates; continuity in aquitards; direction of regional groundwater flow).~~

~~To account for some of these uncertainties Golder has applied a factor of safety to the WHPAs. The factor of safety has been applied to two components of the WHPAs: the width and length of the capture zones and the orientation of the capture zones. The width and length of the capture zones were increased by 20% to account for uncertainty in the hydraulic characteristics of the aquifer system. The orientation of the capture zone was adjusted by 5 degrees (plus and minus) along its centre line to account for some uncertainty in the regional flow direction by increasing the width of the capture zones at increasing distances from the pumping well. This reflects the concept that the available data is typically concentrated around the pumping well and that the uncertainty in the hydrogeological understanding increases at increasing distances from the supply wells (Golder, 2006a).~~

~~Based on known variations in hydraulic properties, the factor of safety approach is not considered to adequately address the issue of uncertainty. It is known that slight variations of aquifer properties may impact the shape and orientation of the capture zones. The safety factor, while attempting to cover some of this likely variation, does not give an indication of the likely impact of variations in actual model properties as there is no correlation between the factor of safety and the model parameters.~~

~~Although the calibration results were good, the lack of information on the impact of variations in model parameters on the resulting capture zones suggests that additional work needs to be completed to allow for a full evaluation of uncertainty.~~

Intrinsic Vulnerability Scoring in Wellhead Protection Areas

Groundwater intrinsic vulnerability mapping for the Rockwood and Hamilton Drive wellfields was previously completed by EarthFX Inc. (2008) using the SAAT method. Golder (2010a) reviewed the vulnerability mapping and made adjustments based on hydrogeological knowledge at the WHPA scale. The intrinsic vulnerability was further refined in the Centre Wellington area by GRCA staff in May 2019. Smoothing (refinements) of the intrinsic vulnerability was done in areas where the existing vulnerability scoring was too complex to be implementable. This was done using the smooth line tool in ArcGIS (Polynomial Approximation with Exponential Kernel), with a 400 m smoothing tolerance. Further manual adjustment was then made in a few minor areas to remove any tight loops created by the tool. The Rockwood and Hamilton Drive intrinsic vulnerability mapping is shown on **Map 6-41 and Map 6-44.**

~~Following their delineation, the intrinsic vulnerability of the aquifer within each Wellhead Protection Area is assessed using one of the methods approved under the *Clean Water Act* Technical Rules. The resulting maps rank aquifer vulnerability as high, medium or low.~~

~~Aquifer vulnerability mapping was completed within the GRCA watershed using the Surface to Aquifer Advection Time (SAAT) approach. The GRCA retained Earthfx to complete the vulnerability mapping using the SAAT method for most of the Grand River watershed (Earthfx, 2008).~~

~~The SAAT approach estimates the average time required by a water particle to travel from a point at the ground surface to the aquifer of concern. The SAAT is approximated by using the vertical component of the advective velocity integrated over the vertical distance and the average porosity. The travel times generated are categorized into groups being <5 years, 5 to 25 years and > 25 years.~~

~~Calculation of the SAAT, as conducted by Earthfx, was based on the use of empirical formulae provided by the MOE. These formulae provide methods for the computation of two separate components of the SAAT, the unsaturated zone advection time (UZAT) and the water table to aquifer advection time (WAAT). UZAT was computed based on values assumed for depth to water table, mobile water content and infiltration rate. For the assessment a depth to water map was generated using an interpolated water table map and the elevation of the land surface. Mobile water content was approximated based on the specific yield of each soil type and infiltration was approximated using a GAWSER recharge model in which infiltration was assumed to be equal to the recharge rate. In areas where several layers of varying materials were present, the calculations were done for each layer and then summed over the entire unsaturated portion of the sub-surface.~~

~~Where required, the WAAT component of the SAAT was also computed. It is noted by Earthfx that the WAAT was only computed in two instances; the first where the target aquifer was known to be confined and the second where no aquifer material was recognized. The factors included in the computation of the WAAT were aquifer porosity, thickness of the geologic layer, vertical hydraulic conductivity and the difference between the head in the confined aquifer and the water table. Hydraulic conductivities were estimated based on the geologic materials listed in the boreholes logs. Vertical hydraulic gradients were estimated by subtracting the interpolated potentiometric surface from the interpolated water table. The thickness of each layer above the target aquifer and the location of the top of the target aquifer were determined from the borehole logs.~~

~~The regional mapping produced by the Earthfx report was reviewed on a local scale in the vicinity of the water supply wells. The vulnerability mapping was refined based on the following considerations: locations of bedrock outcrops, surficial geology, overburden thickness, SAAT point values and hydrogeologic interpretations.~~

~~In the Township of Guelph/Eramosa adjustments to the regional SAAT mapping were applied to reflect bedrock outcrops as high vulnerability, areas of less than 3 m of overburden thickness as high vulnerability and local qualitative adjustments to refine the alignment with the local SAAT scores.~~

~~The SAAT travel times were grouped to create ratings which were then used to construct an aquifer vulnerability map of the study area. Time of travel~~

~~values less than 5 years are rated as High Vulnerability. Values between 5 and 25 years are Medium vulnerability. Any value greater than 25 years is classified as having a Low Vulnerability. The various vulnerability ratings based on the travel times is shown in Table 6-38. The intrinsic vulnerability for the Rockwood and Hamilton Drive well supply systems are shown on Map 6-43 and Map 6-49. Table 6-38: SAAT Vulnerability Ratings~~

~~Time of Travel (years)~~	~~Vulnerability Rating~~
~~<5~~	~~High~~
~~5 to 25~~	~~Medium~~
~~>25~~	~~Low~~

~~At the completion of the vulnerability mapping and scoring, the Township of Guelph/Eramosa completed an assessment of transport pathways. The results of the transport pathway assessment were reviewed using professional judgment to determine whether to increase the vulnerability based on the presence of the pathways.~~

Identification of Transport Pathways and Vulnerability Adjustment

Following a review of the intrinsic vulnerability scoring maps, an assessment of transport pathways was undertaken to determine whether adjustments to the vulnerability assessment were warranted. Technical Rules 39 – 41 address the general process of how transport pathways would increase vulnerability. Transport pathways for groundwater based drinking water systems include: wells (current, unused, or abandoned), pits and quarries, mines, construction activities or deep excavations, storm water infiltration, septic systems, and buried municipal infrastructure.

The Technical Rules (MOECC, 2017) indicate that consideration should be given to the cumulative impact of any potential transport pathways; the impact of any discrete pathway should not be viewed in isolation. Therefore, following the assessment of risk for each feature, a density analysis was completed to determine where clusters of high risk pathways existed. A 50 m buffer was created around each of the high-risk pathways identified.

The transport pathways area of influence for the Rockwood and Hamilton Drive Wellhead Protection Areas, the is shown on **Map 6-42 and Map 6-46**, respectively.

Vulnerability Scoring for the Rockwood Wellhead Protection Areas

Several data sources were reviewed to assess the relative risk of transport pathways to cross-cut natural protection over the municipal production aquifers in the Rockwood and Hamilton Drive WHPAs. Other than wells, no transport pathways are interpreted to warrant an update to vulnerability mapping. A total of 332 high-risk wells were identified within the Rockwood and Hamilton Drive WHPAs. Where a high density of these wells are located outside of areas of high vulnerability and areas already adjusted for the presence of transport pathways (Burnside 2010), updates to the existing vulnerability mapping were made. This adjusted vulnerability mapping was carried forward and used for vulnerability scoring within the Rockwood and Hamilton Drive WHPAs.

Following the adjustment of the vulnerability mapping based on the transport pathways assessment, vulnerability scoring was completed for Rockwood and Hamilton Drive wellfields. The WHPAs for each well were overlain on the adjusted vulnerability mapping and scores were assigned. The corresponding final vulnerability mapping are shown on **Map 6-43 and Map 6-47.**

In Rockwood, the SAAT around Well TW2/02 was increased to high based on information from TW2/02's water well log. Overburden thickness and water well logs were reviewed to the east of Rockwood Wells TW3/02 and TW2/02 resulting in the extension of the medium vulnerability zone in this direction (Golder, 2010a).

The Rockwood Wellhead Protection Areas are located in areas dominantly classified as medium to high vulnerability with only the WHPA-D of Rockwood Wells TW3/02 and TW2/02 classified as low. Areas of high vulnerability are located in areas of bedrock outcrop and thin overburden. These areas tend to be located along the Eramosa River. The initial vulnerability scoring for Rockwood is shown on **Map** 6-42 with an inset on **Map** 6-47**.**

Vulnerability Scoring for the Hamilton Drive Wellhead Protection Areas

For the Hamilton Drive area, areas of high vulnerability were mapped along Marden Creek and along the Speed River Valley south of Hamilton Drive (Golder, 2010a).

The Cross Creek and Huntington WHPAs are located in areas classified dominantly as medium vulnerability with some low vulnerability areas within the far northern parts of the WHPA-D zones. Some areas of high vulnerability are mapped where bedrock outcrops along the drainage courses such as the Speed River, Marden Creek and Cox Creek. The initial vulnerability scoring for Hamilton Drive is shown on **Map** 6-50**.**

Identification of Transport Pathways and Vulnerability Adjustment

Following a review of the initial vulnerability scoring maps, an assessment of transport pathways was undertaken to determine whether adjustments to the vulnerability assessment were warranted. Technical Rules 39 – 41 address the general process of how transport pathways would increase vulnerability. Transport pathways for groundwater based drinking water systems include: wells (existing and abandoned), pits and quarries, mines, construction activities, storm water infiltration, septic systems, sanitary sewer infrastructure.

Transport Pathways in the Rockwood and Hamilton Drive Wellhead Protection Areas

Domestic water wells are the most common man-made transport pathway in rural areas. Improperly constructed wells can potentially introduce a cumulative impact to drinking water sources especially when the casing deteriorates. Similarly, if the well is no longer in use, improper abandonment also provides a transport pathway for a contaminant to impact a drinking water source.

It is a requirement of Ontario Regulation 903 that unused wells be properly abandoned by a licensed well contractor. However, proper well abandonment is not actively enforced or monitored therefore it is difficult to assess how many abandoned wells may exist within the WHPAs.

A review of water well records from the MOE water well database and a field survey were conducted to identify wells within the WHPAs. The wells were then ranked based on their risk to the supply aquifer. The survey resulted in the identification of 118 water wells within the Rockwood 2 year TOT zone (WHPA-B) and classified 108 of the wells as high risk wells. 72 water wells were identified within the Hamilton Drive WHPAs and 60 were classified as high risk

Septic systems are considered transport pathways as they can provide a conduit for contaminants to travel through the ground to the water table. Septic systems are generally built in the upper few metres of the sub-surface and consist of a tank and drainage tiles which distribute effluent allowing it to infiltrate into the ground. In the case of thin confining layers or in unconfined aquifer

~~conditions, these shallow penetrating systems may present a significant conduit for contaminants to the aquifer of concern. The Village of Rockwood has a municipal sewage collection system, however septic systems may still be present that were used before servicing was available. For the purposes of this assessment in ground individual septic systems are assumed present at all rural residences outside of the serviced area.~~

~~Utilities that are constructed in the sub-surface are potential transport pathways as the disturbed soil surrounding them can provide a pathway for contaminants to enter into the aquifer below. Utilities that may act as transport pathways include storm-water trunk sewers and sanitary infrastructure. The depth of excavation for the construction of utilities will determine the risk that the wells pose on the municipal supply aquifer. Municipal sewage sewer lines are located within the village of Rockwood. Underground utilities are located within the WHPA within the Rockwood limits. The areas of risk are already mapped as high vulnerability therefore no increase in vulnerability is required.~~

~~Aggregate operations are defined as activities that involve the extraction of material from the surface and in the current study include both pits and quarries. Pits and quarries present a transport pathway as their creation serves to remove a potential layer or layers of protection from the regional aquifer. In some cases, these excavations may extend to below the groundwater table in which case the pit or quarry is a direct conduit to the aquifer..~~

~~As part of the assessment, study aggregate operations have been mapped based on existing databases, the review of aerial photography and satellite imagery along with a windshield survey of the WHPAs. There is one aggregate operation located within the WHPA-D of Rockwood Wells 1 and 2. Satellite photography indicates that excavations likely extend below groundwater table as surface water ponds are visible.~~

~~***Adjusted Vulnerability Scoring***~~

~~The increase in vulnerability as a result of transport pathways is generally limited to one rank (low to medium or medium to high) except in extreme cases where the constructed pathway is considered to increase the vulnerability of the aquifer from low to high.~~

~~At the completion of the transport pathways assessment, the Technical Rules allow investigators to modify the vulnerability scoring if there is a concern that the identified transport pathways within the Wellhead Protection Areas may increase the vulnerability of the aquifer beyond that represented by the intrinsic vulnerability. Modification of the vulnerability score is performed by increasing the vulnerability of the underlying aquifer vulnerability map from either a low to moderate value or moderate to high value. An initial aquifer vulnerability value of high cannot be increased.~~

~~The updated assessment report will be revised to better illustrate the transport pathways affecting the intrinsic vulnerability scores.~~

~~***Adjusted Vulnerability Scoring for the Rockwood Wellhead Protection Areas***~~

~~The increase in vulnerability due to transport pathways is provided for the Rockwood Wellhead Protection Areas in. The following locations were increased:~~

- ~~Along Main Street and Harris Street within Rockwood Well TW3/02 WHPA B the vulnerability was increased from moderate to high. These streets have houses that were present before servicing and likely have wells that are no longer in use;~~

- ~~The hamlet of Everton was increased to high due to the high density of wells; and~~
- ~~The area of an aggregate operation located on Wellington Road 125 within WHPA-D of Rockwood Wells 1 & 2 was increased from moderate to high.~~

~~The transport pathways for the Rockwood Wellhead Protection Areas are shown on **Map** 6-44, the area of influence is shown on **Map** 6-45 and the final vulnerability scoring is shown on **Map** 6-46. An insert of the final vulnerability scoring is shown on **Map** 6-48.~~

~~***Adjusted Vulnerability for the Hamilton Drive Wellhead Protection Areas***~~

~~An area of vulnerability increase occurred along Wellington Road 22 within WHPA-D due to a high density of high risk wells. The transport pathways for the Hamilton Drive Wellhead Protection Areas are shown on **Map** 6-51, the area of influence is shown on **Map** 6-52 and the final vulnerability scoring is shown on **Map** 6-53.~~

Uncertainty in the WHPA Delineation and Vulnerabilty Scoring for the Rockwood and Hamilton Drive Water Supply Systems

The uncertainty analysis factors considered in this assessment follow Part I.4, Rule 14 of the Technical Rules (MOECC, 2017). **Table 7-43** shows a summary of the uncertainty for the WHPA delineation and vulnerability analysis for the Rockwood and Hamilton Drive Water Supply Systems.

Table 7-43: Uncertainty Assessment for the Rockwood and Hamilton Drive Water Supply Systems

Uncertainty Assessment Factor	Uncertainty Designation	Description
14(1) The distribution, variability, quality, and relevance of data used in the preparation of the Assessment Report	Low	Good coverage of Ontario MECP water well record data surrounding the Study Area as well as high-quality data local to the well fields and regionally. Water levels from multiple periods. Averaging of multiple water levels at individual wells was completed to best reflect average conditions.
14(2) The ability of the methods and models used to accurately reflect the flow processes in the hydrological system.	High	The groundwater flow model has been shown to reflect bedrock groundwater flow processes by representing water levels under long-term average and pumping conditions. However, the sensitivity analysis illustrates that the orientation and size of the capture zones, and the impact of the Eramosa River, is very sensitive to the range of model parameters used. Additionally, the model contains a two-layer conceptualization of overburden and may not reflect local conditions.
14(3) The quality assurance and quality control procedures applied	Low	Each step of the model development process relied on data that had been collected and/or reviewed by professional engineers or geoscientists. The development of the model was fully documented (Matrix, 2017) and that document was reviewed by leading academics and industry professionals for the purposes of fulfilling the requirements of the Act.
14(4) The extent and level of calibration and validation achieved for models used or calculations or general	Low	In the Rockwood and Hamilton Drive areas the Tier 3 model was calibrated to steady-state as well as transient conditions. Further, transient verification was conducted at well locations in Rockwood and Hamilton Drive, and showed that the model was able to represent the

Table 7-43: Uncertainty Assessment for the Rockwood and Hamilton Drive Water Supply Systems

Uncertainty Assessment Factor	Uncertainty Designation	Description
assessments completed		response of the shallow and deeper groundwater systems to varying recharge and pumping stress over a longer time period. These calibration efforts and the final parameters derived are both consistent with field observations and those that would be expected based on the conceptual model.
14(5) The accuracy to which the groundwater vulnerability categories effectively assess the relative vulnerability of the underlying hydrogeological features	High	The groundwater vulnerability mapping is based on the SAAT methodology completed by EarthFX (2008) and refined by Golder (2010) and Burnside (2010); however, the hydrogeologic conceptual model of the Study Area was reworked as part of the Tier 3 Assessment (Matrix, 2017). The vulnerability mapping was not refined to reflect the current conceptual model. Further, an assessment of the differences between the current conceptual model, and the one that the previous vulnerability mapping is based on, has not been completed to verify whether the groundwater vulnerability categories still effectively assess the relative vulnerability of the underlying hydrogeological features.

Uncertainty in the delineation of the WHPAs was addressed through the simulation of multiple scenarios. The scenarios for WHPA delineation produced similarly shaped capture zones, which were all encompassed in the final WHPA delineation. Further, the reliability of the delineated WHPAs is supported by the reasonability of the calibrated model. The groundwater flow model is calibrated using model parameters that reflect hydraulic field tests and have values that are within expected ranges for the various hydrogeological units. This results in a low uncertainty for the capture zone delineation. There is a low uncertainty rating associated with the time-of-travel delineation; however, there is a high uncertainty rating associated with the vulnerability mapping, which was not updated or reassessed using the current conceptual model (Matrix, 2017). There is also a high uncertainty related to overburden representation in the model. As a result, an uncertainty rating of high should be assigned to the assessment of vulnerability of each WHPA. This high uncertainty is identified as a data gap and updates to the vulnerability mapping should be considered in the future.

~~The Technical Rules: Assessment Report (Clean Water Act, 2006) requires an assessment of uncertainty as part of the vulnerability assessment. The uncertainty assessments seeks to provide a qualitative summary of data and analysis reliability as performed during the study. Uncertainty associated with a vulnerability assessment can be attributed to a number of factors including:~~

- ~~Density of input data~~
- ~~Quality and reliability of data, and~~
- ~~Assumptions made when reducing or synthesizing data.~~

~~The vulnerability assessment completed by Earthfx was based on the Surface to Aquifer Advection Time (SAAT). The SAAT calculation was based on a number of empirical formulae provided in past guidance documents from the MOE.~~

~~The calculation of SAAT is made up of two components; the unsaturated zone advection time (UZAT) and the water table to aquifer advection time (WAAT). In the Earthfx study both components were computed based on simplifying assumptions included in MOE provided formulae. It was noted that the UZAT was computed based on estimates for groundwater recharge derived from a GAWSER model. Also values for specific yield of soils were obtained from existing literature. The results of the UZAT analysis showed a high degree of variance which may be attributed to variance in the input GAWSER model. The results of the analysis indicate that there is a 95.5 % certainty that the UZAT time calculated is within +/-42 years of the actual time at any well. This indicates that the variability of the UZAT value (margin of error) is greater than the divisions of the vulnerability range i.e. the vulnerability could vary across the entire range of classifications from low to medium or high based on its margin of error. The potential for this high variation indicates that the uncertainty related to this component is high. UZAT was computed at various water well points across the study area. There was considerable effort made within the study to improve the quality of the spatial and lithologic data provided by each data point. In this regard only wells with a location accuracy of less than 100 m were used as part of the study. It can be interpreted that the computations performed represented values that were correct spatially across the study area.~~

~~The second component of the SAAT vulnerability, WAAT, was computed based on a formula provided by the MOE and was applied in areas where the target aquifer was known to be confined or where no aquifer material was recognized. The calculation assumes that flow within this zone can be approximated by the Darcy law for groundwater flow. The results of a statistical analysis indicate a high variance in the computed values which points to a high variance and high degree of uncertainty in the underlying data. The computation is known to be dependent on estimates of hydraulic properties, and interpolation of potentiometric surfaces which are based on sparse and unreliable data. The resulting product can be regarded as being an amalgamation of all the primary data uncertainties. Based on the uncertainty associated with the input data it is concluded that the WAAT calculation can be regarded as having a high uncertainty.~~

~~Finally the SAAT is derived by combining the previously discussed components of UZAT and WAAT. It is noted that the UZAT was computed using a GAWSER model to estimate recharge. The GAWSER model is known to be built on certain simplifying assumptions that have not been expounded in the background report from Earthfx. In light of this no level of uncertainty can be attached to the results of this model. Using the results of the UZAT and WAAT calculations as outlined in the Earthfx report it is concluded that the level of uncertainty associated with the computation of SAAT is high.~~

~~While the corrections applied to well locations resulted in spatially correct analyses, the underlying uncertainty in the computations themselves results in an overall ranking of high uncertainty for the process.~~

~~The Earthfx team performed a comparative analysis of vulnerability methods using Intrinsic Susceptibility Index (ISI) to compare with the values for SAAT. It was indicated that the SAAT ranking compared favorably to the ISI in the high vulnerability areas with more significant deviations in the medium and low ranked areas. The statistical analysis performed on the ISI however indicated that there was also a high uncertainty in these values.~~

Table 7-43 shows a summary of the uncertainty for the vulnerability analysis for the Rockwood and Hamilton Drive Water Supply Systems.

Table 7-43: Uncertainty Assessment for the Vulnerability Analysis for the Rockwood and Hamilton Drive Water Supply Systems

	Uncertainty Type	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Rockwood Vulnerability Uncertainty	Vulnerability Ratings (SAAT) and conceptualization	Low	High	High	High
	Distribution and quality of data	Low	High	High	High
	WHPA delineation	Low	High	High	High
	Overall – Vulnerability Scores	Low	High	High	High
Hamilton Drive Vulnerability Uncertainty	Vulnerability Ratings (SAAT) and conceptualization	Low	High	High	High
	Distribution and quality of data	Low	High	High	High
	WHPA delineation	Low	High	High	High
	Overall – Vulnerability Scores	Low	High	High	High

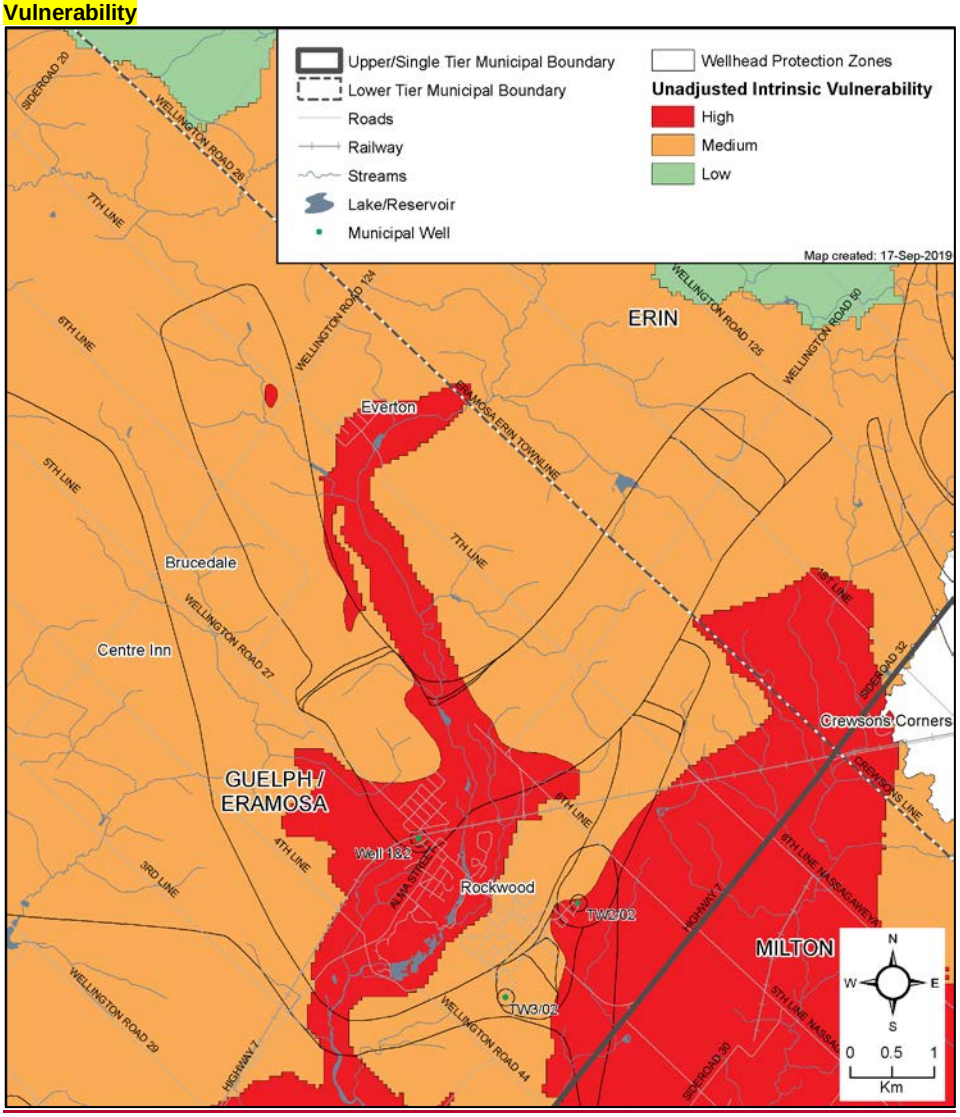
Peer Review

A peer review of the report *Vulnerability Analysis, Issues Evaluation and Threats Assessment, Township of Guelph/Eramosa* (Burnside, 2010) was completed by Brian Luinstra of Luinstra Earth Sciences. The overall impressions of the report by the peer review are as follows:

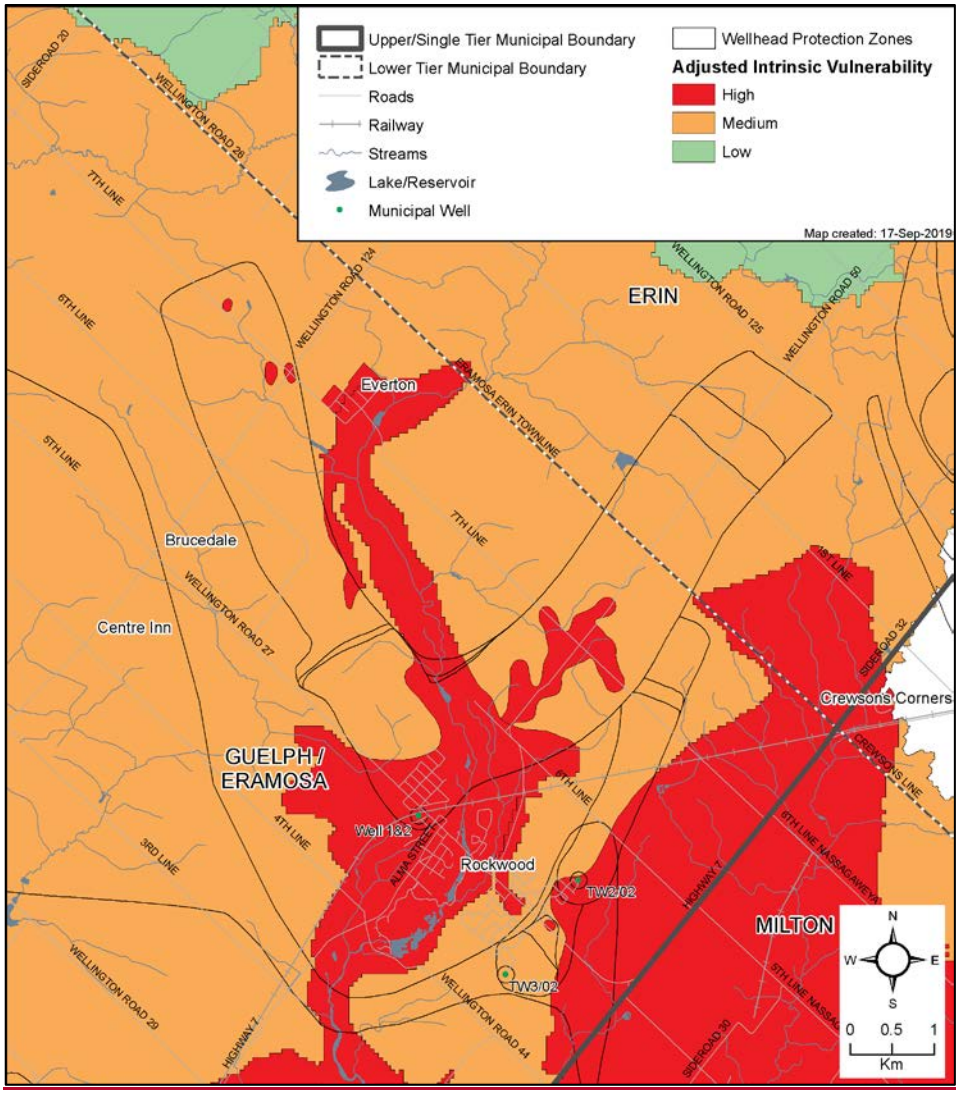
"In the Peer Reviewer's professional opinion, the overall results appear reasonable and are consistent with the requirements outlined in the Ontario Ministry of Environment Technical Rules for completion of the Assessment Report under the Clean Water Act, 2006. The exception to this is the lack of delineated WHPA-E and WHPA-F for the Rockwood Wells #1 and #2, as well as the Issues analysis for this system. The overall approach to developing the vulnerability scores, evaluating Issues and assessing threats are consistent with the Technical Rules. The report is comprehensive and very well written, and maps appropriate for the intended use of the information."

Responses to the peer review comments were incorporated into the final report. The responses to the peer review comments enhanced the overall defensibility of the report but did not impact the outcome of the Wellhead Protection Areas or vulnerability scoring.

Map 6-40: Rockwood Water Supply Wellhead Protection Area Unadjusted Instrinsic Vulnerability

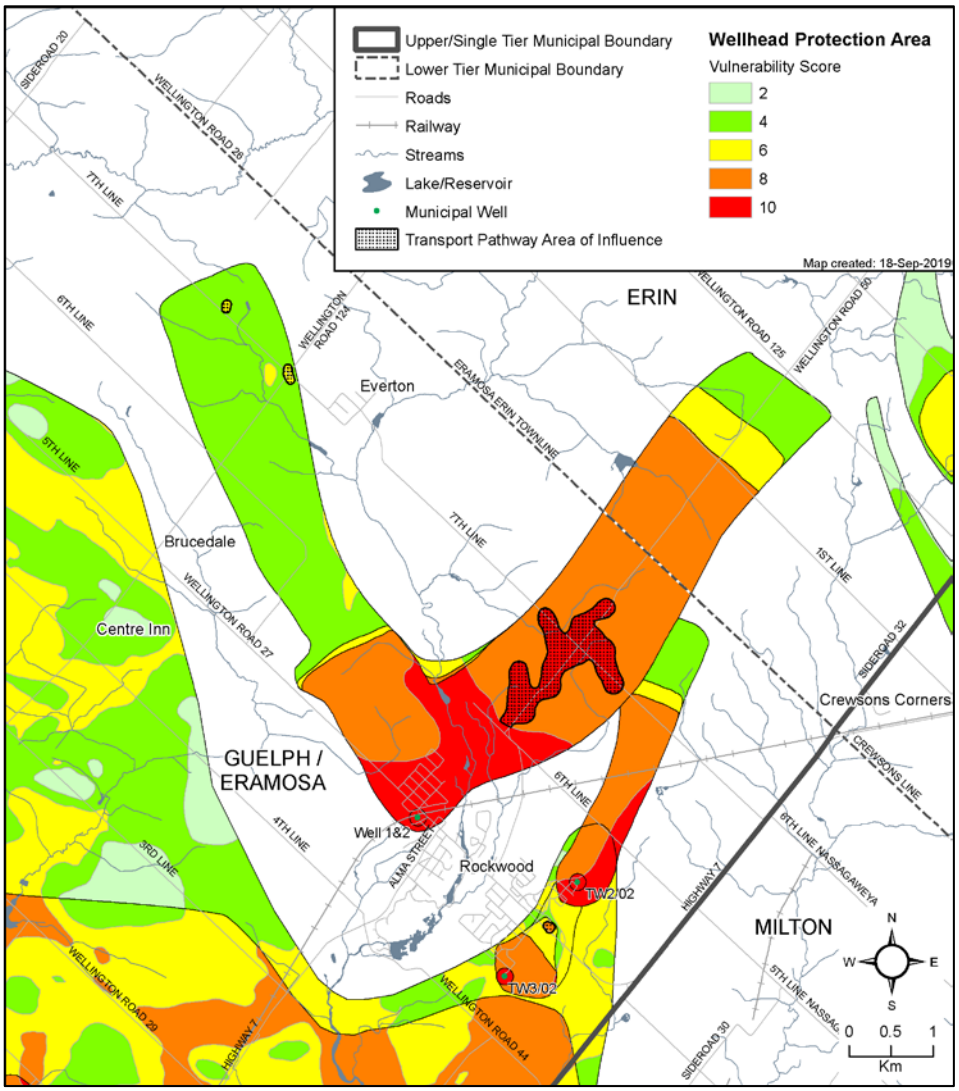


Map 6-41 Rockwood Water Supply Adjusted Intrinsic Vulnerability

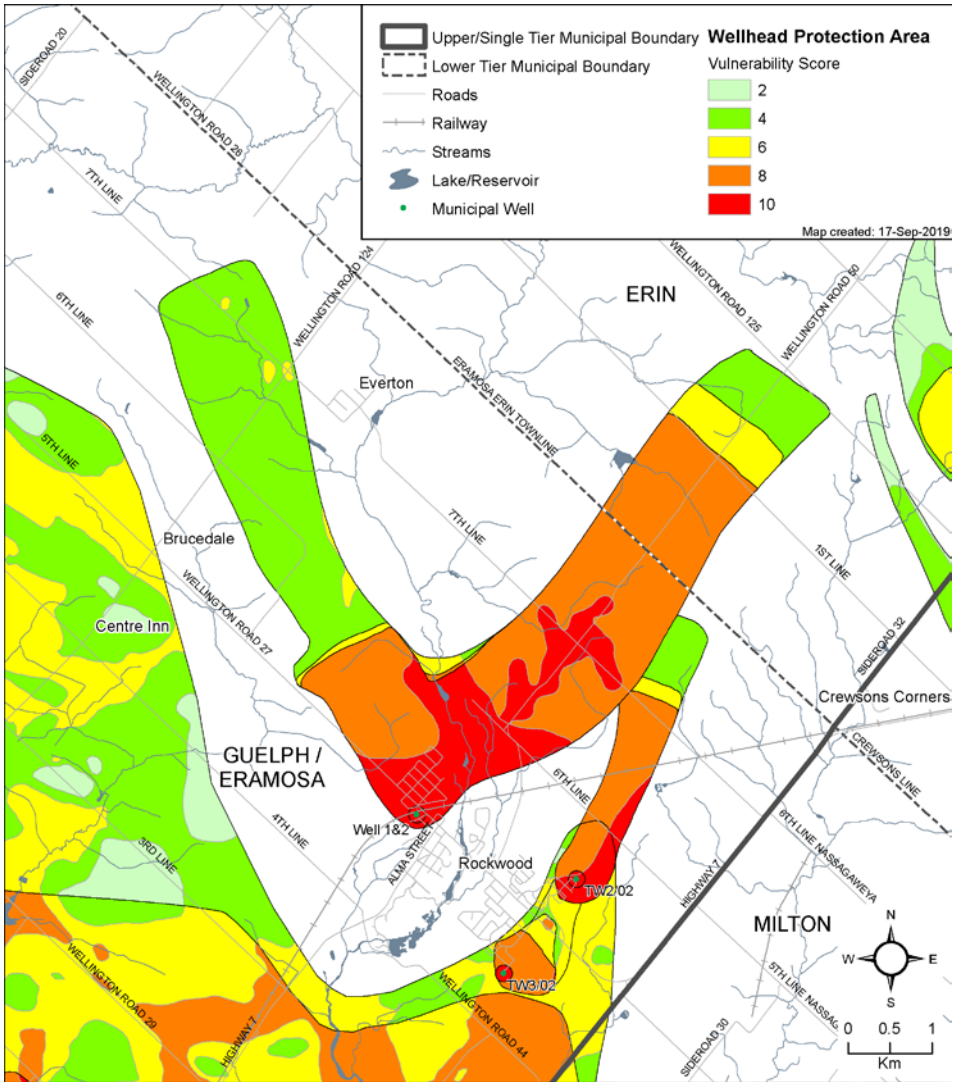


~~**Map 6-44: Rockwood Water Supply Transport Pathways**~~

Map 6-42: Rockwood Water Supply Transport Pathway Area of Influence



Map 6-43: Rockwood Water Supply Wellhead Protection Area Final Vulnerability

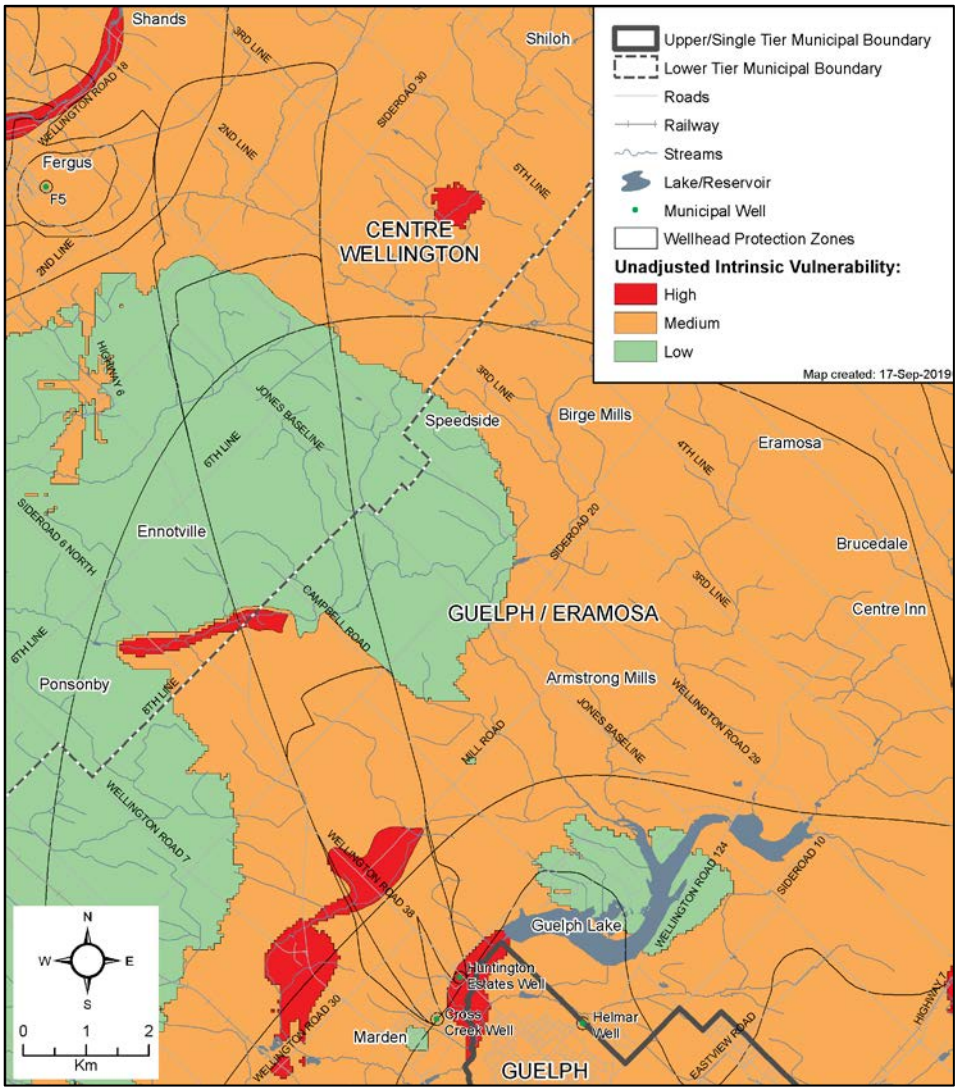


Publicly available Web-GIS mapping of vulnerable areas including vulnerability has been developed and is available through www.sourcewater.ca.

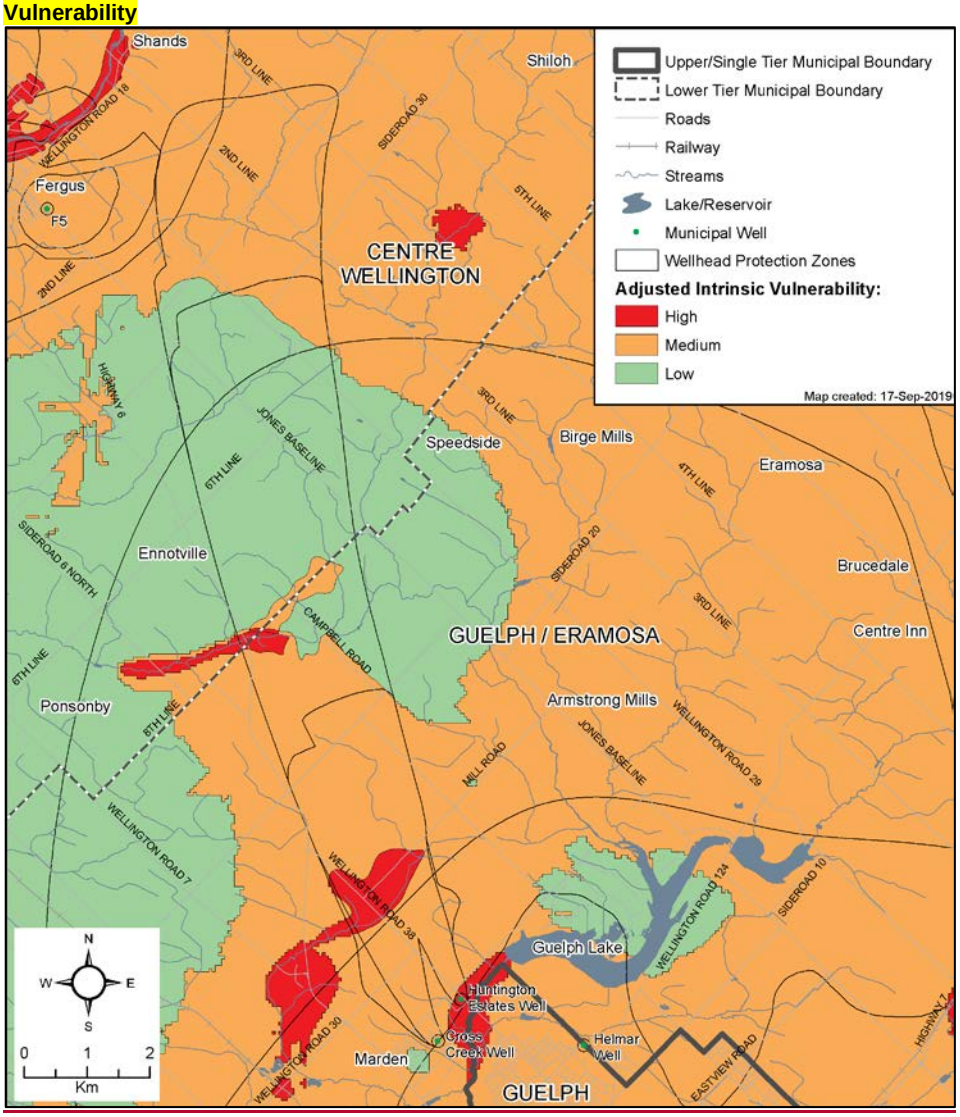
~~**Map 6-47: Rockwood Water Supply Wellhead Protection Area Initial Vulnerability (Insert)**~~

~~**Map 6-48: Rockwood Water Supply Wellhead Protection Area Final Vulnerability**~~

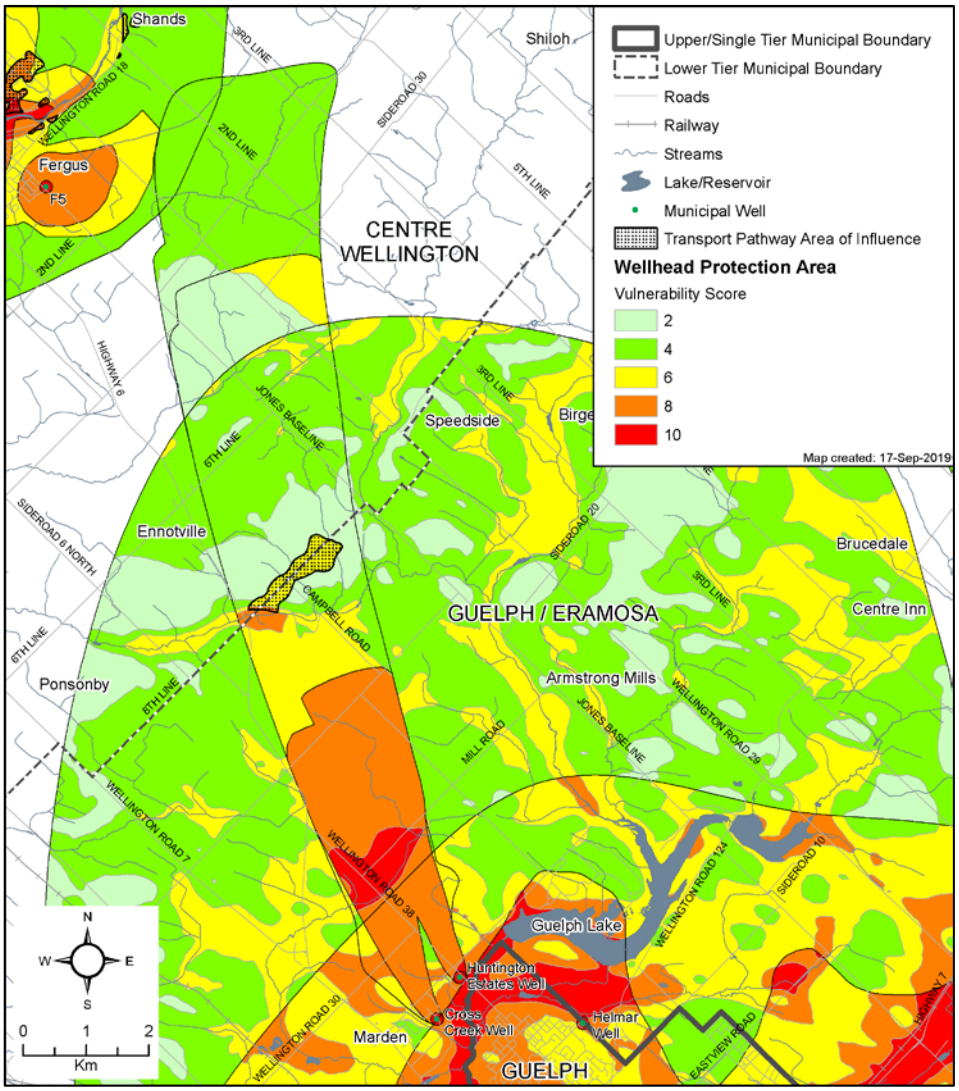
Map 6-44 Hamilton Drive Water Supply Unadjusted Intrinsic Vulnerability



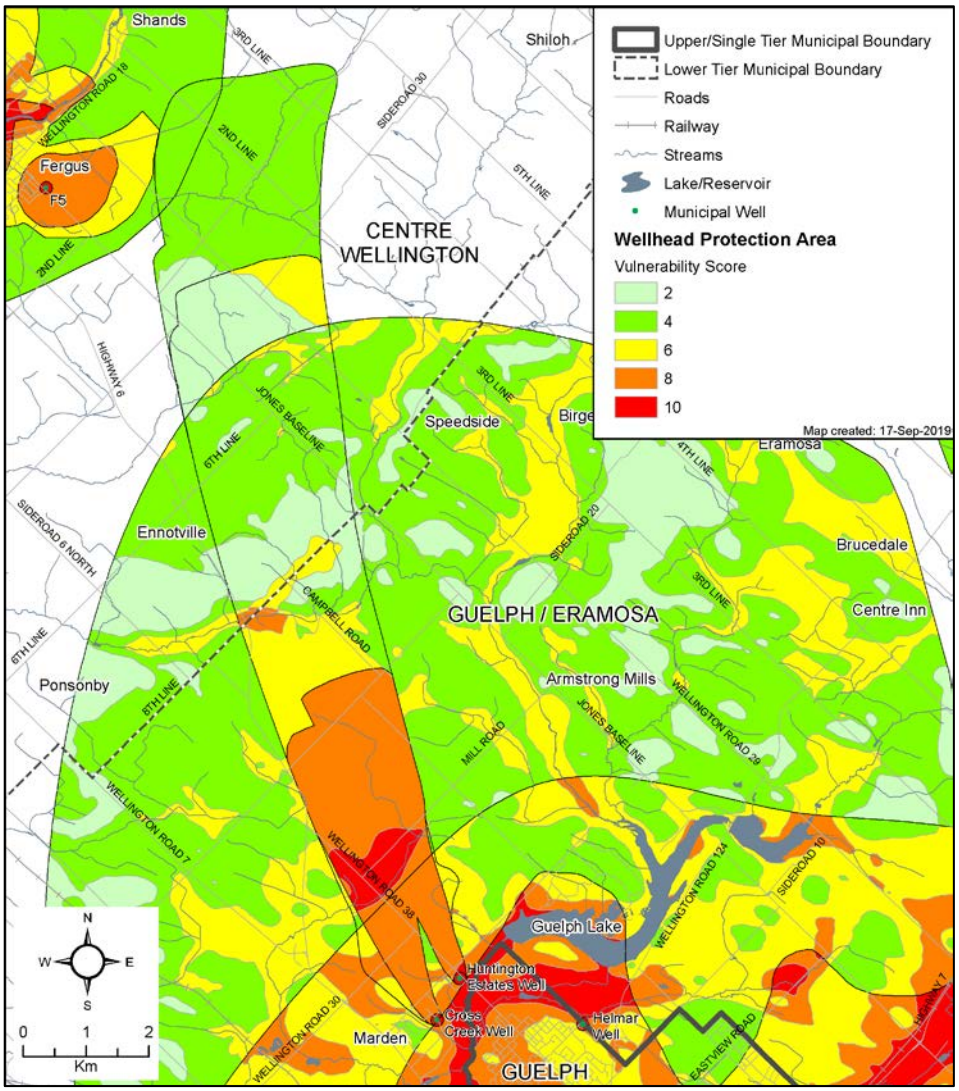
Map 6-45: Hamilton Drive Water Supply Wellhead Protection Area Adjusted Intrinsic Vulnerability



~~**Map 6-48: Hamilton Drive Water Supply Transport Pathways**~~
Map 6-46: Hamilton Drive Water Supply Transport Pathways Area of Influence



Map 6-47: Hamilton Drive Water Supply Wellhead Protection Area Final Vulnerability



Managed Lands within the Rockwood and Hamilton Drive Water Supply Systems

Managed Lands are lands to which nutrients are applied. Managed lands can be categorized into two groups: agricultural managed land and non-agricultural managed land. Agricultural managed land includes areas of cropland, fallow, and improved pasture that may receive nutrients. Non-agricultural managed land includes golf courses, sports fields, lawns and other built-up grassed areas that may receive nutrients (primarily commercial fertilizer). Detailed methods on managed lands calculations are described in Chapter 3 of this Assessment Report.

Based on Technical Rule 16 (9), the percentage of managed lands were only calculated where the vulnerability score in each WHPA was greater than 4.

Managed lands calculations for Rockwood and Hamilton Drive were completed in WHPA-A to WHPA-D where the vulnerability was 6 or higher. **Table 6-35** provides the results of the calculations and **Map 6-48 and Map 6-49** illustrate the results.

~~Determining the location and percentage of managed lands, the location of agricultural managed lands, and the calculation of livestock density were used to determine whether the application of agricultural source material (ASM), non-agricultural source material (NASM), and fertilizer were significant threats within the Wellhead Protection Areas.~~

~~To calculate percentage of managed lands, Technical Rule 16(9) was used (MOE, 2009b). Similar to the calculation of impervious surfaces, mapping the percentage of managed lands area is not required where the vulnerability score for an area is less than the vulnerability score necessary for the activity to be considered a significant threat. Based on this statement in the Technical Rules, the percentage of managed lands were only calculated where the vulnerability score in each Wellhead Protection Area was greater than four.~~

~~Managed lands and livestock density calculations for the Rockwood and Hamilton Drive Wellhead Protection Areas were completed in WHPA-A, WHPA-B, WHPA-C and parts of WHPA-D where the vulnerability was 6 or higher.~~ Table 6-37: Managed Lands Percentage in the Rockwood and Hamilton Drive Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Guelph/ Eramosa	Rockwood	Well 1&2	~~48.39%~~17.71%	~~67.64~~56.90 %	72.90% (west); 3.55% (centre); ~~55.76%~~32.64% (east);	44.24% (west); 0% (centre); N/A (east)
		~~TW3/02z~~Well 3	~~71.98%~~66.03%	~~69.82~~58.20 %	~~55.76~~36.89%~~%~~	~~N/A~~36.23~~5.99%~~
		~~TW2/02~~Well 4	~~38.05~~25.54%	~~69.82%~~60.84%	~~55.76~~92.69%	N/A
	Hamilton Drive	Cross Creek	~~75.18~~71.79%	~~57.74% 68.26%~~75.58%	~~75.80%~~84.22% ~~62.07%~~	~~22.25% 22.25%~~49.02% (west); ~~N/A~~73.04% (north); N/A (east)
		Huntington	~~77.46~~68.47%			

A coding of N/A indicates that the vulnerability score in this area is 4 or less.

Livestock Density within the Rockwood and Hamilton Drive Water Supply Systems

The calculation of livestock density is required to determine the amount of Nutrient Units (NU) generated in each vulnerable Wellhead Protection Area scenario. This calculation is only completed when there are building structures that could house livestock on a farm parcel that intersects a vulnerable Wellhead Protection Area. Detailed methods on livestock density calculations are described in Chapter 3 of this Assessment Report. ~~This means that for each farm parcel that has a portion of their land in the Wellhead Protection Area and also has a livestock barn on their property (regardless of whether the barn is in the Wellhead Protection Area), the livestock density in Nutrient Units per acre (NU/ac) would be calculated. The Nutrient Units generated by each farm parcel is area weighted to determine the proportion applied in each Wellhead Protection Area. The total amount of Nutrient Units applied in each Wellhead Protection Area is divided by the amount of agricultural managed land in that same Wellhead Protection Area to determine the livestock density. The agricultural managed lands in each Wellhead Protection Area scenario was calculated as per Part II, Technical Rule 16(10) (MOE, 2009b), and as previously described. Each parcel of land that intersects each Wellhead Protection Area needs to be assessed for the presence of a livestock barn. The nutrients that are generated by the livestock are assumed to be applied only onto that farm parcel.~~

~~Barns on farm parcels with codes related to livestock were looked at more carefully to determine what type of livestock could be housed and in which structures. Air photo interpretation with some knowledge of key identifying features of housing structures and land use practices allowed some confidence in selecting the correct structure as a livestock housing structure.~~

~~Once a livestock housing barn was selected, the type of livestock that was assumed to be housed in the barn was estimated with help from the farm code description and air photo interpretation. A polygon was drawn to cover the footprint of the structure to represent of the area of housing space for the livestock. The area of the barn was multiplied by the conversion factor for that livestock type, relating the area of the barn (in square metres) per Nutrient Unit, as supplied by OMAFRA in the Technical Memorandum issued by GRCA for Lake Erie Region Technical Studies (September 23, 2009) (GRCA, 2009a). This amount of nutrients is assumed to be applied to all the AML area on that farm unit evenly.~~

~~To verify the air photo interpretation, drive-by site visits were done to capture a photograph of the barn from the road-side.~~

~~Once all the livestock barns were found and the NUs calculated, the total NU applied to only the area within the Wellhead Protection Area is needed. Using area weighting, the livestock density (in NU/acre) of each farm parcel was applied to only the area within the Wellhead Protection Area and summed with all the other NU calculations on farm parcels in the Wellhead Protection Area.~~

~~The total NU generated by all the barns is divided by the total AML in the Wellhead Protection Area, as calculated in the Managed Lands Methodology, regardless of the type of farm (livestock or non-livestock). The livestock density in the Wellhead Protection Area is thus the sum of all NU applied within the Wellhead Protection Area divided by the total AML area (in acres).~~

The results of the calculations for livestock densities are provided in **Table 6-36 and Map 6-50 and Map 6-51,** for the Rockwood and Hamilton Drive Wellhead Protection Areas.

Table 6-38: Livestock Density (NU/acre) in the Rockwood and Hamilton Drive Wellhead Protection Areas

Township	Location	Well	WHPA-A	WHPA-B	WHPA-C	WHPA-D

Guelph/ Eramosa	Rockwood	Well 1&2	0.00	0.9413	0.57 (west); 2.81 (centre); 0.01 (east)0.48	0.014 (west); 0.00 (centre); N/A (east)0.16
		TW3/02Well 3	0.570.16	1.060.30	0.480.52	N/A1.840.87
		TW2/02Well 4	0.00	1.060.37	0.290.48	N/A
	Hamilton Drive	Cross Creek	0.00	0.73 1.160.63	0.74 1.450.6572	5.82 (west); N/A0.01 (north); N/A (east)0.08 0.08
		Huntington	0.00			

A coding of 0 in **Table 6-36** indicates that there were no agricultural livestock barns to contribute nutrients and therefore the value for livestock density is 0. A coding of N/A indicates that the vulnerability score in this area is 4 or less.

Percent Impervious Surface Area in Wellhead Protection Areas

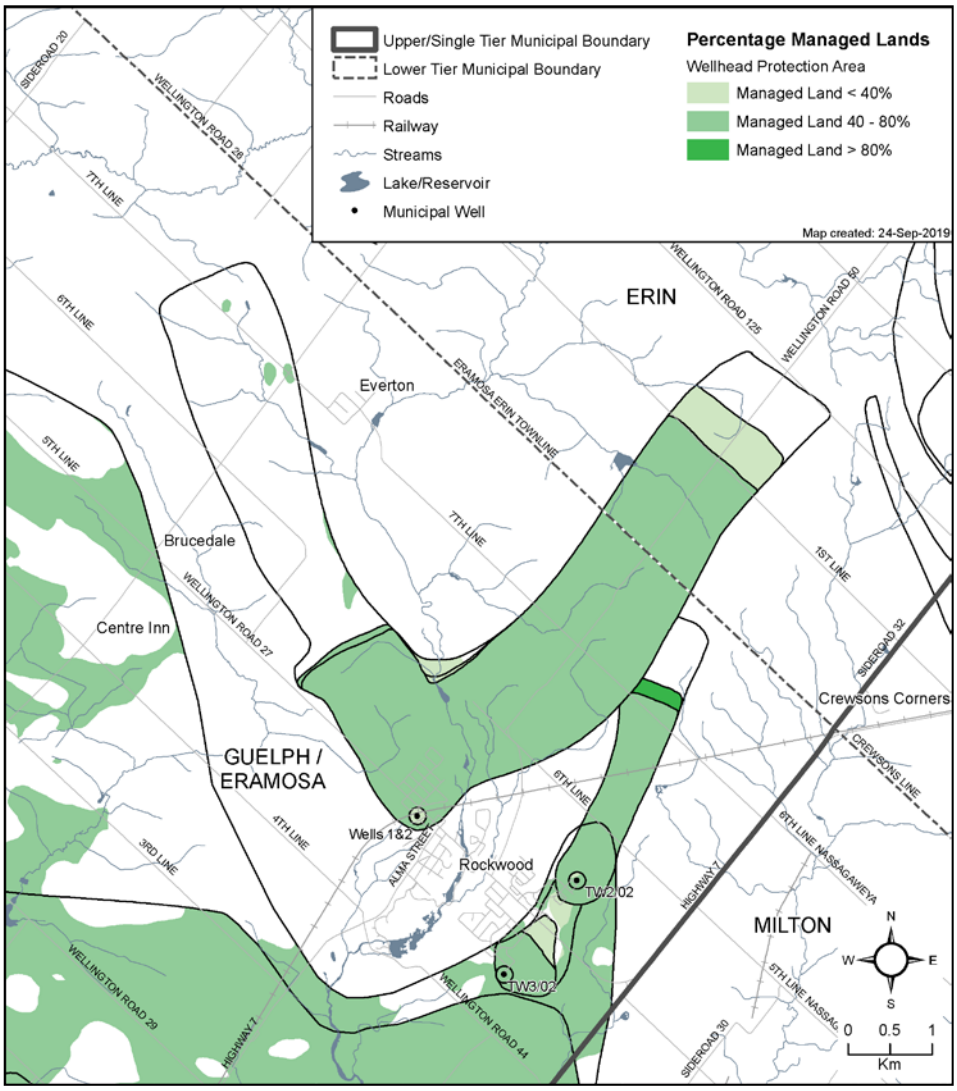
To determine whether the application of road salt poses a threat in the Township of Guelph-Eramosa, the percentage of impervious surface where road salt can be applied per square kilometre was calculated as per Technical Rules 16(11) and 17. The 1km X 1km method, described in Chapter 3 was used for Rockwood and Hamilton Drive wellfields. The application of road salt can only be a threat in areas with a vulnerability score of 6 or greater under the threats-based approach; therefore the percent impervious calculation was only completed in areas with a score of 6 or greater.

~~The areas were calculated using road mapping from the National Road Network (Natural Resources Canada) and satellite air photography to identify large parking lots and paved areas. Using a 1 km x 1 km grid centered over each vulnerable area, the percentage of impermeable surfaces within each square kilometre was calculated. The Technical Rules require that the grid is centred on the centroid of the source protection area. As per Technical Rule 15.1, the Director has provided confirmation that he agrees to the departure. The Director's letter of confirmation can be found in **Appendix B.** The percentage of impervious surfaces is an indicator for the potential for impacts due to road salting. In areas with high levels of impervious surfaces (roads) there is an increased likelihood that road salts will impact water quality.~~

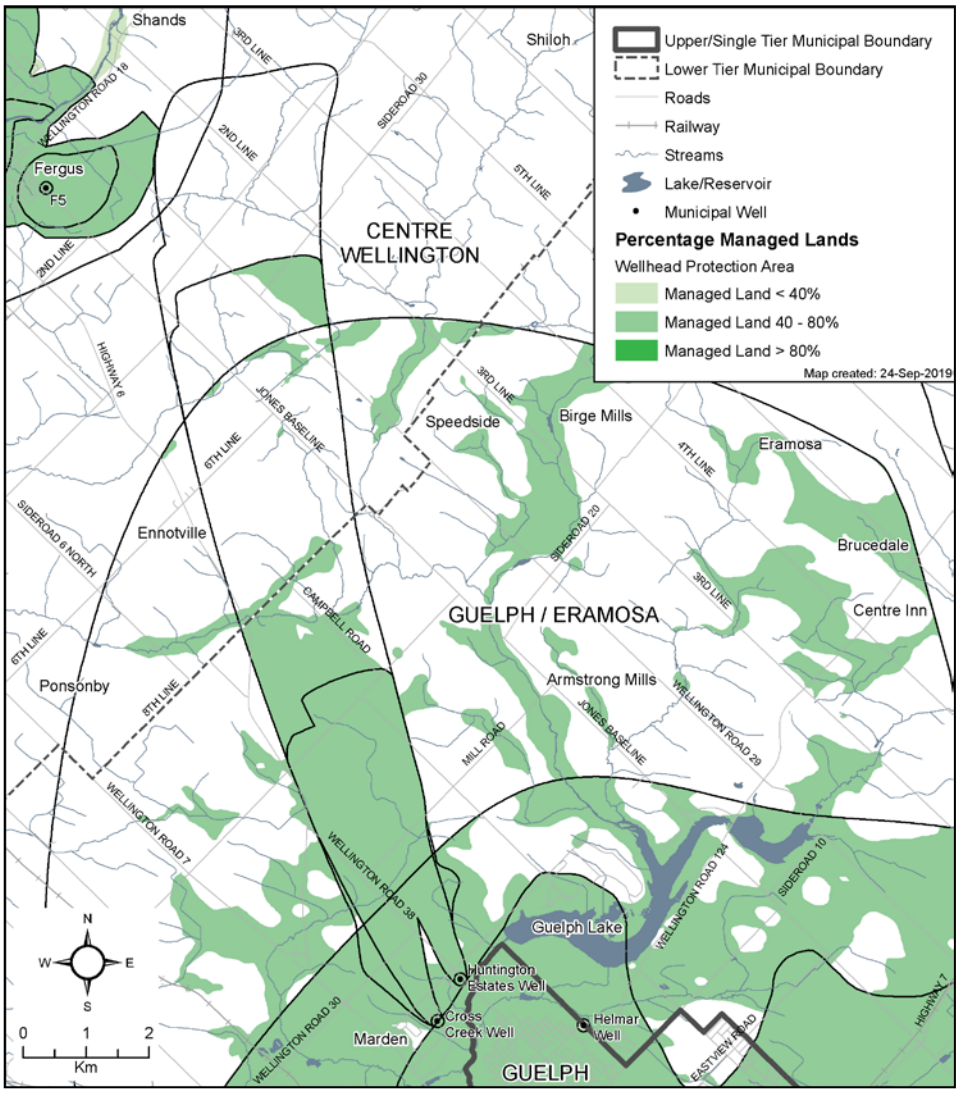
The application of road salt can only be a threat in areas with a vulnerability score of 6 or greater; therefore the percent impervious calculation was only completed in areas with a score of 6 or greater.

The impervious surface percentages were calculated in each ~~Wellhead Protection Area~~WHPA for the Township of Guleph/Eramosa. The results indicate a low to moderate percentage of impervious surfaces for both Rockwood ~~(0% and 8.2%)~~ and Hamilton Drive ~~(0% and 6.2%)~~ as shown in **Map 6-52 and Map 6-53.** With the current thresholds in the MECP's~~OE's~~ Tables of Drinking Water Threats the application of road salt is not a significant threat.

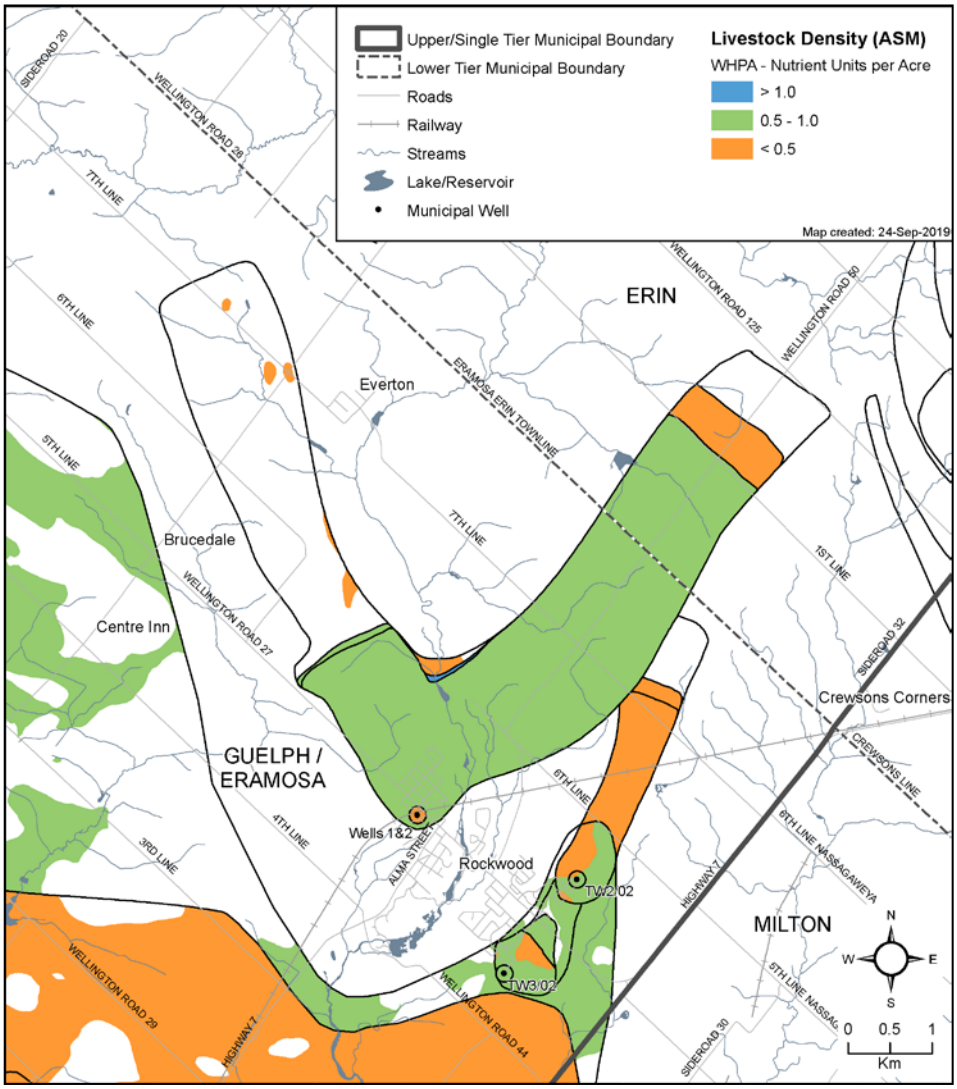
Map 6-48: Rockwood Water Supply Percent Managed Lands



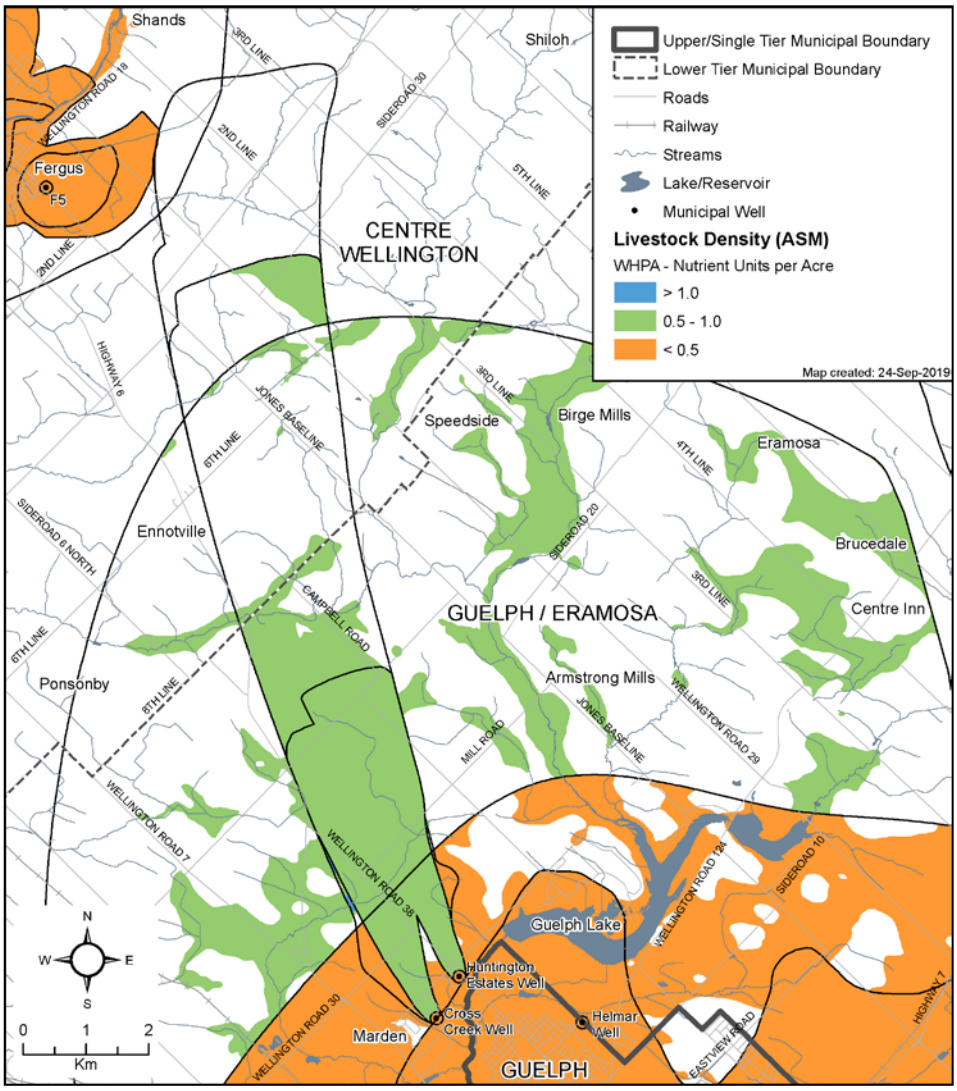
Map 6-49: Hamilton Drive Water Supply Percent Managed Lands



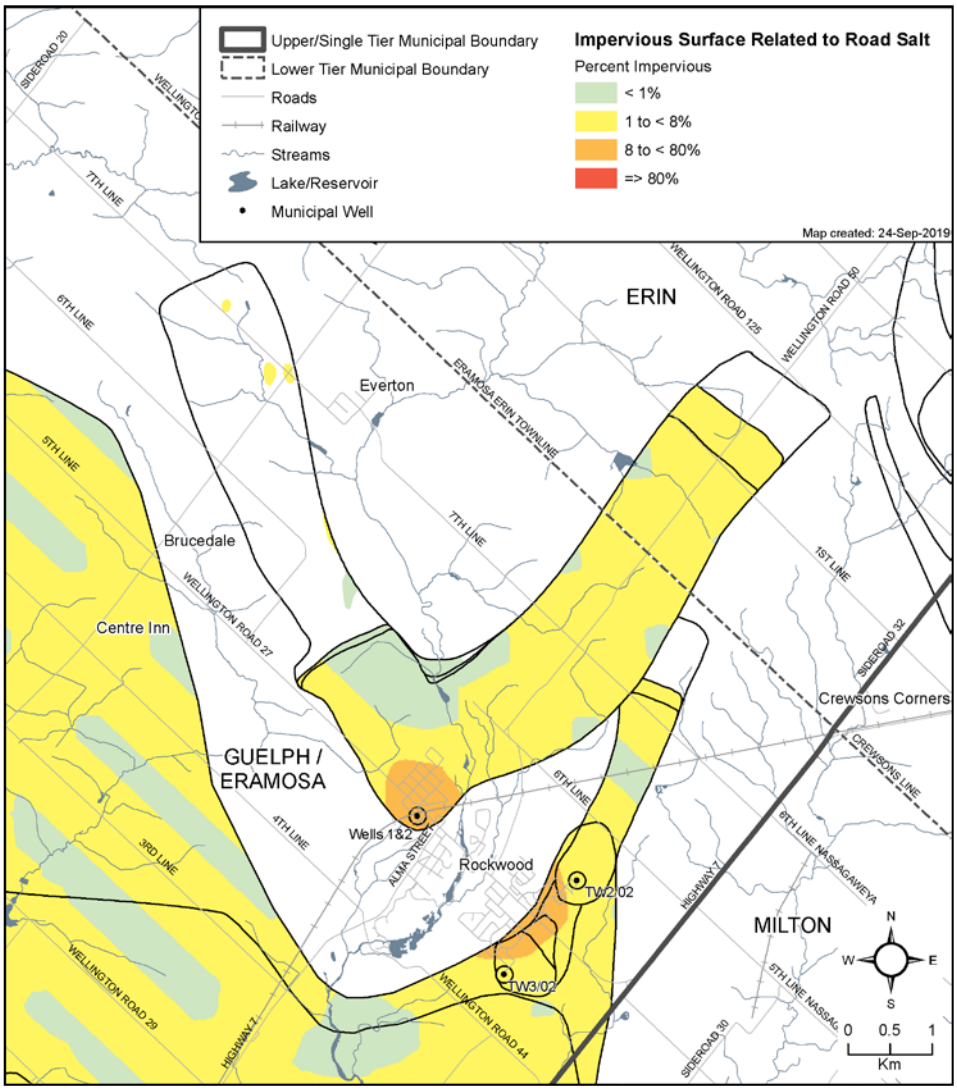
Map 6-50: Rockwood Water Supply Livestock Density



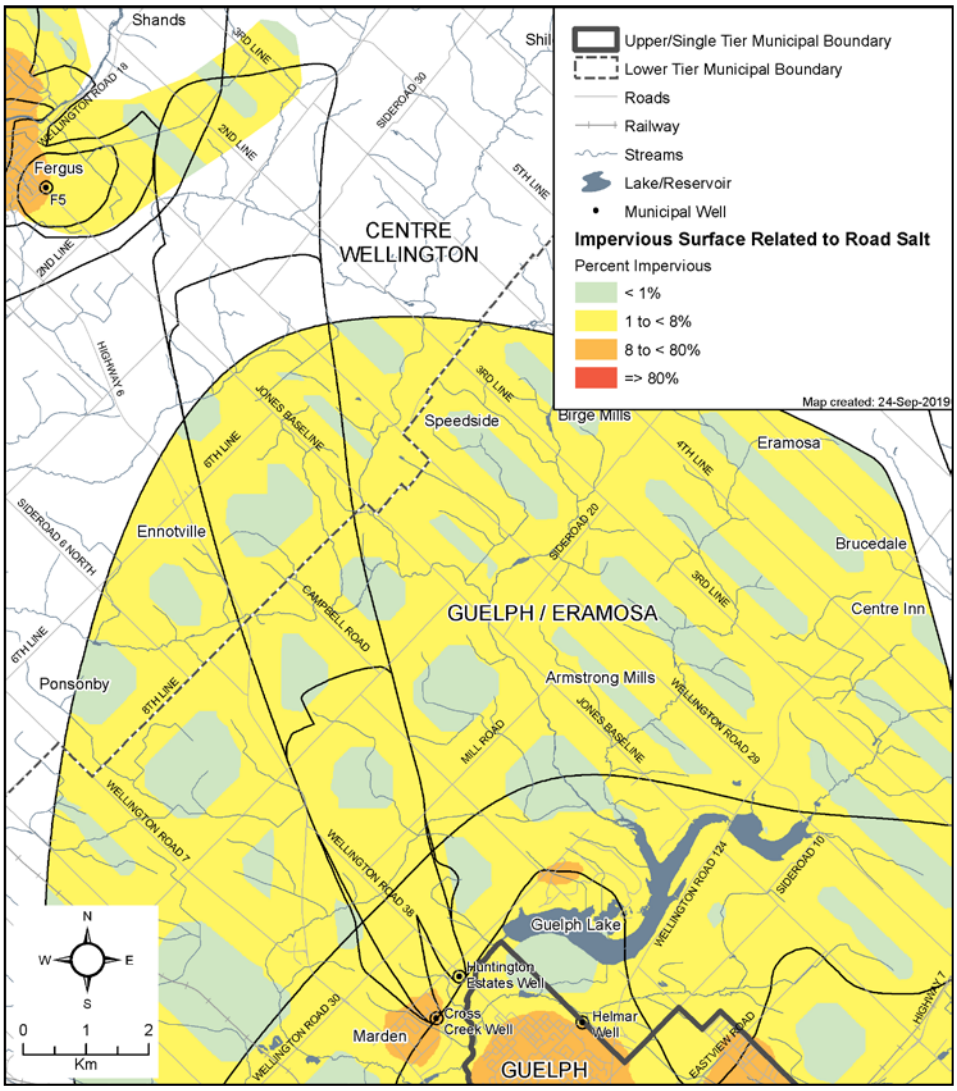
Map 6-51: Hamilton Drive Water Supply Livestock Density



Map 6-52: Rockwood Percent of Impervious Surfaces



Map 6-53: Hamilton Drive Percent of Impervious Surfaces



6.4.4 Drinking Water Threats Assessment

The Ontario Clean Water Act, 2006, defines a Drinking Water Threat as "an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water, and includes an activity or condition that is prescribed by the regulation as a drinking water threat." A Prescribed Drinking Water Threats table in Chapter 3 of this Assessment Report lists all possible drinking water threats.

Identification of Significant, Moderate and Low Drinking Water Quality Threats for the Rockwood and Hamilton Drive Water Supply Systems

The identification of a land use activity as a significant, moderate, or low drinking water threat depends on its risk score, determined by considering the circumstances of the activity and the type and vulnerability score of any underlying protection zones, as set out in the Tables of Drinking Water Threats available through www.sourcewater.ca. Information on drinking water threats is also accessible through the Source Water Protection Threats Tool: http://swpip.ca. ~~For local threats, the risk score is calculated as per the Director's Approval Letter, as shown in **Appendix C.**~~ The information above can be used with the vulnerability scores shown in **Map 6-43 and Map 6-47** to help the public determine where certain activities are or would be significant, moderate and low drinking water threats.

Table 6-37 provides a summary of the threat levels possible in the Rockwood and Hamilton Drive Well Supplies for Chemical, Dense Non-Aqueous Phase Liquid (DNAPL), and Pathogens. A checkmark indicates that the threat classification level is possible for the indicated threat type under the corresponding vulnerable area / vulnerable score; a blank cell indicates that it is not. The colours shown for each vulnerability score correspond to those shown in the maps.

Table 6-39: Identification of Drinking Water Quality Threats in the Rockwood and Hamilton Drive Wellhead Protection Areas

Threat Type	Vulnerable Area	Vulnerability Score	Threat Classification Level		
			Significant 80+	Moderate 60 to <80	Low >40 to <60
Chemicals	WHPA-A/B	10	✔	✔	✔
	WHPA-B/C	8	✔	✔	✔
	WHPA-C/D	6		✔	✔
	WHPA-D	2 & 4			
Handling / Storage of DNAPLs	WHPA-A/B/C	Any Score	✔		
	WHPA-D	6		✔	✔
	WHPA-D	2 & 4			
Pathogens	WHPA-A/B	10	✔	✔	
	WHPA-B	8		✔	✔
	~~WHPA-C/D~~	~~Any Score~~			

6.4.5 Conditions Evaluation

Conditions are contamination that already exist and are a result of past activities that could affect the quality of drinking water. To identify a Condition, Part XI.3, Rule 126 of the Technical Rules (MOECC, 2017), lists criteria for drinking water sources, which is outlined in Chapter 3 of this Assessment Report.~~Conditions are contamination that already exist and are a result of past activities that could affect the quality of drinking water. To identify a Condition, Part XI.3, Rule 126~~

~~of the CWA Technical Rules (MOE, 2009b), lists the following two criteria for groundwater sources:~~

- ~~The presence of a non-aqueous phase liquid in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or wellhead protection area.~~
- ~~The presence of a contaminant in groundwater in a highly vulnerable area, significant groundwater recharge area or a wellhead protection area, if the contaminant is listed in Table 2 of the Soil, Groundwater and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that Table.~~

~~The above listed criteria were used to evaluate potentially contaminated sites within the Rockwood and Hamilton Drive WHPAs to determine if such a Condition was present at a given site.~~

The criteria were used to evaluate potentially contaminated sites within the Rockwood and Hamilton Drive WHPAs to determine if such a Condition was present at a given site.

Conditions Evaluation for the Rockwood and Hamilton Drive Water Supply Systems
A review of available data regarding potential contamination within the Wellhead Protection Areas was completed. Data available included databases from the Ecolog ERIS results such as Record of Site Condition, MECP Spills Database and Occurrence Reporting Information System.

Table 6-38 provides a summary of potential conditions identified through the Ecolog ERIS search. This search of available databases does not provide evidence of a condition such as water quality results or monitoring report results.

Table 6-40: Summary of Potential Conditions within the Rockwood Wellhead Protection Areas

Source Database	Description	Vulnerable Area Location	Details
ORIS	Heating oil spill	Rockwood 1/2 WHPA-B	275 L spill to ground in 2002, possible impact
ORIS	Furnace oil spill	Rockwood 1/2 WHPA-B	Unknown amount spilled to municipal sewer, 1997
ORIS	Furnace oil spill	Rockwood 1/2 WHPA-B	160L spill to ground, impact confirmed, 1992
WDSH/ANDR	Old village dump	100 m outside Rockwood 1/2 WHPA-B	Landfill closed 1964, classified as no potential environmental and health impacts.
ORIS	PCP/oil mixture spill	Cross Creek WHPA-D	68L spill to ground in 1996, impact confirmed, cleaned up.

In addition to the condition site assessment presented above and in the Approved Grand River Assessment Report (August 2012), additional information wh~~as been~~ obtained from municipal files and some responsible parties pertaining to condition sites within the Township of Guelph / Eramosa. This information was reviewed in 2015 and two (2) sites were identified as condition sites but not as significant drinking water threat condition sites. In 2019, these sites were reviewed

and based on changes to the Director's Technical Rules, the two (2) sites are no longer condition sites. ~~As a result, the available documents, reports and data pertaining to an additional, two (2) potential condition sites were reviewed to determine whether any of the sites met the technical rules as a condition or significant drinking water threat condition site.~~

Based on the documentation available ~~at this time~~in 2019, the additional, two (2) sites within Rockwood 1 / 2, WHPA A are not considered condition sites under Technical Rule 126.~~, however, there is not sufficient evidence to identify the sites as significant drinking water threat condition sites under technical rule 140.~~

~~Based on available data there were two Conditions identified under Rule 126 in the Rockwood or Hamilton Drive Wellhead Protection Areas, however, no Significant Drinking Water Threat Conditions sites were identified under technical Rule 140.~~

6.4.6 Drinking Water Quality Issues Evaluation

The objective of the Issues evaluation is to identify drinking water Issues where the existing or trending concentration of a parameter or pathogen at an intake, well or monitoring ~~well~~ location would result in the deterioration of the quality of water for use as a source of drinking water. The parameter or pathogen must be listed in Schedule 1, 2 or 3 of the Ontario Drinking Water Quality Standards (ODWQS) or Table 4 of the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines (Technical Rules XI.1 (114 – 117)). Elevated concentrations of selected parameters that are naturally occurring or where effective treatment is in place are not considered drinking water Issues.

Once a drinking water Issue is identified, the objective is to identify all sources and threats that may contribute to the Issue within an Issue Contributing Area and manage these threats appropriately. If at this time the Issue Contributing Area can not be identified or the Issue can not be linked to threats then a work plan must be provided to assess the possible link.

If an Issue is identified for an intake, well or monitoring location~~well~~, then all threats related to a particular Issue within the Issue Contributing Areas are as significant drinking water threats, regardless of the vulnerability.

Methodology for the Drinking Water Quality Issues Evaluation

A review of the available water quality data to assess whether any contaminants are impacting or have the potential to impact or interfere with the Township of Guelph-Eramosa drinking water sources was completed. ~~(Burnside, 2010).~~ This included the following steps:

- Collection of water quality data
- Comparison of water quality data to the ODWQS to see if any parameters were in exceedance
- Concentrations of parameters of consideration over time were plotted to evaluate if there were any increasing trends.

Drinking Water Issues Evaluation for the Rockwood Water Supply System

Historical water quality data for the Rockwood wells indicate that the water is traditionally very hard and hardness often exceeds the ODWQS standards (Rockwood Annual Drinking Water Report 2008 to 2018~~Burnside, 2002b~~). A hardness concentration of 4806~~5~~ mg/L was recorded for Well 1 and 2 in 2018~~02~~. This is above the Operational Guideline of the ODWQS range of 80-100

mg/L ~~(Burnside, 2002b).~~ .This level is typical of drinking water obtained from a dolostone bedrock source and is not considered a condition that threatens the groundwater as a safe drinking water source.

~~MOE Annual Reports~~Water quality data for ~~2003 and 2005 to 2008~~up to August 2019 were reviewed. Sampling is completed at the supply systems weekly for microbiological parameters and once every 36 months for chemical parameters. Since 2018, sampling for sodium and chloride has been completed monthly at Station Street Wells 1 and 2. One exceedance of total coliforms (2 cfu/100 mL) was reported in June 2015. ~~All parameters analyzed met the ODWQS except for fluoride at Rockwood Well TW3/02.~~

~~The criteria were used to evaluate potentially contaminated sites within the Elora and Fergus WHPAs to determine if such a Condition was present at a given site.~~

In 2005, and exceedance of f~~F~~luoride ~~concentrations~~at Rockwood Well 3 was noted of 1.65 mg/L (MAC of 1.5 mg/L). ~~in 2005 and 1.7 mg/L in 2009 are recorded for Rockwood Well TW3/02~~No further exceedances for fluoride have been recorded since 2005.~~ Both concentrations exceed the Maximum Allowable Concentration (MAC) Ontario Drinking Water Standard (ODWS) of 1.5 mg/L.~~ Adverse effects of fluoride between 1.5 mg/L and 2.4 mg/L are considered to be only cosmetic in nature (dental mottling in a small portion of the population). The MECP~~OE~~ recommends that public awareness concerning other fluoride sources is raised when naturally occurring fluoride levels are between 1.5 mg/L and 2.4 mg/L. Since fluoride is naturally occurring and a non-health related parameter it is not considered an Issue under Technical Rule 114.

Elevated sodium concentrations have been recorded in Rockwood Wells 1 and 2 with levels ~~ranging from 62.5 to 97 mg/L~~reaching 180 mg/L in 2018 (Figure 2). The Ontario Drinking Water Standards MAC for sodium is 200 mg/L, however the local Medical Officer of Health should be notified when sodium concentrations exceed 20 mg/L. ~~–~~There has been a ~~n slightly~~ sharp increasing trend at~~for~~ Rockwood Wells 1 and 2 during 2018 and 2019.~~; however, this trend is based on only a few data points ranging over several years and recent sampling (2010) shows a decrease in concentration. The concentrations have yet to reach the MAC/2 (100 mg/L), which triggers increased sampling frequency under the Safe Drinking Water Act for municipal water systems.~~. ~~Sodium concentrations at Rockwood Well 3 have been increasing slightly from 3 mg/L in 2005 to 17 mg/L in 2019. Sodium concentrations at Rockwood Well 3 are below the Indicator of Adverse Quality (20 mg/L).~~In February 2018, chloride concentrations at Rockwood Wells 1 and 2 are at the Maximum Acceptable Concentration of 250 mg/L with five exceedances in 2019 (Figure 3). Chloride concentrations range from 180 to 260 mg/L (2018 and 2019) at Rockwood Wells 1 and and 2.

Sodium concentrations at Rockwood Well 3 have been increasing slightly from 3 mg/L in 2005 to 17 mg/L in 2019. Sodium concentrations at Rockwood Well 3 are below the Indicator of Adverse Quality (20 mg/L). Chloride concentrations show a stable trend in Rockwood Well 3 with concentrations ranging from 33 to 37 mg/L (2018 and 2019).

Elevated sodium and chloride concentrations at Rockwood Wells 1 and 2 may be an indication of impacts from the application of road salt., however, have not been ~~and may be~~ higher during the winter and spring months when runoff from roads is recharging the aquifer. ~~The higher values in 2009 are from samples collected in February and March while the lower values in 2002 and 2003 were from samples collected in May and August. Therefore, the difference in values may be a result of seasonal variations of sodium concentrations within the aquifer. More frequent sampling would be required to confirm if a trend exists~~. An increase in sampling frequency during 2018 and

2019 did not show a seasonal trend, but rather a sharp increasing trend. The municipality is further assessing the potential sources, trends, timing and fate / transport mechanisms for sodium and chloride at the Station Street Wells 1 and 2.

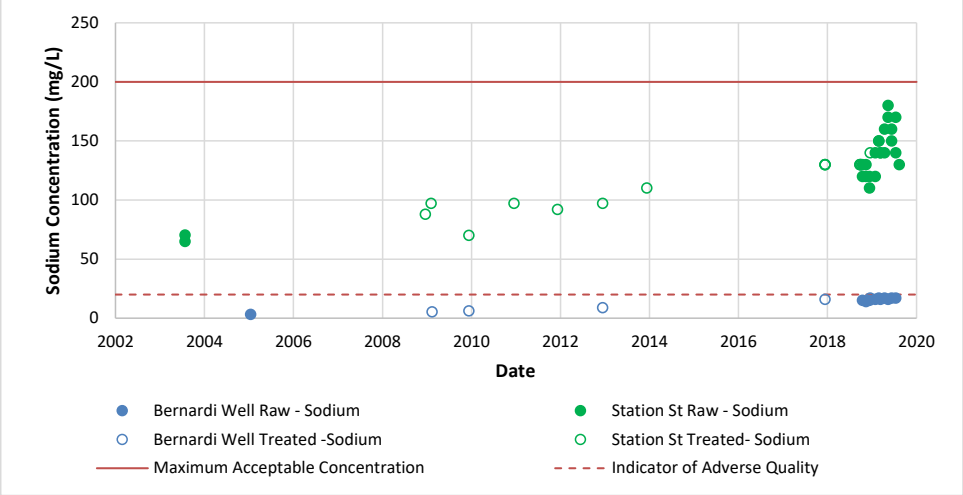


Figure 2: Sodium Concentrations at Rockwood Wells (Bernardi (3) and Station St. (1and 2))

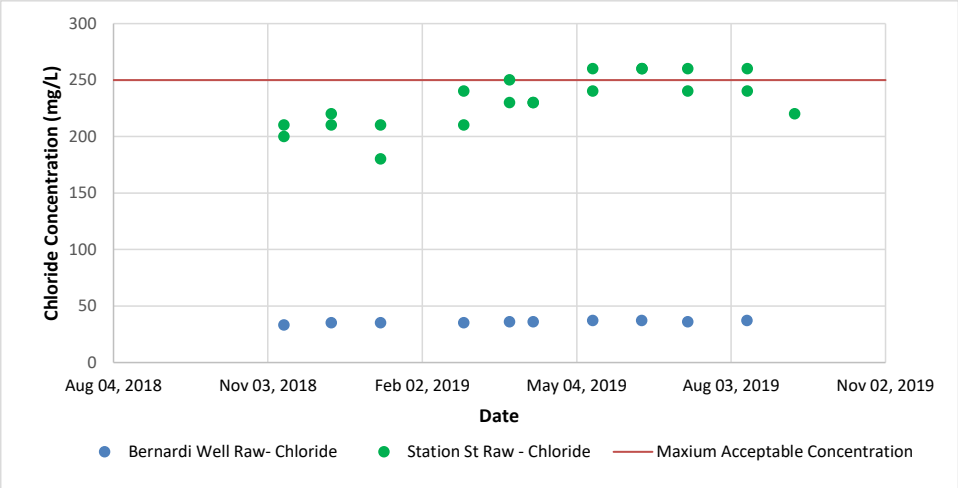


Figure 3: Chloride Concentrations at Rockwood Wells (Bernardi (3) and Station St. (1and 2))

A Microbial Contamination Control Plan for Wells 1 and 2 was prepared in September 2008 to comply with the Certificate of Approval 3052-5RBP8E. As part of this report, particle counting was completed at the well. The results from the report indicate there are no microbial water quality Issues for the Rockwood Water Supply (Burnside, 2008).

Summary of Water Quality Issues Evaluation for the Rockwood Water Supply System

It is recommended that the sodium and chloride concentrations at Station Street Wells 1 and 2 be described a drinking water issue per Technical Rule 115.1 under Section 15(2) (f) of the *Clean Water Act, 2006.* Under this Technical Rule, an Issues Contributing Areas is not delineated and therefore there can be no significant threat activities identified associated with this issue. The only applicable policies would relate to the monitoring of the sodium and chloride issue. Since in-depth sampling has only been ongoing since 2018 and since it is unclear whether the source is naturally occurring, this issue approach allows the Township time to complete further sampling and study into the trends, timing and fate / transport mechanisms for sodium and chloride at the Station Street Wells 1 and 2.

~~Sodium is identified as a parameter of concern due to higher concentrations at Rockwood Wells 1 and 2, but there is not enough data, nor is there an obvious increasing trend, to identify.~~ Ssodium ~~has not been identified as an Issue under Technical Rule 114.~~

There are currently no Issues concerning drinking water quality ~~for~~ and requiring an Issues Contributing Area for the Rockwood Water Supply.

Drinking Water Issues Evaluation for the Hamilton Drive Water Supply System

Historical water quality analysis results of raw water samples from the Cross Creek Well and Huntington Well indicate exceedences of the ODWQS for hardness in both wells with values ~~ranging from 275 to 291~~of 300 mg/L in 2019.~~(Burnside, 2001b).~~ This level is typical of drinking water obtained from a dolostone bedrock source and is not considered an Issue that threatens the groundwater as a safe drinking water source.

~~MOE Annual Reports for 2005-2008~~Water quality data for up to 2019 were reviewed ~~with no exceedences identified~~. Microbiological data reported exceedences in August 2015, June 2017, July 2017, and October 2017of ~~from 2002 to 2009 showed no concerns with~~ total coliforms. One exceedance of~~or~~ *E.coli* was reported for July 2017.

Fluoride concentrations range from 0.14 to 0.16 mg/L at the Hamilton Drive Wells. A review of fluoride concentrations to 2019 reported no exceedences of the Maximum Allowable Concentration (MAC) Ontario Drinking Water Standard (ODWS) of 1.5 mg/L.

Sodium concentrations range from 9.8 to 29 mg/L at the Hamilton Drive Wells. A review of sodium concentrations at the Huntington Well reported exceedences of the Indicator of Adverse Quality of 20 mg/L; however the Aesthetic Objective of 200 mg/L was not exceeded. There were no exeedences of sodium at the Cross Creek Well. Chloride concentrations range from 9.2 to 47 mg/L at the Hamilton Drive Wells. The chloride concentrations at Hamilton Drive are below the MAC ODWS for chloride of 250 mg/L.

Summary of Drinking Water Issues Evaluation for the Hamilton Drive Water Supply System

There are currently no Issues concerning drinking water quality for the Hamilton Drive Water Supply.

Limitations and Uncertainty for the Drinking Water Issues Evaluation
The water quality data reviewed covered a period from 2001 to ~~2009~~2019; however sampling frequency did no increase until 2018~~.~~ This is a limited time span with frequent sampling making it difficult to ~~identify~~ confirm trends~~, especially when not all parameters were sampled during each year~~. It is also noted that there is no monitoring well water quality data available. Monitoring wells are only monitored for water levels as part of the PTTW requirements.

6.4.7 Enumeration of Significant Drinking Water Quality Threats

The Technical Rules (MOECC, ~~2009b~~2017) require an estimation of the number of locations at which an Activity is a significant drinking water threat and the number of locations at which a Condition resulting from past activity is a significant drinking water threat.

6.4.7.1 Initial Enumeration of Significant Drinking Water Threats

For the initial enumeration in the 2012 Assessment Report, numerous data sources were used to identify threats on properties within the Wellhead Protection Areas.

Data Sources for the Enumeration of Significant Drinking Water Quality Threats
EcoLog Environmental Risk Information Services Ltd. (EcoLog ERIS) is a national database service, which provides specific environmental and real estate information for locations across Canada. A review of all available provincial, federal and private environmental databases was requested for the areas within a radius around the wells that included the outer edge of the WHPA. As a result, the search included data to the west of the WHPAs. The search included the following databases:

Federal Government Source Databases
- National PCB Inventory 1988 – June 2004
- National Pollutant Release Inventory 1994 – 2004
- Environmental Issues Inventory System 1992 – 2001
- Federal Convictions 1988 – January 2002
- Contaminated Sites on Federal Land June 2000 – 2005
- Environmental Effects Monitoring 1992 – 2004
- Fisheries & Oceans Fuel Tanks 1964 – September 2003
- Indian & Northern Affairs Fuel Tanks 1950 – August 2003
- National Analysis of Trends in Emergencies System (NATES) 1974 – 1994
- National Defense & Canadian Forces Fuel Tanks Up to May 2001
- National Defense & Canadian Forces Spills March 1999 – February 2005
- National Defense & Canadian Forces Waste Disposal Sites 2001,2003
- National Environmental Emergencies System (NEES) 1974 – 2003
- Parks Canada Fuel Storage Tanks 1920 – January 2005
- Transport Canada Fuel Storage Tanks 1970 – May 2003.

Provincial Government Source Databases
- Certificates of Approval 1985 – September 2002
- Ontario Regulation 347 Waste Generators Summary 1986 – 2004
- Ontario Regulation 347 Waste Receivers Summary 1986 – 2004
- Private Fuel Storage Tanks 1989 – 1996

- Ontario Inventory of PCB Storage Sites 1987 – April 2003
- Compliance and Convictions 1989 – 2002
- Waste Disposal Sites – MOE CA Inventory 1970 – September 2002
- Waste Disposal Sites – MOE 1991 Historical Approval Inventory Up to October 1990
- Occurrence Reporting Information System (ORIS) 1988 – 2002
- Pesticide Register 1988 – August 2003
- Wastewater Discharger Registration Database 1990 – 1998
- Coal Gasification Plants 1987, 1988
- Non-Compliance Reports 1992(water only), 1994 – 2003
- Ministry Orders 1995 – 1996
- Aggregate Inventory Up to May 2005
- Abandoned Aggregate Inventory Up to September 2002
- Abandoned Mines Inventory System 1800 – 2005
- Record of Site Condition 1997 – September 2001
- Ontario Oil and Gas Wells (1999 – Oct 2004; 1800 – May 2004 available for 14 select counties)
- Drill Holes 1886 – 2005
- Mineral Occurrences 1846 – October 2004
- Environmental Registry 1994 – July 2003

Private Sources Databases

- Retail Fuel Storage Tanks 1989 – June 2005
- Canadian Pulp and Paper 1999, 2002, 2004, 2005
- Andersen's Waste Disposal Sites 1930 – 2004
- Scott's Manufacturing Directory 1992 – 2005
- Chemical Register 1992,1999 – June 2005
- Canadian Mine Locations 1998 – 2005
- Oil and Gas Wells October 2001 – 2005
- Automobile Wrecking & Supplies 2001 – June 2005
- Anderson's Storage Tanks 1915 – 1953
- ERIS Historical Searches, March 1999 – 2005.

The database search identified numerous items within the search radius around the various Wellhead Protection Areas, which were later confirmed through field site reconnaissance. All potential contaminant sources identified have been mapped and compiled into the project database.

Historical and current aerial photographs were reviewed to identify land use changes and potential high-risk activities such as waste disposal sites within the Wellhead Protection Areas. While the resolution of the photographs limits the detail that can be observed of the surface conditions, the following is a summary of what can be discerned:

- **1978 Aerial Photography:** Within Rockwood Well 1 and 2 Wellhead Protection Area, the southern portion is dominated by the Eramosa River and its associated forested buffer area. Residential development is visible to the north of the wells along three streets directly adjacent to Main Street North. The northern part of the WHPA contains agricultural land uses with some rural residences. Agricultural land uses are prominent within the Wellhead Protection Areas of Rockwood Wells 3 and 4. Some residential and commercial buildings exist along Main Street South (Highway 7) within the Village of Rockwood. A small active

gravel pit/quarry located between the two Wellhead Protection Areas, north of the Village and east of Eramosa was noted. Several surface water features at the pit are visible in the photograph. No waste disposal sites or potential brownfield sites were identified. Within the Cross Creek and Huntington Wellhead Protection Areas, land is generally agricultural and wetlands. The subdivisions of Cross Creek and Huntington are not present in the photograph.

- **2000 Aerial Photography:** The photographs from 2000 revealed that land use within the Rockwood Wellhead Protection Areas has remained relatively unchanged with the Eramosa River and its associated forested buffer dominating the western portion of the areas and agricultural land uses dominating the eastern portions of the area. Some development has occurred south of Main Street South (Highway 7), in the vicinity of Well TW3/02, and north of Main Street North, in the vicinity of Wells 1 and 2. The pit/quarry noted in the 1978 photograph is visible although appears to be no longer in use. Surface water features visible in the 1978 aerial photography appear to remain generally unchanged in the 2000 photography. A junk and scrap yard was identified within WHPA-D at 6th Line and Sideroad 10. Within the Cross Creek and Huntington Wells Wellhead Protection Area, some development of houses and small subdivisions has taken place since the 1978 air photograph.

A drive-by roadside inspection of the Wellhead Protection Areas was completed on July 27, 2006 to verify and complement the dataset compiled during the records review portion of the assessment. The inspection consisted of a fence line/roadside documentation of the properties and their land uses included in the Wellhead Protection Area.

Within the Rockwood Well 1 and 2 Wellhead Protection Areas, one cemetery, a gravel pit and an automotive repair shop were identified. Land uses within Rockwood Well TW3/02 and Well TW2/02 Wellhead Protection Areas include residential lands, natural areas and agricultural lands. Rockwood Well TW3/02 is located on the edge of a developing subdivision in the Village of Rockwood. At the time of the site visit, construction of new houses within the subdivision was taking place. Agricultural fields are located south of the well. Several livestock farms were identified in the Wellhead Protection Areas.

Land uses within the Cross Creek and Huntington Wellhead Protection Areas include residential and agriculture. One cemetery was identified in the Cross Creek Wellhead Protection Area.

Land Use Activity Assumptions for the Purpose of Enumerating Significant Drinking Water Quality Threats

A standardized set of assumptions were made for each land use type and activity. The assumptions are summarized in **Table 6-39.**

Table 6-41: Land Use Activity Assumptions for the Purpose of Enumerating Significant Drinking Water Quality Threats in the Rockwood and Hamilton Drive Water Supply Systems

Scenario	Assumption
Agricultural property with residence and outbuildings	• Storage and handling of pesticides, fuel, commercial fertilizer, agricultural source material, septic system. • Application of pesticide, commercial fertilizer, agricultural source material.

Table 6-41: Land Use Activity Assumptions for the Purpose of Enumerating Significant Drinking Water Quality Threats in the Rockwood and Hamilton Drive Water Supply Systems

Scenario	Assumption
Agricultural property with residence and outbuilding – buildings not in WHPA	• Circumstances related to storage and handling or septic systems are not applied. Those related to application are applied.
Agricultural property without farm buildings and structures	• Circumstances related to storage and handling or septic systems are not applied. Those related to application are applied.
Residence with no gas line	• Oil furnace
Organic solvent	• Storage below grade in a quantity that would make it a significant threat
No sanitary sewer infrastructure	• Septic system
Presence of any chemical	• Storage is below grade
Multiple PINs associated with one Assessment Roll number	• One threat point assigned to the entire assessed property.
Where an assessment line transects a property, but has one PIN	• One threat point assigned to the entire property.
Lawn/turf	• Potential application of commercial fertilizer (ID dependent on the percent of managed land and the application of NU to the surrounding properties)
Municipal well sites	• Commercial fertilizer not applied unless the well is within a municipal park, in which case there is potential that fertilizer is applied.
All properties	• If buildings and structures are located outside the vulnerable area – circumstance IDs associated with storage and handling are not applied
Septic system	• In serviced villages where sanitary services are being phased in, but have not yet reached the mandatory connection date, it is assumed private septic systems are still present.
Sanitary sewers	• A sanitary sewer is a linear feature. For the purposes of enumeration of threats, where a sanitary sewer is present one threat point is assigned to represent the sanitary sewer in each WHPA.
Storm sewer piping	• Storm sewer piping is not considered to be part of a storm water management facility.

To complete the threats classification the data fields within the database were populated using the following methods and assumptions.

Land use activities were assigned based on the tables provided in the MOE Lookup Table Database v. 7.1.2 (WRIP, 2009). They were assigned a land use category and a land use activity name based on best fit with the actual land use activity.

Threats were assigned based on the land use activities and the threats listed for those activities in the ~~MOE~~ MECP Lookup Tables. All threats were assumed to be present except in the following circumstances:

- Playing fields were assigned the land use activity name Spectator Sports. The threat application of commercial fertilizer was manually added.
- Cemeteries were assigned the land use of Religious Organizations. The threat application of commercial fertilizer was manually added.
- For agricultural land uses, if the parcel did not have any farm buildings located on it, any threats related to storage (i.e. fuel, fertilizer, pesticides) were removed.
- The threat, "Waste Disposal Site – Storage of wastes described in clauses (p), (q), (r), (s), (t) or (u) of the definition of hazardous waste" was only applied to properties with a Certificate of Approval and/or are a registered waste generator or waste receiver.
- Threat points were placed in the area on the parcel with the highest vulnerability score except for residential fuel tank and septic systems threats which were placed within a reasonable distance of the associated building.
- All residential properties have been assumed to have fuel storage tanks for heating except for houses built in Rockwood after 2000. A threat has been assigned to each parcel within the WHPA. Homes built after 2000 are assume to be heated by natural gas, electrical or propane.

6.7.4.2 Enumeration of Significant Drinking Water Threats for 2019 Assessment Report

Since the initial enumeration of significant drinking water threats for the 2012 Assessment Report, a substantial amount of work has been completed by municipal Risk Management staff and consultants to verify threats at a site level. This work has included additional air photo analysis, site visits, windshield surveys, review of databases and site specific files / reports. The focus of this work is to compete verification of significant drinking water threats and where warranted negotiate risk management plans and to conduct inspections. This work has been focused within the wellhead protection areas delineated in the 2012 and 2015 Assessment Reports. New wellhead protection areas have now been delineated, however, there is overlap between the 2015 and the new wellhead protection areas.

For purposes of updating significant drinking water quality threats in the newly delineated wellhead protection areas, a review is being conducted of the existing database of verified threats, municipal servicing data and air photos. Results will be updated in the Assessment Report prior to public consultation.

Significant Drinking Water Threats for the Rockwood Water Supply

As per the Technical Rules (MOECC, 2017~~09b~~), the enumeration of significant threats is required for the completion of the Assessment Report. **Table 6-40** summarizes the significant threats identified in the Rockwood Wellhead Protection Areas in the Township of Guelph-Eramosa.

Table 6-42: Significant Drinking Water Quality Threats in the Rockwood Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	7	WHPA-A WHPA-B
2	Sewage System or Sewage Works- ~~Septic~~ Onsite Sewage Systems	34	WHPA-B

Table 6-42: Significant Drinking Water Quality Threats in the Rockwood Wellhead Protection Areas

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
	Sewage System or Sewage Works- Sanitary Sewers and related pipes	1	WHPA-A WHPA-B
	Sewage System or Sewage Works- Discharge of Untreated Stormwater from a Stormwater Retention Pond	2	~~WHPA-A~~ WHPA-B
3	Application of Agricultural Source Material to Land	21	WHPA-A WHPA-B
4	Handling and Storage of Agricultural Source Material	8	WHPA-B
8	Application of Commercial Fertilizer	17	WHPA-B
9	Handling and Storage of Commercial Fertilizer	8	WHPA-B
10	Application of Pesticides to Land	21	WHPA-A WHPA-B
11	Handling and Storage of Pesticides	8	WHPA-B
16	Handling and Storage of Dense Non-Aqueous Phase Liquids	9	WHPA-A WHPA-B WHPA-C
17	Handling and Storage of Organic Solvents	7	WHPA-A WHPA-B
21	Management or handling of Agricultural Source Material- Agricultural Source Material (ASM) Generation (Grazing and pasturing)	8	WHPA-B
Total Number of Activities		**151**	
Total Number of Properties		**52**	

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Residential handling and storage of fuel threats were not enumerated as significant threats due to Natural gas service being provided to the Township of Guelph-Eramosa in 2000. Further, polices must be created in order to address potential fuel storage tanks remaining on residential properties.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Significant Drinking Water Threats for the Hamilton Drive Water Supply

As per the Technical Rules (MOECC, ~~2009b~~2017), the enumeration of significant threats is required for the completion of the Assessment Report. **Table 6-41** summarizes the significant threats identified in the Hamilton Drive Wellhead Protection Areas.

Table 6-43: Significant Drinking Water Quality Threats for the Hamilton Drive Water Supply System

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
1	Waste Disposal Site- Storage of Hazardous Waste at Disposal Sites	2	WHPA-A

Table 6-43: Significant Drinking Water Quality Threats for the Hamilton Drive Water Supply System

PDWT[1] #	Threat Subcategory[2]	Number of Activities	Vulnerable Area
2	Sewage System or Sewage Works- ~~Septic~~ Onsite Sewage Systems	23	WHPA-A WHPA-B
3	Application of Agricultural Source Material to Land	1	WHPA-B
8	Application of Commercial Fertilizer	1	WHPA-B
10	Application of Pesticides to Land	1	WHPA-B
16	Handling and Storage of Dense Non-Aqueous Phase Liquids	3	WHPA-A WHPA-B
17	Handling and Storage of Organic Solvents	2	WHPA-A
Total Number of Activities		**33**	
Total Number of Properties		**27**	

1: Prescribed Drinking Water Threat Number refers to the prescribed drinking water threat listed in O.Reg 287/07s.1.1.(1).
Note: Residential handling and storage of fuel threats were not enumerated as significant threats due to Natural gas service being provided to the Township of Guelph-Eramosa 2000. Further, polices must be created in order to address potential fuel storage tanks remaining on residential properties.

2: Where applicable, waste, sewage, and livestock threat numbers are reported by sub-threat; fuel and DNAPL by Prescribed Drinking Water Threat category.

Note: Storm sewer piping is not considered to be part of a storm water management facility.

Limitations and Uncertainty for the Enumeration of Significant Drinking Water Quality Threats for the Rockwood and Hamilton Drive Well Supply

In this study a number of databases were used to create the threats enumeration. All databases have an error associated with them, whether it applies to the spatial or attribute information. The accuracy of the databases used depends on the source, the age of the information and the scale at which the spatial information was recorded. To decrease some of the error in the database information a field reconnaissance was completed to confirm the data when possible. Therefore, the uncertainty associated with the location of threats is predominantly low since most were field verified.

Commented [KD2]: This section should be moved to the initial enumeration section once the new enumeration is completed and a new limitations section is added. In the new enumeration section, we need to add a limitation about the vulnerability assessment not being updated to match the new understanding in the Tier 3 model.

The determination of land use activities used a series of assumptions which have an uncertainty associated to them. For this enumeration, it was assumed that any possible threats associated with an activity were present and that all potential chemicals were present. The circumstances and quantity for each threat were assigned based on available knowledge such as typical storage practices, typical chemical quantities and typical waste disposal practices for that particular land use activity.

Based on the uncertainty involved in the assumptions and data used, the uncertainty for the threats enumeration has been classified as high. This level of uncertainty is expected in a desk top study. It is anticipated that additional information that is collected over time will allow for the uncertainty related to the hazard rating to be reduced.

Table 6-42 summarizes the uncertainty assessment for the enumeration of significant drinking water quality threats in the Rockwoods and Hamilton Drive Water Supply Systems.

Table 6-44: Uncertainty Assessment for Enumeration of Significant Drinking Water Quality Threats in the Rockwood and Hamilton Drive Water Supply Systems

	Uncertainty Type	WHPA-A	WHPA-B	WHPA-C	WHPA-D
Rockwood Threats Uncertainty	Location of Threats	Low	Low	High	High
	Circumstances of threats	High	High	High	High
	Overall – Threats Uncertainty	High	High	High	High
Hamilton Drive Threats Uncertainty	Location of Threats	Low	Low	Low	Low
	Circumstances of threats	Low	High	High	High
	Overall – Threats Uncertainty	Low	High	High	High

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7.0 COUNTY OF WELLINGTON

The following County of Wellington Source Protection Plan policies apply to the water supply systems located within the County of Wellington within the Grand River watershed and to vulnerable areas originating from other municipalities as presented in the following schedules. Reference shall be made to the City of Guelph, Regional Municipality of Waterloo and Regional Municipality of Halton policies for the portions of the water supply systems located within those jurisdictions.

- Schedule A: Township of Wellington North, Arthur Well Supply
- Schedule B: Township of Mapleton, Drayton Well Supply
- Schedule C: Township of Mapleton, Moorefield Well Supply
- Schedule D: Township of Centre Wellington, Index Map
- Schedule E: Centre Wellington Well Supply Map A
- Schedule F: Centre Wellington Well Supply Map B
- Schedule G: Centre Wellington Well Supply Map C
- Schedule H: Centre Wellington Well Supply Map D
- Schedule I: Township of Guelph/Eramosa, Index Map
- Schedule J: Township of Guelph/Eramosa Map A
- Schedule K: Township of Guelph/Eramosa Map B
- Schedule L: Township of Guelph/Eramosa Map C
- Schedule M: Township of Guelph/Eramosa Map D
- Schedule N: Township of Guelph/Eramosa Map E
- Schedule O: Township of Guelph/Eramosa Map F
- Schedule P: Township of Guelph/Eramosa Map G
- Schedule Q: Township of Erin, Groundwater Vulnerability Areas
- Schedule R: Township of Puslinch, Index Map
- Schedule S: Township of Puslinch Map A
- Schedule T: Township of Puslinch Map B
- Schedule U: Township of Puslinch Map C
- Schedule V: Town of Erin, Issue Contributing Areas
- Schedule W: Township of Centre Wellington, Issue Contributing Areas
- Schedule X: Township of Guelph/Eramosa, Issue Contributing Areas
- Schedule Y: Township of Puslinch, Issue Contributing Areas
- Schedule Z: County of Wellington, Intake Protection Zones

7.1 Definitions

General definitions are provided in Volume I of the Source Protection Plan or in the *Clean Water Act, 2006.* Defined terms are intended to capture both the singular and plural forms of these terms.

The following definitions shall apply to the County of Wellington Source Protection Policies.

County – means the Corporation of the County of Wellington.

Existing – except where otherwise indicated in this Plan, existing means:

a. A use, activity, building or structure at a location in a vulnerable area that is in compliance with all applicable regulations on the effective date of this Source Protection

Plan, or at some point prior to the effective date of the Source Protection Plan with a demonstrated intent to continue; or

b. An expansion of an existing use or activity, which may include a new building or structure to service the existing use or activity, where the expansion reduces the risk of contaminating drinking water; or

c. The expansion, replacement or alteration of an existing building or structure associated with a significant drinking water threat that does not increase the risk of contaminating drinking water; or

d. The conversion of an existing use to a similar use, provided it is demonstrated that the conversion will reduce the risk of contaminating drinking water.

New or Future – means not existing, as defined herein.

Municipality – means one or more of the seven lower tier municipalities located within the County, consisting of the Township of Guelph-Eramosa, Township of Centre Wellington, Town of Erin, Township of Mapleton, Township of Puslinch, Town of Minto, and the Township of Wellington North.

Stormwater Management Facility - means one or more of the following measures constructed to collect, control, infiltrate and / or discharge stormwater run-off.

- Stormwater management ponds (ie wet ponds)
- Dry or retention ponds
- Constructed wetlands
- Low impact development measures including, but not limited to, infiltration galleries / basins, soak away pits, pervious pipe (subsurface) and / or permeable pavement
- Infiltration trenches (open to surface) including but not limited to swales, vegetated strips
- Lot level infiltration measures used to infiltrate storm run-off from salt application areas. This excludes measures used solely to infiltrate roof run-off and water from foundation drains.

Salt Application Area – means the area where salt is applied to provide traction, ice or snow control including melting ice.

Salt – means any solid or liquid chloride-based chemical used to melt ice, provide traction and / or ice / snow control.

7.2 Wellington Source Protection Plan Policies

Policy Number	Source Protection Plan Policies within the County of Wellington
Transitional Policies and Implementation Timing	
WC-CW-1.1.1 *Implement. & Timing*	This source protection plan came into effect on July 1, 2016, the effective date specified in the Notice of Approval posted on the Environmental Registry of Ontario~~Bill of Rights Registry.~~. Amendments to the Source Protection Plan are permitted in accordance with the *Clean Water Act, 2006,* and the General

Policy Number	Source Protection Plan Policies within the County of Wellington
	Regulations. The effective date for amended policies, only including but not limited to the addition of new drinking water threats and regulated areas and activities, is the date of posting of the Notice of Approval of the amendment provisions on the Environmental ~~Bill of Rights~~ Registry of Ontario.
WC-CW-1.1.2 *Implement. & Timing*	Except as set out below, the policies contained in this Source Protection Plan shall come into effect on the date set out by the Minister. a. For Section 57 of the *Clean Water Act*, *2006*, if an activity was engaged in at a particular location before this Source Protection Plan takes effect, policies regarding prohibited activities do not apply to a person who engages in the activity at that location until 180 days from the date the relevant policies within the Source Protection Plan takes effect; b. For Section 58 of the *Clean Water Act*, *2006*, if an activity was engaged in at a particular location before the relevant policies within this Source Protection Plan takes effect and the Risk Management Official gives notice to a person who is engaged in the activity at that location, policies regarding regulated activities apply to the person who engages in the activity at that location on and after a date specified in the notice that is at least 120 days after the date the notice is given; c. For Section 59 of the *Clean Water Act*, *2006*, policies regarding restricted land uses shall come into effect the same day the relevant policies within the Source Protection Plan takes effect; d. Where the Source Protection Policies require the municipality to develop and implement education and outreach programs as the primary tool for managing or eliminating a particular significant threat, such programs shall be developed and implemented within five (5) years from the date the relevant policies within the Source Protection Plan takes effect. e. For Sections 43 of the *Clean Water Act*, *2006*, if an activity was engaged in a particular location before the relevant policies within this Source Protection Plan takes effect, amendments to Prescribed Instruments shall be completed within three (3) years from the date the Source Protection Plan takes effect; and, f. For Section 40 and 42 of the *Clean Water Act*, *2006*, the Official Plan must be amended to conform with the significant threat policies within five (5) years from the date the relevant policies within the Source Protection Plan takes effect or the next Official Plan review required under Section 26 of the *Planning Act* and the Zoning By-law within two (2) years from adoption of the Official Plan conformity amendment.
WC-CW-1.2 *Transition*	For the purposes of this Plan, where one or more of the following: a. A complete application for development under the *Planning Act or Condominium Act*; b. An application for Environmental Compliance Approval; or c. An application for a Building Permit has been received by the applicable implementing body prior to the date this Source Protection Plan takes effect, a related significant drinking water threat may be considered as existing and subject to the policies pertaining to existing significant drinking water threats. Where the above noted applications have lapsed or been withdrawn, the above noted transition policies shall no longer apply.
Uses and Areas Designated as Restricted Land Use	
WC-CW-1.3	In accordance with Section 59 of the *Clean Water Act*, *2006*, all land uses, except solely residential uses, where significant drinking water threat activities have been

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Part IV- RLU	designated for the purposes of Sections 57 and 58 of the *Clean Water Act, 2006* are hereby designated as Restricted Land Uses and a written notice from the Risk Management Official shall be required prior to approval of any Building Permit, *Planning Act or Condominium Act* application. Despite the above policy, a Risk Management Official may issue written direction specifying the situations under which a planning authority or Chief Bbuilding Oofficial may be permitted to make the determination that a site specific land use is, or is not, ~~that a site specific land use is not~~ designated for the purposes of section 59. Where such direction has been issued, a site specific land use that is the subject of an application for approval under the *Planning Act* or for a permit under the *Building Code Act* is not designated for the purposes of Section 59, provided that the planning authority or Chief Bbuilding Oofficial, as applicable, is satisfied that: a. The application complies with the written direction issued by the Risk Management Official; and b. The applicant has demonstrated that a significant drinking water threat activity designated for the purposes of section 57 or 58 will not be engaged in, or will not be affected by the application. Where the Risk Management Official has provided written direction designating a land use for the purpose of section 59, a written Notice from the Risk Management Official shall be required prior to approval of any Building Permit under the *Building Code Act, 1992* as amended, in addition to *Planning Act* and *Condominium Act* applications in accordance with Section 59 of the *Clean Water Act, 2006*.
Official Plan and Zoning By-law Amendment(s) Policies	
WC-MC-1.4 *Future Land Use Planning*	The County and/or municipality shall amend, as required, their Official Plan and Zoning By-Laws to: a. Identify the vulnerable areas in which drinking water threats prescribed under the *Clean Water Act, 2006* would be significant; b. Indicate that within the areas identified, any use or activity that is, or would be, a significant drinking water threat is required to conform with all applicable Source Protection Plan policies and, as such, may be prohibited, restricted or otherwise regulated by those policies; c. Incorporate any other amendments required to conform with the threat specific land use policies identified in this Source Protection Plan.
Education and Outreach Programs	
WC-CW-1.5 *Existing/Future Education & Outreach*	The municipality, in collaboration with Conservation Authorities and other bodies wherever possible, may develop and implement education and outreach programs directed at any, or all, significant drinking water threat prescribed under the *Clean Water Act*, *2006*, where such programs are deemed necessary and/or appropriate by the municipality and subject to available funding. Such programs may include, but not necessarily be limited to, increasing awareness and understanding of significant drinking water threats and promotion of best management practices.
Incentive Programs	
WC-CW-1.6 *Existing/Future Incentive*	The County and/or municipality, in collaboration with other bodies and levels of government wherever possible, may develop and implement incentive programs directed at various significant threat activities and/or condition sites prescribed under the *Clean Water Act*, *2006*, where such programs are deemed necessary and/or appropriate by the County and/or municipality, subject to available funding.

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WC-NB.-1.7 *Existing/Future Incentive*	The Ministry of the Environment, Conservation and Parks and other provincial ministries shall consider providing continued funding and support to protect existing and future drinking water sources and address significant drinking water threats under the Ontario Drinking Water Stewardship Program and Rural Water Quality Program.
WC-NB-1.8 *Existing/Future Incentive*	To reduce the risks to drinking water from an existing activity, where this activity is a significant drinking water threat, the Grand River Conservation Authority, in consultation with the County, will deliver available cost share incentive programs as long as the Grand River Conservation Authority has such programs and outreach staff available, and work with affected land owners to implement best management practices for the following activities: a. The application of agricultural source material to land; b. The storage of agricultural source material; and, c. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
Annual Reporting	
WC-CW-1.9 *Monitoring*	The municipality and / or County shall provide a report to the Source Protection Authority, by February 1st of each year, summarizing the actions taken to implement the Source Protection Plan policies, where specifically required by the policies. Where the municipality and / or County is required to implement education and outreach programs as the primary means of managing the risk associated with significant drinking water threats, the report must indicate, at minimum~~, the properties where these programs were implemented and~~ additional details on how the significant drinking water threat was managed and/or ceased to be significant.
WC-CW-1.10 *Monitoring*	Where the County and/or municipality is required to amend their Official Plan and/ Zoning By-law to bring their planning documents into conformity with the Source Protection Plan, the County and/or municipality shall provide proof of compliance to the Source Protection Authority, and shall provide a copy of such compliance within 30 days of adoption of the amendment(s) by County and/or municipal Council or, where the matter has been appealed to the Ontario Municipal Board, the date of their decision to approve.
WC-CW-1.11 *Monitoring*	The Risk Management Official shall provide a report to the Source Protection Authority, by February 1st of each year, summarizing the actions taken by the Risk Management Official to implement the Source Protection Plan policies, in accordance with the *Clean Water Act, 2006* and associated regulations.
WC-CW-1.12 *Monitoring*	Where the Source Protection Plan policies may result in amendments to a Prescribed Instrument or the issuance of a new Prescribed Instrument, the applicable ministry shall provide a summary of the actions taken the previous year to implement the policies and provide a written report summarizing this information to the Source Protection Authority by February 1st of each year.
WC-CW-1.13 *Monitoring*	Where the Source Protection Plan policies prohibit an activity that results in the denial of a Prescribed Instrument, the applicable ministry shall summarize the actions taken the previous year to implement the policies and provide a written report summarizing this information to the Source Protection Authority by February 1st of each year.

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WC-CW-1.14 *Monitoring*	The municipality shall provide a report to the Source Protection Authority, by February 1st, of each year, for the wells within its jurisdiction. This report shall summarize~~ing~~ the actions taken the previous year~~year~~ to assess the chloride concentrations related to Municipal Well E3 in Elora and Municipal Well F1 in Fergus and / or sodium and chloride concentrations related to Station Street Wells 1 and 2 in Rockwood, including recommendations for further study or monitoring, if required. The report shall include a conclusion on whether the chloride concentrations should be a ~~are a~~ described issue in accordance with the *Clean Water Act* and technical rules.
Conditions	
WC-MC-1.16 *Existing* *Prescribed Instr.* *Condition Sites* *Identified*	To address conditions resulting from past activities that are significant drinking water threats, the Ministry of the Environment, Conservation and Parks shall a. Ensure that all Prescribed Instruments issued for Condition sites include terms and conditions, as appropriate, to ensure that the risk to drinking water sources is managed. Appropriate conditions may include requirements for source control, remediation to provincial standards, monitoring and Contaminant Management Plans; b. Ensure that Prescribed Instruments include a condition requiring the instrument holder to report on the actions taken and the status of the site to the Ministry of Environment, Conservation and Parks, Source Protection Authority and the municipality on an annual basis; and c. Provide to the County and/or municipality a copy of the new or revised Prescribed Instrument.
WC-NB-1.17 *Existing* *Specify Action* *Condition Sites* *Identified*	To address Conditions resulting from past activities that are significant drinking water threats, the Ministry of the Environment, Conservation and Parks should prioritize abatement activities on Conditions Sites located within the Wellhead Protection Area A, Wellhead Protection Area B and Issues Contributing Areas.
WC-NB-1.18 *Existing* *Specify Action* *Condition Sites* *Identified* *Monitoring*	To address conditions resulting from past activities that are significant drinking water threats the Ministry of Environment, Conservation and Parks and the County and/or municipality: a. Shall meet at a minimum frequency of once a calendar year ~~every six months~~ for the purpose of mutually sharing information on Condition sites; b. Should mutually share information related, as appropriate, to technical investigations or remediation, technical data, actions taken by Ministry of Environment, Conservation and Parks or by the County and/or municipality, inspections, other relevant information; and c. Should develop an Information-Sharing Process document including requirements, if any, for meeting agendas, participants, the nature and format for the types of information to be mutually shared, and the Information-Sharing Process document should be developed within six months from the date the Source Protection Plan takes effect.
Strategic Action	
Spill Prevention, Spill Contingency or Emergency Response Plans	
WC-NB-1.19. *Existing/Future* *Specify Action*	To ensure spill prevention plans, contingency plans, and emergency response plans are updated for the purpose of protecting municipal drinking water sources with respect to spills that occur within a WHPA or IPZ along highways, or railway lines:

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	a. The County and/or Municipality is requested to incorporate the location of WHPAs and IPZs into their emergency response plans in order to protect municipal drinking water sources when a spill occurs along highways or rail lines; and b. The Ministry of the Environment, Conservation and Parks is requested to provide mapping of the identified vulnerable areas to assist the Spills Action Centre in responding to reported spills along transportation corridors.
Transport Pathways	
WC-NB-1. 20 *Existing/Future Specify Action*	To achieve the intent of the *Clean Water Act*, 2006, significant drinking water threats identified in the vicinity of a transport pathway shall be managed to reduce the risk to municipal drinking water sources such that they do not become a significant threat and that a pathway reduces the risk to the source water of a municipal water supply. The County and/or Municipality are requested to support ongoing programs which encourage the decommissioning of abandoned wells as per O. Reg. 903 within all WHPA-~~-~~A and IPZ-1~~One~~ areas where there is or would be a significant drinking water threat.
Prescribed Instruments	
WC-MC-1.21 *Existing/Future Prescribed Instr.*	Any Prescribed Instrument issued under the Nutrient Management Act that is created or amended or is used for the purposes of obtaining an exemption from a Risk Management Plan under section 61 of O. Reg. 287/07 shall incorporate terms and conditions that, when implemented, manage the activities they regulate such that those activities cease to be or never become, a significant drinking water threat. OMAFRA is expected to review all Prescribed Instruments issued under the Nutrient Management Act in areas where the activities they regulate are, or would be, significant drinking water threats to ensure the Prescribed Instruments contain such terms and conditions, including the Prescribed Instruments that are not directly created or issued by OMAFRA, such as Nutrient Management Plans.
WC-NB-1.22 *Existing/Future Specify Action*	OMAFRA, and other creators/issuers of Prescribed Instruments under the Nutrient Management Act, are expected to consult with the Risk Management Official with respect to any modifications or requirements that may need to be incorporated into such Prescribed Instruments to ensure the activities they regulate cease to be or never become significant drinking water threats.
Interpretation	
WC-CW-1.23 *Interpretation of Source Protection Plan*	The Source Protection Plan provides policies to meet the objectives of the *Clean Water Act, 2006*. The Source Protection Plan consists of the written policy text and Schedules. a. The Schedules in the Source Protection Plan identify the areas where the policies of the Source Protection Plan apply. The boundaries for the circumstances shown on the Plan Schedules are general. More detailed interpretation of the boundaries relies on the mapping in the approved Assessment Report and the Specific Circumstances found in the Tables of Drinking Water Threats, *Clean Water Act, 2006*. b. Where any Act or portion of an Act of the Ontario Government or Canadian Government is referenced in this Plan, such reference shall be interpreted to refer to any subsequent renaming of sections in the Act as well as any subsequent amendments to the Act, or successor thereof. This provision is

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	also applicable to any policy statement, regulation or guideline issued by the Province or the municipality.

7.3 Policies Addressing Prescribed Drinking Water Threats

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
1. Establishment, Operation or Maintenance of a Waste Disposal Site, within the Meaning of Part V of the *Environmental Protection Act*	
WC-MC-2.1 *Existing Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; WHPA-B-v.8; WHPA-C-v.8; IPZ-1-v.10*	To ensure an existing waste disposal site within the meaning of Part V of the *Environmental Protection Act* that is subject to an Environmental Compliance Approval, ceases to be a significant drinking water threat, where this activity is a significant drinking water threat, as prescribed by the *Clean Water Act*, *2006*, the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to ensure that terms and conditions are incorporated that, when implemented, ensure that the activity ceases to be a significant drinking water threat.
WC-CW-2.2 *Existing Part IV–RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure an existing waste disposal site within the meaning of Part V of the *Environmental Protection Act* which does not require an Environmental Compliance Approval, ceases to be a significant drinking water threat, where this activity is a significant drinking water threat, as prescribed by the *Clean Water Act*, *2006,* this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required.
WC-MC-2.3. *Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; WHPA-B-v.8; WHPA-C-v.8; IPZ-1-v.10*	To ensure the establishment, operation or maintenance of a new waste disposal site within the meaning of Part V of the *Environmental Protection Act* that is subject to an Environmental Compliance Approval, never becomes a significant drinking water threat, where this activity would be a significant drinking water threat, as prescribed by the *Clean Water Act*, *2006,* the Ministry of the Environment, Conservation and Parks shall prohibit these activities within the Environmental Compliance Approvals process.
WC-CW-2.4. *Future Part IV-RMP WHPA-A-v.10 WHPA-B-v.10; IPZ-1-v.10;*	To ensure the establishment, operation or maintenance of a new waste disposal site within the meaning of Part V of the Environmental Protection Act which does not require an Environmental Compliance Approval never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat this activity shall be designated for the purpose of Section 58 of the Clean Water Act, 2006 and a Risk Management Plan shall be required.
2. Establishment, Operation or Maintenance of a System That Collects, Stores, Transmits, Treats or Disposes of Sewage	
Sewage System or Sewage Works – Onsite Sewage Systems and Onsite Sewage System Holding Tank	
WC-CW-3.1 *Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT)*	To ensure existing or new onsite sewage systems and onsite holding tanks with a design flow of less than or equal to 10,000 Litres per day and subject to approval under the *Ontario Building Code Act* or the *Ontario Water Resources Act* within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ-1 ~~One~~ or Nitrate ICA, cease to be or never become a significant drinking water threat the municipality shall implement an on-site sewage system maintenance inspection program. Inspections shall be prioritized based on the proximity to the drinking water supply.
WC-CW-3.2 *Existing/Future*	To ensure existing or new onsite sewage systems and onsite holding tanks with a design flow of less than or equal to 10,000 Litres per day and subject to approval under the *Ontario Building Code Act* or the *Ontario Water Resources Act* within a

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
Education & Outreach WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT~~/SOD/CHL~~)	WHPA-A or B with a vulnerability score equal to ten (10), IPZ-1 ~~One~~, or Nitrate~~, Sodium or Chloride~~ ICA cease to be or never become a significant drinking water threat, the municipality shall develop and implement an education initiative about small onsite sewage systems and holding tanks. The education program shall encourage the use of beneficial management practices that reduce the impact on groundwater.
WC-MC-3.3 *Existing/Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-v.10; ICA(NIT/SOD/CHL)*	To ensure existing or future onsite sewage systems with a design flow of greater than 10,000 Litres per day and regulated under the *Ontario Water Resources Act* cease to be or never become a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to incorporate terms and conditions that, when implemented, ensure that the activity ceases to be or never becomes a significant drinking water threat. . The terms and conditions may include, as appropriate, requirements for the proponent/applicant to undertake mandatory monitoring of groundwater impacts, contingencies in the event that drinking water quality is adversely affected, regular and ongoing compliance monitoring, mandatory system inspections at least every five (5) years, and upgrading of these onsite sewage systems to current standards, if necessary. In addition, the terms and conditions may include the proponent/applicant to provide annual reporting to the Source Protection Authority and Municipality of any monitoring and inspection programs required and their results.
Sewage System or Sewage Works – Sewage Works Storage - Treatment or Holding Tanks Sewage System or Sewage Works - Sewage Treatment Plant Effluent Discharges (Includes Lagoons) Sewage System or Sewage Works – Sewage Treatment Plant By-Pass Discharge to Surface Water	
WC-MC-3.4 *Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; WHPA-B-v.8; WHPA-C-v.8; IPZ-1_v.10; ICA(NIT/TCE/CHL)*	To ensure the establishment of new sewage treatment plants with effluent and/or bypass discharge or new sewage treatment plants with sewage storage tanks never become~~s~~ a significant drinking water threat, where these activities would be a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall prohibit these activities within the Environmental Compliance Approvals process. This policy does not apply to the expansion, modification, optimization, re-rating, operation, maintenance or replacement of existing sewage treatment plants.
Sewage System or Sewage Works – Sanitary Sewers and Related Pipes	
WC-MC-3.5 *Existing/ Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1_v.10; ICA(NIT)*	For any ~~To ensure~~ existing or new sanitary sewers and related pipes, industrial effluent discharge and /~~–~~or existing sewage treatment plants~~cease to be or never become a significant drinking water threat~~, where these activities are, or would be, a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to incorporate terms and conditions that, when implemented, will ensure that these activities cease to be or never become a significant drinking water threat. The terms and conditions may include requirements for regular maintenance, monitoring and inspections conducted by the proponent.
Sewage System or Sewage Works – Industrial Effluent Discharge	

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Sewage System or Sewage Works – Combined Sewer Discharge from a Stormwater Outlet to Surface Water	
WC-MC-3.6 *Future Prescribed Instr. IPZ-1-v.10*	To ensure new industrial effluent discharge to surface water or combined sewer discharge from a stormwater outlet within an IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, the Ministry of the Environment, Conservation and Parks shall prohibit this activity within the Environmental Compliance Approvals process.
Sewage System or Sewage Works – Discharge from a Stormwater Management Facility	
WC-MC-3.7 *Existing/Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA(NIT/CHL)*	For any ~~To ensure an~~ existing or new stormwater management facility that discharges stormwater ~~ceases to be or never becomes a significant drinking water threat~~, where this activity is, or would be, a significant drinking water threat, as prescribed by the *Clean Water Act*, *2006,* the Ministry of the Environment, Conservation and Parks shall review and, if necessary, amend Environmental Compliance Approvals to incorporate terms and conditions ~~(for example, regular maintenance)~~ that, when implemented, will ensure that this activity ceases to be or never becomes a significant drinking water threat. The terms and conditions may include requirements for regular maintenance, monitoring and inspections conducted by the proponent.
WC-CW-3.8 *Existing/Future Part IV – RMP ICA (CHL)*	To ensure any existing or new stormwater management facility ceases to be or never becomes a significant drinking water, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006*, and a Risk Management Plan shall be required where the following applies: a) where the activity is or would be a significant drinking water threat b) the stormwater management facility is located within a Chloride Issues Contributing Area; and c) the stormwater management facility does not require an Environmental Compliance Approval.
3. The Application of Agricultural Source Material to Land	
WC-CW-4.1 *Existing/Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure the existing or future application of agricultural source material to land within a WHPA-A or IPZ- ~~One (~~1~~)~~, ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-4.2 *Existing/Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure the existing or future application of agricultural source material to land ~~not phased-in under the *Nutrient Management Act*~~ within a WHPA-B with a vulnerability score equal to ten (10), or a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required. The requirements of the Risk Management Plan will generally be based on the requirements of a Nutrient Management Plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.

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WC-MC-4.3 *Existing/Future Prescribed Instr. WHPA-B-v.10*	To ensure the existing or future application of agricultural source material to land with an existing, or requiring, a Nutrient Management Plan or Strategy in accordance with the *Nutrient Management Act* within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs shall review and, if necessary, amend the Nutrient Management Plan/Strategy to ensure that such Plan/Strategy incorporates measures and/or terms and conditions deemed necessary to ensure this activity ceases to be or never becomes a significant drinking water threat.
3. The Application of Agricultural Source Material **4. The Storage of Agricultural Source Material**	
WC-CW-4.4 *Existing/Future Education & Outreach ICA (NIT) (Outside WHPA-A & WHPA B-v.10)*	To ensure the existing or future application and storage of agricultural source material within a Nitrate ICA outside of a WHPA-A or B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, the municipality shall develop and implement an education initiative about the application and storage of agricultural source material. The education program shall encourage the use of beneficial management practices that reduce the impact on groundwater.
4. The Storage of Agricultural Source Material	
WC-CW-5.1 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new storage of agricultural source material on lands within a WHPA-A or IPZ-1 ~~One~~ never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-5.2 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b) Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure: a. any existing storage of agricultural source material on lands ~~not phased-in under the *Nutrient Management Act*~~ where this activity is a significant drinking water threat, within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ- ~~One (~~1~~)~~ or a Nitrate ICA; or b. the future storage of agricultural source material on lands ~~not phased-in under the *Nutrient Management Act*~~ within a WHPA-B with a vulnerability score equal to ten (10) or a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required. The requirements of the Risk Management Plan will generally be based on the requirements of a nutrient management plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.
WC-MC-5.3 *a) Existing Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b) Future Prescribed Instr. WHPA-B-v.10*	To ensure: a. any existing storage of agricultural source material on lands phased-in under the *Nutrient Management Act* where this activity is a significant drinking water threat, as prescribed by the *Clean Water Act, 2006*; within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ- ~~One (~~1~~)~~; or b. the future storage of agricultural source material on lands phased-in under the *Nutrient Management Act* within a Wellhead Protection Area WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs shall review and, if necessary, amend the Nutrient

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	Management Plan/Strategy to ensure that such Plan/Strategy incorporates measures and/or terms and conditions deemed necessary to ensure that the activity ceases to be or never becomes a significant drinking water threat.
6. The Application of Non-Agricultural Source Material (NASM)	
WC-MC-6.1 *Existing/Future Prescribed Instr. WHPA-A-v.10; IPZ-1-v.10* *In the Moorefield, Drayton, Fergus and Guelph well systems this policy only applies to the application of NASM from a meat plant or sewage works*	To ensure the existing and or future application of non-agricultural source material to lands within a WHPA-A or IPZ- ~~One (~~1~~)~~, ceases to be or never becomes a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs or the Ministry of Environment, Conservation and Parks as applicable, shall revoke or not approve, any Non-Agricultural Source Material (NASM) Plan in accordance with the *Nutrient Management Act*, or any Environmental Compliance Approval in accordance with the *Environmental Protection Act,* that permits, or would permit, the application of non-agricultural source material within vulnerable areas where it is, or would be, a significant drinking water threat.
WC-MC-6.2 *Existing Prescribed Instr. WHPA-B-v.10 ICA(NIT) (Outside WHPA-A-v.10)* *In the Moorefield, Drayton, Fergus and Guelph well systems this policy only applies to the application of NASM from a meat plant or sewage works*	To ensure the existing application of non-agricultural source material to lands within a WHPA-B with a vulnerability score equal to ten (10) and/or a Nitrate ICA outside of a WHPA-A, ceases to be a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs, or Ministry of the Environment, Conservation and Parks as applicable, shall review and, if necessary, amend the required Non-Agricultural Source Material (NASM) Plan in accordance with the *Nutrient Management Act*, or an Environmental Compliance Approval in accordance with the *Environmental Protection Act*, to ensure that such Plans/Compliance Approvals incorporate measures and/or terms and conditions deemed necessary to ensure this activity ceases to be a significant drinking water threat.
7. The Handling and Storage of Non-Agricultural Source Material (NASM)	
WC-MC-7.1 *a) Existing Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; ICA(NIT); IPZ-1-v.10* *b) Future Prescribed Instr. WHPA-B-v.10; ICA(NIT) (Outside WHPA-A-v.10)*	To ensure: a. any existing handling and storage of non-agricultural source material on lands where this activity is a significant drinking water threat, as prescribed by the *Clean Water Act, 2006;* or b. any new storage of non-agricultural source material on lands within a WHPA-B with a vulnerability score equal to ten (10) or a Nitrate ICA but outside of a WHPA-A, cease to be or never become a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs, or Ministry of the Environment, Conservation and Parks as applicable, shall review and, if necessary, amend the required Non-Agricultural Source Material (NASM) Plan in accordance with the *Nutrient Management Act*, or an Environmental Compliance Approval in accordance with the *Environmental Protection Act*, to ensure that such Plans/Compliance Approvals incorporate measures and/or terms and conditions deemed necessary to ensure the activity ceases to be or never becomes a significant drinking water threat.
WC-CW-7.2 *Future Part IV-Prohibit*	To ensure any new handling and storage of non-agricultural source material within a WHPA-A or IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, this

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WHPA-A-v.10; IPZ-1-v.10	activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
8. The Application of Commercial Fertilizer to Land	
WC-CW-8.1 *Existing/Future Part IV-Prohibit. WHPA-A-v.10; IPZ-1-v.10* ~~*Currently does not apply to the application of commercial fertilizer in the Moorefield, Drayton, Fergus, Rockwood, Hamilton Drive or Guelph well systems due to managed land and livestock density calculations*~~	To ensure the existing or future application of commercial fertilizer to agricultural and non-agricultural land (excluding an individual for personal or family use) within a WHPA-A or IPZ~~- One (1)~~, ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-MC-8.2. *Existing/Future Prescribed Instr. WHPA-B-v.10;* ~~*Currently does not apply to the application of commercial fertilizer in the Arthur, Moorefield, Drayton, Elora, Fergus, or Guelph well systems due to managed land and livestock density calculations*~~	To ensure the existing or future application of commercial fertilizer to land with an existing or requiring a Nutrient Management Plan or Strategy in accordance with the *Nutrient Management Act* within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs shall review and, if necessary, amend the Nutrient Management Plan/Strategy to ensure that such Plan/Strategy incorporates measures and/or terms and conditions deemed necessary to ensure that this activity ceases to be or never becomes a significant drinking water threat.
WC-CW-8.3. *Existing/Future Part IV-RMP WHPA-B-v.10 ICA (NIT)* ~~*Currently does not apply to the application of commercial fertilizer in the Arthur, Moorefield, Drayton, Elora, Fergus, or Guelph well systems due to managed land and livestock density calculations*~~	To ensure the existing or future application of commercial fertilizer to non-agricultural lands (excluding an individual for personal or family use) or agricultural land ~~not phased in under the *Nutrient Management Act*~~ within a WHPA-B with a vulnerability score equal to ten (10)~~,~~ or a Nitrate ICA outside of a WHPA-A ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
8. The Application of Commercial Fertilizer to Land **9. The Handling and Storage of Commercial Fertilizer**	

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WC-CW-8.4 *Existing/ Future Education & Outreach WHPA-A-v.10; WHPA-B-v.10; ICA(NIT); IPZ-1-v.10* *Currently does not apply to the application of commercial fertilizer in the Moorefield, Drayton, or Fergus well systems due to managed land and livestock density calculations*	To ensure the existing and future application or storage of commercial fertilizer ceases to be or never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, the Municipality shall develop and implement an education and outreach program targeted towards: a. An individual for personal or family use to promote timely fertilizer application and best management practices in urban settings; and b. Agricultural lands and non-agricultural lands to promote best management practices to safeguard water supplies from drinking water threats.
9. The Handling and Storage of Commercial Fertilizer	
WC-CW-9.1 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT)* *b) Future Part IV-RMP WHPA-B-v.10 ICA (NIT)*	To ensure: a. any existing handling and storage of more than 2,500 kilograms of commercial fertilizer as defined in O. Reg. 267/03 within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10), an IPZ- ~~One (1)~~, or a Nitrate ICA or b. the future handling and storage of more than 2,500 kilograms of commercial fertilizer as defined in O. Reg. 267/03 within a WHPA-B with a vulnerability score equal to ten (10) a Nitrate ICA outside of a WHPA-A, ceases to be or never becomes a significant drinking water threat, this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required.
WC-CW-9.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure the handling and storage of commercial fertilizer greater than 2,500 kilograms of commercial fertilizer as defined in O. Reg. 267/03 within a WHPA-A and IPZ- ~~One (1)~~, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
10. The Application of Pesticide to Land	
WC-CW-10.1 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure the existing or future application of pesticides within the meaning of Part I of the *Pesticide Act* on lands greater than one (1) hectare ceases to be or never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
11. The Handling and Storage of Pesticides	
WC-CW-11.1 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure: a. any existing handling and storage of pesticides within the meaning of Part I of the *Pesticide Act* where this activity is a significant drinking water threat; or b. the future handling and storage pesticides within the meaning of Part I of the *Pesticide Act* within WHPA-B with a vulnerability score equal to ten (10),

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
b) Future Part IV-RMP WHPA-B-v.10	ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-11.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new handling and storage of pesticides within the meaning of Part I of the *Pesticide Act* within a WHPA-A or IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
2. Establishment, Operation or Maintenance of a System That Collects, Stores, Transmits, Treats or Disposes of Sewage **12. The Application of Road Salt** **13. The Handling and Storage of Road Salt** **14. The Storage of Snow**	
WC-MC-12.01 *Future Land Use Planning ICA (CHL)*	This policy applies to all land uses except residential consisting of four units or fewer and only where the salt application area is equal to or greater than 200 square metres or 8 parking spaces. The County of Wellington and Municipality shall generally require such future development to be designed and maintained using best management practices in snow storage, salt storage and application and storm water management, to ensure these activities never become a significant drinking water threat. Further, the County shall provide appropriate Official Plan policies and study requirements for complete applications for new developments within the Chloride ICA. To ensure the establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage, the application, handling or storage of road salt, and the storage of snow never become a significant drinking water threat, a) the County of Wellington and Municipality shall generally require future development to be designed and maintained using best management practices addressing these activities, and b) the County shall provide appropriate Official Plan policies and study requirements for complete applications for new developments within the Chloride ICA, if the following applies: i. where the activity would be a significant drinking water threat, ii. in an area with any land use except residential consisting of four units or fewer, and iii. where the salt application area is equal to or greater than 200 square metres or 8 parking spaces
12. The Application of Road Salt **13. The Handling and Storage of Road Salt**	
WC-CW-12.02 *Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (CHL)*	To ensure the application, handling and storage of road salt never becomes or ceases to be a significant drinking water threat, where these activities are or would be significant drinking water threats, the municipality should review available training programs related to salt application and storage and ensure that adequate training opportunities are available to train municipal staff and private contractors on best management practices related to salt application and storage.

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
12. The Application of Road Salt	
WC-CW-12.1 *Existing/Future Specify Action ICA (CHL~~/SOD~~)*	Where a Chloride ~~or Sodium Issue Contributing Area~~ICA has been ~~identified as a drinking water issue~~delineated, or where salt application is or would be a significant drinking water threat~~.~~, the municipality and / or County of Wellington shall review and, if necessary, revise or issue new~~their~~ Salt Management Plans for the application of salt on roadways in all Wellhead Protection Areas. The Salt Management Plan shall include, as a minimum, measures to ensure application rate, timing and location reduce the potential for salt-related surface water run-off and groundwater infiltration and meet the objectives of Environment Canada's Code of Practice for Environmental Management of Road Salts including the salt vulnerable area mapping to include areas where significant threats can occur. Where an RMP applies to municipal salt application, the Salt Management Plan shall be incorporated into the RMP.
WC-CW-12.2 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (CHL)*	To ensure any existing or new application of road salt ceases to be or never becomes a significant drinking water, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006*, and a Risk Management Plan shall be required where the following applies: a. the activity is or would be a significant drinking water threat; b. salt is or could be applied to the property; c. the salt application area is equal to or greater than 200 square metres or 8 parking spots; and d. the property is used for any land uses except residential consisting of four units or fewer. Notwithstanding the above, a Risk Management Plan will also be required for ~~all~~any municipal properties where the activity is or would be a significant drinking water threat.
WC-CW/NB-12.3 *Existing/Future Specify Action WHPA-A-v.10; WHPA-B-v.10; ICA (CHL)*	The County, municipalities and the Ministry of Transportation should enhance road design measures for modifying, widening or expanding existing roads and / or designing / developing new roads to minimize the impact from any application of salt on roadways related to the development of new roads in the following areas: a. ~~a.~~ In WHPA- A and WHPA-B where the vulnerability is equal to ten (10); or b. ~~b~~ Where a Chloride Issue has been identified. The assessment should make recommendation for enhanced measures to protect drinking water sources to be carried through detailed design and construction of the road.
WC-NB-12.4 *Existing/Future Specify Action. WHPA-A-v.10; WHPA-B-v.10; ICA (CHL)*	For existing or future transport pathways within a Chloride ICA, the Ministry of Environment, Conservation and Parks should prioritize inspections and abatement activities related to well maintenance and abandonment pursuant to Ontario Regulation 903, *Ontario Water Resources Act, 1990*.
WC-CW-12.5	For existing or future transport pathways within a Chloride ICA, the municipality shall review whether the transport pathways increase infiltration of chloride to the

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
Existing/Future Specify Action. ICA (CHL)	groundwater and what actions can be taken by the municipality to reduce the infiltration of chloride. Actions may include, but are not limited to, incorporating terms and conditions into Risk Management Plans, maintenance or removal of transport pathways, direction to other parties regarding maintenance or removal of transport pathways, reduction of salt application within the area of the transport pathway, and advocate with Ministry of Environment, Conservation and Parks or Ministry of Transportation for actions to reduce the infiltration of chloride or other measures as required.
WC-NB-12.6 *Existing/Future Specify Action ICA (CHL)*	Where a Chloride ICA has been delineated or where road salt application is or would be a significant drinking water threat, the Ministry of Transportation should review and, if necessary, revise or issue new Salt Management Plans for the application of salt on roadways in all Wellhead Protection Areas. The Salt Management Plan should include, as a minimum, measures to ensure application rate, timing and location reduce the potential for salt-related surface water run-off and groundwater infiltration and meet the objectives of Environment Canada's Code of Practice for Environmental Management of Road Salts including the salt vulnerable area mapping to include areas where significant threats can occur.
WC-CW-12.7 *Existing/Future Education & Outreach ICA (CHL)*	To ensure any existing or new application of road salt ceases to be or never becomes a significant drinking water threat, where this activity is or would be a significant drinking water threat within a Chloride ICA~~-~~, the municipality and / or the Public Health Unit shall develop and implement an education initiative addressing the application of road salt. The education program shall encourage the implementation of best management practices that form the core of the Smart About Salt or similar accreditation program to reduce the impact of winter de-icing activities.
13. The Handling and Storage of Road Salt	
WC-CW-13.1 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b) Future Part IV-RMP WHPA-B-v.10*	To ensure: a. any existing handling and storage of road salt outside of an ICA but within WHPA-A and WHPA-B with a vulnerability score of ten (10) or IPZ-~~ One (~~1~~)~~ with a vulnerability score of ten (10); or b. any new handling and storage of road salt within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-13.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new handling and storage of road salt within a WHPA-A or IPZ~~- One (~~1~~),~~ outside of an ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-13.2.1 *Existing/Future Part IV-Prohibit WHPA-A-v.10 within ICA (CHL)*	To ensure, within a WHPA-A and within a Chloride ICA that: a. any existing or new handling and storage of road salt in any amount that is stored uncovered; or b. any new (future), handling and storage of road salt in covered storage in amounts greater than 100 kilograms,

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
	ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-13.2.2 *Existing/Future Part IV-RMP ICA (CHL) outside WHPA-A-v.10*	To ensure, within a Chloride ICA that: a) any existing or new (future) handling and storage of road salt, outside of a WHPA-A, in any amount that is stored uncovered; or b) any existing or new (future) handling and storage of road salt, outside of a WHPA-A, in covered storage in amounts greater than 100 kilograms; or c) any existing or new (future) handling and storage of road salt, for a property that requires a salt application Risk Management Plan, in uncovered or covered storage of any amount; or d) any existing or new (future) handling and storage of road salt at a municipal property, in uncovered or covered storage of any amount; ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-13.3 *Existing/Future Education & Outreach ICA (CHL~~/SOD~~) ~~v.<10~~*	To ensure any existing or new handling and storage of road salt ceases to be or never becomes a significant drinking water threat, where this activity is a significant drinking water threat within a ~~Sodium or~~ Chloride ICA, ~~where the vulnerability score is less than 10,~~ the municipality and / or the Public Health Unit shall develop and implement an education initiative about the handling and storage of road salt. The education program shall encourage the implementation of the best management practices ~~which~~ that form the core of the Smart About Salt or similar accreditation program to reduce the impact of winter de-icing activities.
14. The Storage of Snow	
WC-CW-14.1 *Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10 outside of ICA (CHL)~~;~~* *Future Part IV-RMP WHPA-B-v.10 outside of ICA (CHL)*	To ensure: a. any existing snow storage outside of a~~n~~ Chloride ICA but within WHPA-A and WHPA-B with a vulnerability score of ten (10) or IPZ~~-One (~~-1~~)~~ with a vulnerability score of ten (10);~~;~~ or b. any new snow storage outside of a~~n~~ Chloride ICA but within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-14.2 *Future Part IV-Prohibit WHPA-A-v.10; ~~WHPA-B-v.10;~~ IPZ-1-v.10 outside of ICA (CHL)*	To ensure any new snow storage within a WHPA-A or IPZ-~~One (~~1~~)~~ outside of a Chloride ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-14.3 *Existing/Future Education & Outreach*	To ensure ~~-~~existing or new snow storage within a WHPA-A or B with a vulnerability score equal to ten (10), IPZ-1 with a vulnerability score equal to ten (10), ~~IPZ One,~~ or Nitrate~~, Sodium~~ or Chloride ICA cease to be or never become a significant drinking water threat, the municipality shall develop and implement an education

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT/~~SOD~~/CHL)	initiative about snow storage. The education program shall encourage the use of best~~neficial~~ management practices that reduce the impact on groundwater.
WC-CW-14.4 *Future Part IV-Prohibit WHPA-A-v.10 within ICA (CHL)*	To ensure any new, below grade snow storage greater than 0.01 hectare in area or at or above grade snow storage greater than 1 hectare in area within a WHPA-A in a Chloride ICA never becomes a significant drinking water threat this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-14.5 *Existing/Future Part IV-RMP ICA (CHL)*	To ensure any existing or new facility for snow storage within a Chloride ICA ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required where: a. a prohibition policy does not apply;~~,~~ b. salt is or could be applied to the property;~~,~~ c. the salt application area is equal to or greater than 200 square metres or 8 parking spots; and d. the property is used for any land uses except residential consisting of four units or fewer.
15. The Handling and Storage of Fuel	
WC-CW-15.1 *Existing/Future Education & Outreach WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure the existing and future handling and storage of fuel more than 250 Litres but not more than 2500 Litres ceases to be or never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, the municipality shall develop and implement an education and outreach program for property owners with identified fuel oil tanks outlining the requirements under the fuel oil code by the Technical Standards and Safety Authority and best management practices that could be implemented.
WC-CW-15.2 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10* *b)Future Part IV-RMP WHPA-B-v.10*	To ensure: a. the existing handling and storage of liquid fuel of more than 2,500 Litres, where this activity is a significant drinking water threat; or b. any new handling and storage of liquid fuel of more than 2,500 Litres within a WHPA-B with a vulnerability score equal to ten (10), ceases to be or never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required. For significant threats that are Technical Standards and Safety Authority regulated, the Risk Management Plan may be at a minimum scoped to address matters such as a contaminant management plan and any monitoring, reporting completed by the proponent/applicant and auditing requirements provided to the Technical Standards and Safety Authority.
WC-CW-15.3 *Future Part IV-Prohibit WHPA-A-v.10;*	To ensure any new handling and storage of liquid of more than 2,500 Litres within a WHPA-A or IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
IPZ-1-v.10	Notwithstanding this prohibition, fuel handling and storage required for emergency back-up generators within these vulnerable areas may be permitted subject to a Risk Management Plan in accordance with policy WC-CW-15.2.
WC-MC-15.4 *Existing/Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure any existing or new handling and storage of fuel on properties licensed under the *Aggregate Resources Act* ceases to be or never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, a. The Ministry of Natural Resources and Forestry shall review all licenses, permits and site plans issued under the *Aggregate Resources Act* and/or related regulations, standards and policies and, if necessary, include measures that, when implemented, will manage the risk so that these activities do not become or cease to be a significant drinking water threat. b. The Ministry of Natural Resources and Forestry shall not issue new or amended licenses or permits and approve site plans under the *Aggregate Resources Act* and/or related regulations, standards and policies unless measures that, when implemented, will manage the risk so that these activities do not become or cease to be a significant drinking water threat.
16. The Handling and Storage of a Dense Non-Aqueous Phase Liquid (DNAPL)	
WC-CW-16.1 *Existing Part IV-RMP WHPA-A/B/C; IPZ-1-v.10; ICA(TCE)*	To ensure any existing handling and storage of a dense non-aqueous phase liquid greater than 25 Litres, for industrial, commercial, institutional or agricultural purposes ceases to be a significant drinking water threat, where this activity is a significant drinking water threat, this activity is designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan is required.
WC-CW-16.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new handling and storage of a dense non-aqueous phase liquid for industrial, commercial institutional or agricultural purposes within WHPA-A or IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
WC-CW-16.3 *Future Part IV-RMP WHPA-B/C; ICA(TCE)*	To ensure any new handling and storage of a dense non-aqueous phase liquid greater than 25 Litres, for industrial, commercial, institutional or agricultural purposes within a WHPA-B, C or TCE ICA, never becomes a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-16.4 *Existing/Future Education & Outreach WHPA-A/B/C; IPZ-1-v.10; ICA (TCE)*	To ensure an existing or new handling and storage of a dense non-aqueous phase liquid ceases to be or never becomes a significant drinking water threat, where this activity is, or would be, a significant drinking water threat, the municipality shall develop and implement education and outreach programs to encourage the use of alternative products where available and the proper handling/storage and disposal procedures for these products.
17. The Handling and Storage of an Organic Solvent	
WC-CW-17.1 *a) Existing Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10;*	To ensure: a. any existing handling and storage of an organic solvent where this activity is a significant drinking water threat; or b. any new handling and storage of an organic solvent within a WHPA-B with a vulnerability score equal to ten (10),

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
b) Future Part IV-RMP; WHPA-B-v.10	ceases to be or never becomes significant drinking water threat this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-17.2 *Future Part IV-Prohibit WHPA-A-v.10; IPZ-1-v.10*	To ensure any new handling and storage of organic solvents within WHPA-A or IPZ- ~~One (~~1~~)~~, never becomes a significant drinking water threat, where this activity is a significant drinking water threat, this activity shall be designated for the purpose of Section 57 of the *Clean Water Act, 2006* and shall be prohibited.
18. The Management of Runoff that Contains Chemicals Used in De-icing of Aircraft	
WC-CW-18.1 *Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure any new airports where there could be runoff containing de-icing chemicals, never become a significant drinking threat, where this activity would be a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
21. The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm Animal Yard	
WC-CW-19.1 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10*	To ensure the use of land for existing or new livestock grazing or pasturing, within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ- ~~One (~~1~~)~~, ceases to be or never becomes a significant drinking water threat, where these activities are, or would be, a significant drinking water threat, these activities shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required.
WC-CW-19.2 *Existing/Future Part IV-RMP WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10 ICA (NIT)*	To ensure a farm animal yard or an outdoor confinement area as defined in O. Reg. 267/03, for existing or new livestock operations ~~not phased-in under the *Nutrient Management Act*~~ within a WHPA-A or WHPA-B with a vulnerability score equal to ten (10) or IPZ- ~~One (~~1~~)~~ or a Nitrate ICA, cease to be or never become significant drinking water threats, where these activities are, or would be, significant drinking water threats, a. These activities shall be designated for the purpose of Section 58 of the *Clean Water Act, 2006* and a Risk Management Plan shall be required. b. The requirements of the Risk Management Plan will generally be based on the requirements of a nutrient management plan and/or strategy under the *Nutrient Management Act,* but may also include any modifications or additional requirements deemed necessary or appropriate by the Risk Management Official.
WC-MC-19.3 *Existing/Future Prescribed Instr. WHPA-A-v.10; WHPA-B-v.10; IPZ-1-v.10; ICA (NIT)*	To ensure a farm animal yard or an outdoor confinement area as defined in O. Reg. 267/03, for existing or new livestock operations with an existing or requiring a Nutrient Management Plan or Strategy in accordance with the *Nutrient Management Act,* cease to be or never become a significant drinking water threat, where these activities are, or would be, a significant drinking water threat, the Ministry of Agriculture, Food and Rural Affairs shall review and, if necessary, amend the required Nutrient Management Plan/Strategy to ensure that such Plan/Strategy incorporates measures and/or terms and conditions deemed necessary to ensure that these activities cease to be or never become a significant drinking water threat.
WC-CW-19.4 *Existing/Future*	To ensure livestock grazing or pasturing land, an outdoor confinement area or farm animal yard within a Nitrate ICA where the vulnerability score is less than 10, cease to be or never become significant drinking water threats, the municipality shall develop and implement an education initiative about these activities.

Policy Number	Policies Addressing Prescribed Drinking Water Threats within the County of Wellington
Education & Outreach ICA (NIT)v.<10	The education program shall encourage the use of beneficial management practices that reduce the impact on groundwater.
22. The Establishment and Operation of a Liquid Hydrocarbon Pipeline	
WC-NB-20.1 *Future Specify Action WHPA-A-v.10; WHPA-B-v.10* *Monitoring*	To reduce the risks to municipal drinking water sources from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the *Technical Safety and Standards Act* or that is subject to the *National Energy Board Act*, where the activity would be a significant drinking water threat,the National Energy Board, Ontario Energy Board, and the pipeline proponent are encouraged to provide the Source Protection Authority and the Municipality the location of any new proposed pipeline within the Municipality and/or Source Protection Area. The Source Protection Authority shall document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.

7.4 Appendix A: List of Policies as per Section 34 of Regulation 287/07

LIST A
Title: Significant threat policies that affect decisions under the *Planning Act* and *Condominium Act*, 1998

Opening Statement: "Clause 39 (1)(a), subsections 39 (2), (4) and (6), and sections 40 and 42 of the *Clean Water Act*, 2006 apply to the following policies:"

Content: WC-CW-1.1.1, WC-CW-1.1.2, WC-CW-1.2, WC-CW-1.3, WC-MC-1.4, WC-MC-12.01

LIST B
Title: Moderate and low threat policies that affect decisions under the *Planning Act* and *Condominium Act*, 1998

Opening Statement: "Subsection 39 (1) (b) of the *Clean Water Act*, 2006 applies to the following policies:"

Content: No Applicable Policies

LIST C
Title: Significant threat policies that affect Prescribed Instrument decisions

Opening Statement: "Subsection 39 (6), clause 39 (7) (a), section 43 and subsection 44 (1) of the *Clean Water Act*, 2006 apply to the following policies:"

Content: WC-CW-1.1.1, WC-CW-1.1.2, WC-CW-1.2, WC-MC-1.16; WC-MC-1.21, WC-MC-2.1, WC-MC-2.3, WC-MC-3.3, WC-MC-3.4, WC-MC-3.5, WC-MC-3.6, WC-MC-3.7, WC-MC-4.3, WC-MC-5.3, WC-MC-6.1, WC-MC-6.2, WC-MC-7.1, WC-MC-8.2, WC-MC-15.4, WC-MC-19.3

LIST D
Title: Moderate and low threat policies that affect Prescribed Instrument decisions

Opening Statement: "Clause 39 (7) (b) of the *Clean Water Act*, 2006 applies to the following policies:"

Content: No Applicable Policies

LIST E
Title: Significant threat policies that impose obligations on municipalities, source protection authorities and local boards

Opening Statement: "Section 38 and subsection 39 (6) of the *Clean Water Act*, 2006 applies to the following policies:"

Content: WC-CW-1.1.1, WC-CW-1.1.2, WC-CW-1.2, WC-CW-1.5, WC-CW-1.6, WC-CW-1.14, WC-CW-1.23, WC-CW-3.1, WC-CW-3.2, WC-CW-4.4, WC-CW-8.4, WC-CW-12.02, WC-CW-12.1, WC-CW/NB-12.3, WC-CW-12.5, WC-CW-12.7, WC-CW-13.3, WC-CW-14.3, WC-CW-15.1, WC-CW-16.4, WC-CW-19.4

LIST F
Title: Monitoring policies referred to in subsection 22 (2) of the *Clean Water Act*, 2006

Opening Statement: "Section 45 of the Clean Water Act, 2006 applies to the following policies:"

Content: WC-CW-1.9, WC-CW-1.10, WC-CW-1.11, WC-CW-1.12, WC-CW-1.13, WC-CW-1.14, WC-NB-20.1; WC-MC-1.16c

LIST G
Title: Policies related to section 57 of the *Clean Water Act*, 2006

Opening Statement: "The following policies relate to section 57 (prohibition) of the Clean Water Act, 2006."

Content: WC-CW-1.1.1, WC-CW-1.1.2, WC-CW-1.2; WC-CW-4.1, WC-CW-5.1, WC-CW-7.2, WC-CW-8.1, WC-CW-9.2, WC-CW-11.2, WC-CW-13.2, WC-CW-13.2.1, WC-CW-14.2, WC-CW-14.4, WC-CW-15.3, WC-CW-16.2, WC-CW-17.2

LIST H
Title: Policies related to section 58 of the *Clean Water Act*, 2006

Opening Statement: "The following policies relate to section 58 (Risk Management Plans) of the Clean Water Act, 2006."

Content: WC-CW-1.1.1**,** WC-CW-1.1.2, WC-CW-2.2, WC-CW-2.4, WC-CW-3.8, WC-CW-5.2, WC-CW-8.3, WC-CW-9.1, WC-CW-10.1, WC-CW-11.1, WC-CW-12.2 WC-CW-13.1, WC-CW-13.2.2, WC-CW-14.1, WC-CW-14.5, WC-CW-15.2, WC-CW-16.1, WC-CW-16.3, WC-CW-17.1, WC-CW-18.1, WC-CW-19.1, WC-CW-19.2

LIST I
Title: Policies related to section 59 of the *Clean Water Act*, 2006

Opening Statement: "The following policies relate to section 59 (restricted land use) of the *Clean Water Act, 2006*."

Content: WC-CW-1.1.1, WC-CW-1.1.2, WC-CW-1.3

LIST J
Title: Strategic Action policies

Opening Statement: For the purposes of section 33 of O. Reg. 287/07, the following policies are identified as strategic action policies:

Content: WC-NB-1.18, WC-NB-1.19, WC-NB-1.20, WC-NB-1.22

LIST K
Title: Significant threat policies targeted to bodies other than municipalities, local board or source protection authorities for implementation

Opening Statement: The following policies are identified as non-legally binding policies:

Content: WC-NB-1.7, WC-NB-1.8, WC-NB-1.17, WC-CW/NB-12.3, WC-NB-12.4, WC-NB-12.6, WC-NB-20.1

7.5 Appendix B: Prescribed Instruments and Policy Summary Tables

Table 1: Prescribed Instruments Which Apply To Source Protection Plan Policies In Lists C And D Above (S.34(4) Of O.Reg. 287/07)

Policy #	Legal Effect (conform with, have regard to)	Environmental Protection Act	Nutrient Management Act	Ontario Water Resources Act	Aggregate Resources Act
WC-CW-1.1.1	Comply With	X	X	X	X
WC-CW-1.1.2	Comply With	X	X	X	X
WC-CW-1.2	Comply With	X			X
WC-MC-1.16	Must Conform	X			
WC-MC-1.21	Must Conform			X	
WC-MC-2.1	Must Conform	X		X	
WC-MC-2.3	Must Conform	X		X	
WC-MC-3.3	Must Conform	X		X	
WC-MC-3.4	Must Conform	X		X	
WC-MC-3.5	Must Conform	X		X	
WC-MC-3.6	Must Conform	X		X	
WC-MC-3.7	Must Conform	X		X	
WC-MC-4.3	Must Conform		X		
WC-MC-5.3	Must Conform		X		
WC-MC-6.1	Must Conform	X	X		
WC-MC-6.2	Must Conform	X	X		
WC-MC-7.1	Must Conform	X	X		
WC-MC-8.2	Must Conform		X		
WC-MC-15.4	Must Conform				X
WC-MC-19.3	Must Conform		X		

Table 2: Policy Summary Matrix

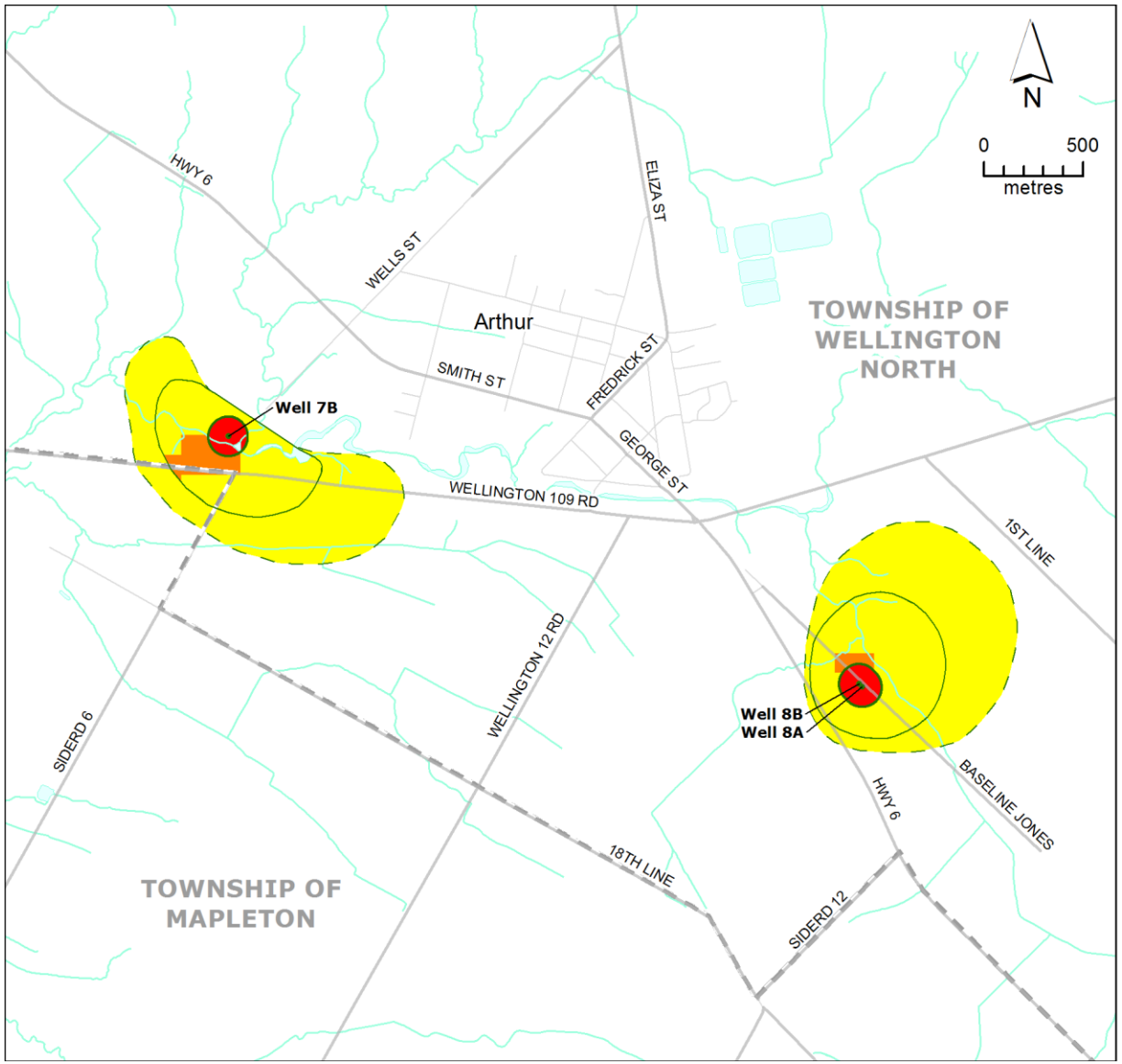
Policy #	Legal Effect (conform with, have regard to, non-binding)	Policy affects decisions under the Planning Act and Condominium Act, 1998 (Lists A and B)	Policy affects Prescribed Instrument decisions (Lists C and D)	Significant threat policies that impose obligations on municipalities, source protection authorities and local boards (List E)	Monitoring policies referred to in s.22(2) of the CWA (List F)	Part IV Policies - Significant threat policies that are designated in the plan as requiring a Risk Management Plan, are prohibited under s. 57, or to which s. 59 of the CWA applies (Lists G, H, and I)	Strategic Action Policies (List J)	Significant threat policies which designate a body other than a municipality, source protection authority or local board as responsible for implementing the policy (List K)
WC-CW-1.1.1	Comply With	X	X	X		X		
WC-CW-1.1.2	Comply With	X	X	X		X		
WC-CW-1.2	Comply With	X	X	X		X		

Policy #	Legal Effect (conform with, have regard to, non-binding)	Policy affects decisions under the Planning Act and Condominium Act, 1998 (Lists A and B)	Policy affects Prescribed Instrument decisions (Lists C and D)	Significant threat policies that impose obligations on municipalities, source protection authorities and local boards (List E)	Monitoring policies referred to in s.22(2) of the CWA (List F)	Part IV Policies - Significant threat policies that are designated in the plan as requiring a Risk Management Plan, are prohibited under s. 57, or to which s. 59 of the CWA applies (Lists G, H, and I)	Strategic Action Policies (List J)	Significant threat policies which designate a body other than a municipality, source protection authority or local board as responsible for implementing the policy (List K)
WC-CW/NB-12.3	Comply With/Non Binding			X				X
WC-CW-1.3	Comply With	X				X		
WC-MC-1.4	Must Conform	X						
WC-MC-12.01	Must Conform	X						
WC-MC-1.16	Must Conform		X		X			
WC-MC-1.21	Must Conform		X					
WC-MC-2.1	Must Conform		X					
WC-MC-2.3	Must Conform		X					
WC-MC-3.3	Must Conform		X					
WC-MC-3.4	Must Conform		X					
WC-MC-3.5	Must Conform		X					
WC-MC-3.6	Must Conform		X					
WC-MC-3.7	Must Conform		X					
WC-MC-4.3	Must Conform		X					
WC-MC-5.3	Must Conform		X					
WC-MC-6.1	Must Conform		X					
WC-MC-6.2	Must Conform		X					
WC-MC-7.1	Must Conform		X					
WC-MC-8.2	Must Conform		X					
WC-MC-12.4	Must Conform		X					
WC-MC-15.4	Must Conform		X					
WC-MC-19.3	Must Conform		X					
WC-CW-1.5	Comply With			X				
WC-CW-1.6	Comply With			X				
WC-CW-1.14	Comply With			X				
WC-CW-1.23	Comply With			X				
WC-CW-3.1	Comply With			X				
WC-CW-3.2	Comply With			X				
WC-CW-4.4	Comply With			X				
WC-CW-8.4	Comply With			X				
WC-CW-12.1	Comply With			X				
WC-CW-12.02	Comply With			X				
WC-CW-12.5	Comply With			X				
WC-CW-12.7	Comply With			X				
WC-CW-13.3	Comply With			X				

Policy #	Legal Effect (conform with, have regard to, non-binding)	Policy affects decisions under the Planning Act and Condominium Act, 1998 (Lists A and B)	Policy affects Prescribed Instrument decisions (Lists C and D)	Significant threat policies that impose obligations on municipalities, source protection authorities and local boards (List E)	Monitoring policies referred to in s.22(2) of the CWA (List F)	Part IV Policies - Significant threat policies that are designated in the plan as requiring a Risk Management Plan, are prohibited under s. 57, or to which s. 59 of the CWA applies (Lists G, H, and I)	Strategic Action Policies (List J)	Significant threat policies which designate a body other than a municipality, source protection authority or local board as responsible for implementing the policy (List K)
WC-CW-14.3	Comply With			X				
WC-CW-15.1	Comply With			X				
WC-CW-16.4	Comply With			X				
WC-CW-19.4	Comply With			X				
WC-CW-1.9	Comply With				X			
WC-CW-1.10	Comply With				X			
WC-CW-1.11	Comply With				X			
WC-CW-1.12	Comply With				X			
WC-CW-1.13	Comply With				X			
WC-CW-1.14	Comply With				X			
WC-NB-20.1	Non-binding				X			
WC-CW-2.4	Comply With					X		
WC-CW-3.8	Comply With					X		
WC-CW-4.1	Comply With					X		
WC-CW-5.1	Comply With					X		
WC-CW-7.2	Comply With					X		
WC-CW-8.1	Comply With					X		
WC-CW-9.2	Comply With					X		
WC-CW-11.2	Comply With					X		
WC-CW-12.2	Comply With					X		
WC-CW-13.2	Comply With					X		
WC-CW-13.2.1	Comply With					X		
WC-CW-13.2.2	Comply With					X		
WC-CW-14.2	Comply With					X		
WC-CW-14.4	Comply With					X		
WC-CW-14.5	Comply With					X		
WC-CW-15.3	Comply With					X		
WC-CW-16.2	Comply With					X		
WC-CW-17.2	Comply With					X		
WC-CW-2.2	Comply With					X		
WC-CW-4.2	Comply With					X		
WC-CW-5.2	Comply With					X		
WC-CW-8.3	Comply With					X		
WC-CW-9.1	Comply With					X		
WC-CW-10.1	Comply With					X		
WC-CW-11.1	Comply With					X		
WC-CW-13.1	Comply With					X		

Policy #	Legal Effect (conform with, have regard to, non-binding)	Policy affects decisions under the Planning Act and Condominium Act, 1998 (Lists A and B)	Policy affects Prescribed Instrument decisions (Lists C and D)	Significant threat policies that impose obligations on municipalities, source protection authorities and local boards (List E)	Monitoring policies referred to in s.22(2) of the CWA (List F)	Part IV Policies - Significant threat policies that are designated in the plan as requiring a Risk Management Plan, are prohibited under s. 57, or to which s. 59 of the CWA applies (Lists G, H, and I)	Strategic Action Policies (List J)	Significant threat policies which designate a body other than a municipality, source protection authority or local board as responsible for implementing the policy (List K)
WC-CW-14.1	Comply With					X		
WC-CW-15.2	Comply With					X		
WC-CW-16.1	Comply With					X		
WC-CW-16.3	Comply With					X		
WC-CW-17.1	Comply With					X		
WC-CW-18.1	Comply With					X		
WC-CW-19.1	Comply With					X		
WC-CW-19.2	Comply With					X		
WC-NB-1.18	Non- Binding						X	
WC-NB-1.19	Non- Binding						X	
WC-NB-1. 20	Non- Binding						X	
WC-NB-1.22	Non-Binding						X	
WC-NB-1.7	Non-Binding							X
WC-NB-1.8	Non-Binding							X
WC-NB-1.17	Non- Binding							X
WC-NB-12.4	Non-Binding							X
WC-NB-12.6	Non-Binding							X
WC-NB-20.1	Non-Binding							X

7.6 Schedule A: County of Wellington, Township of Wellington North, Arthur Well Supply



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
Local Threat	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within the Non-GUDI Wellhead Protection Zones shown on this map. For details refer to the text of the Source Protection Plan and the Ministry of the Environment Drinking Water Threats Tables.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of the plan for further details.

Well
Road
Minor River
Lake / Main River
Lower Tier Municipal Boundary

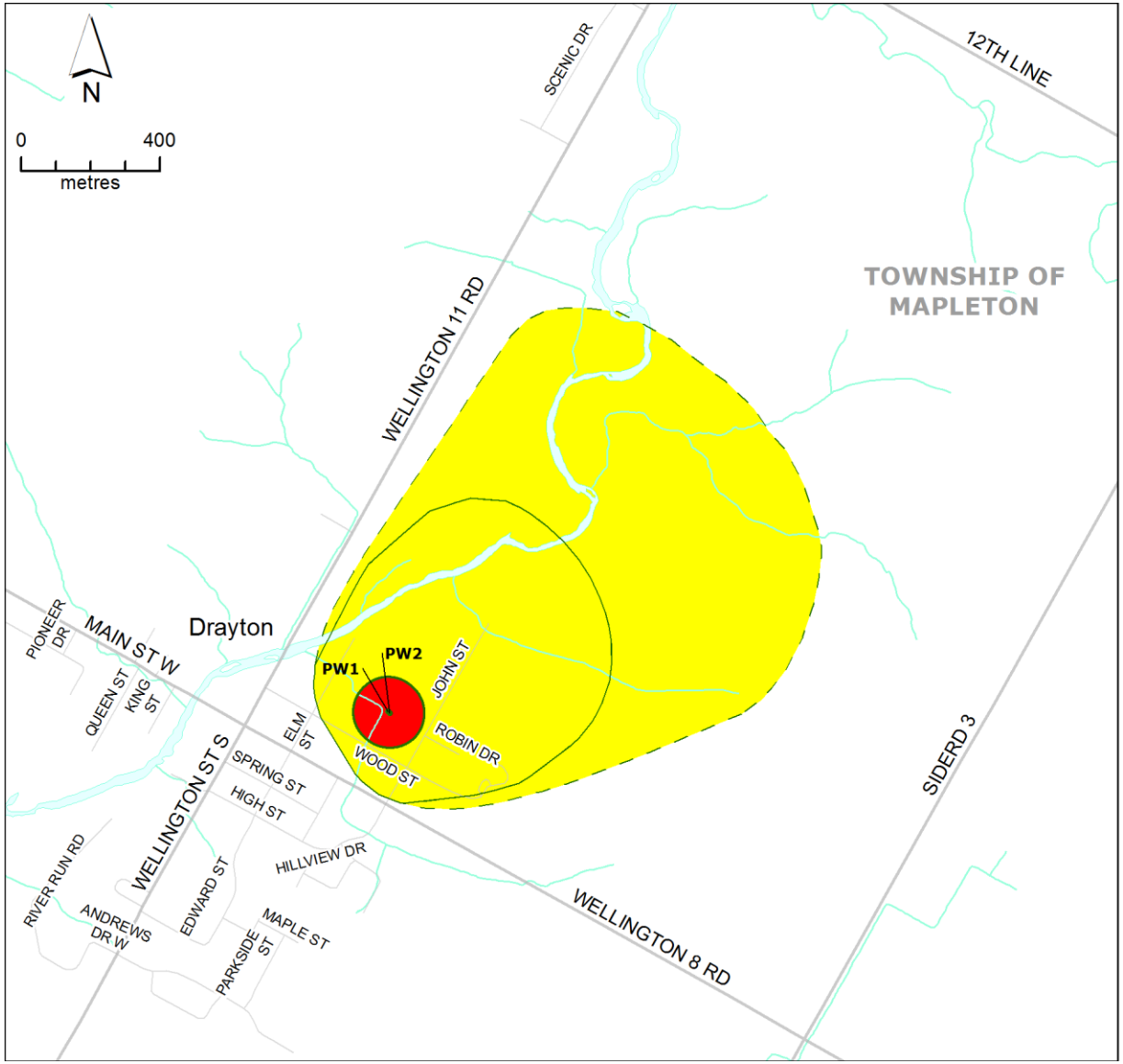
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario

Grand River Conservation Authority

1. Updated November 13, 2014
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.7 Schedule B: County of Wellington, Township of Mapleton, Drayton Well Supply



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
Local Threat	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within the Non-GUDI Wellhead Protection Zones shown on this map. For details refer to the text of the Source Protection Plan and the Ministry of the Environment Drinking Water Threats Tables.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of the plan for further details.

- Well
- Road
- Minor River
- Lake / Main River

Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated November 13, 2014
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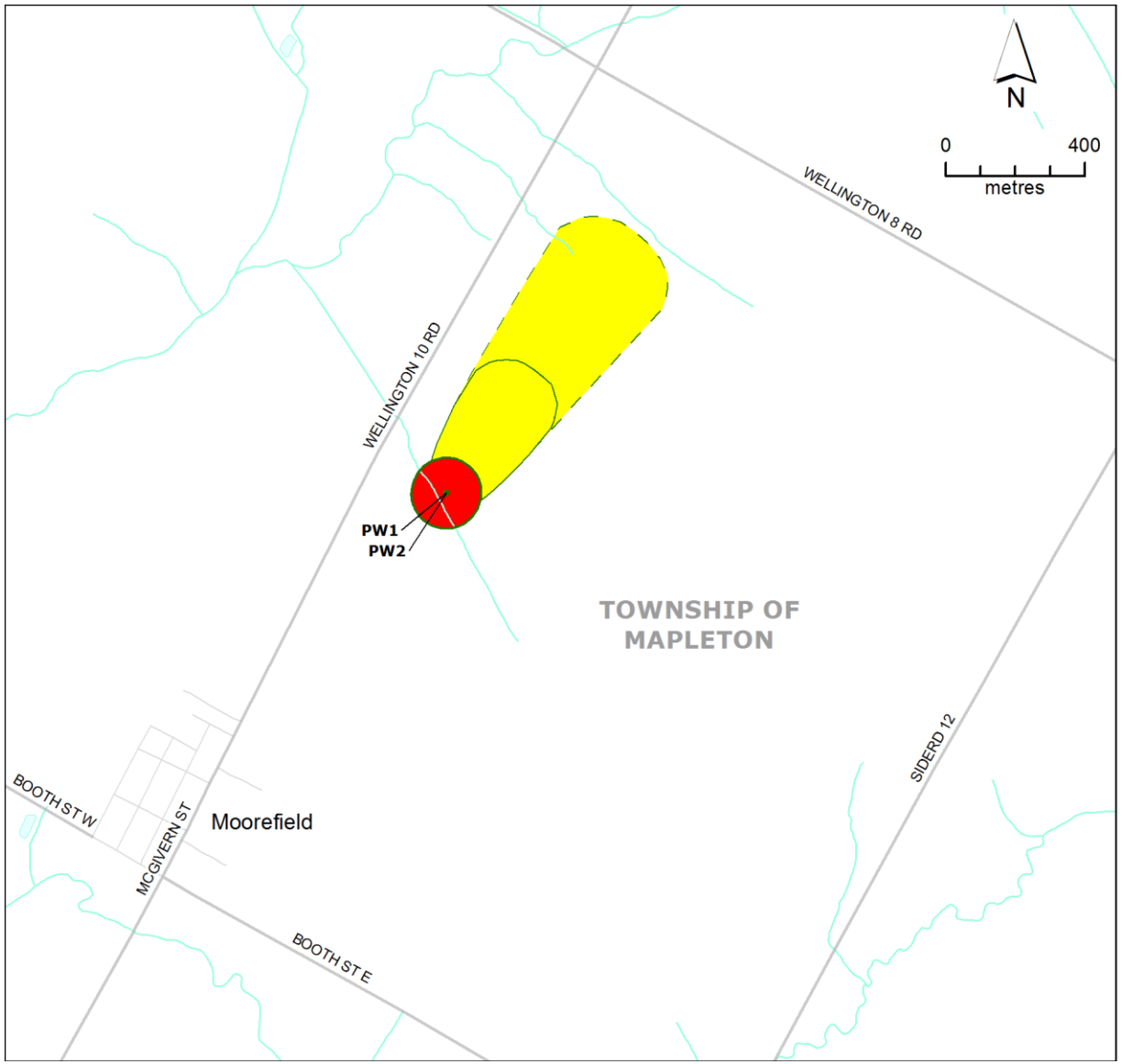
7.8 Schedule C: County of Wellington, Township of Mapleton, Moorefield Well Supply



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
Local Threat	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within the Non-GUDI Wellhead Protection Zones shown on this map. For details refer to the text of the Source Protection Plan and the Ministry of the Environment Drinking Water Threats Tables.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of the plan for further details.

Well
Road
Minor River
Lake / Main River

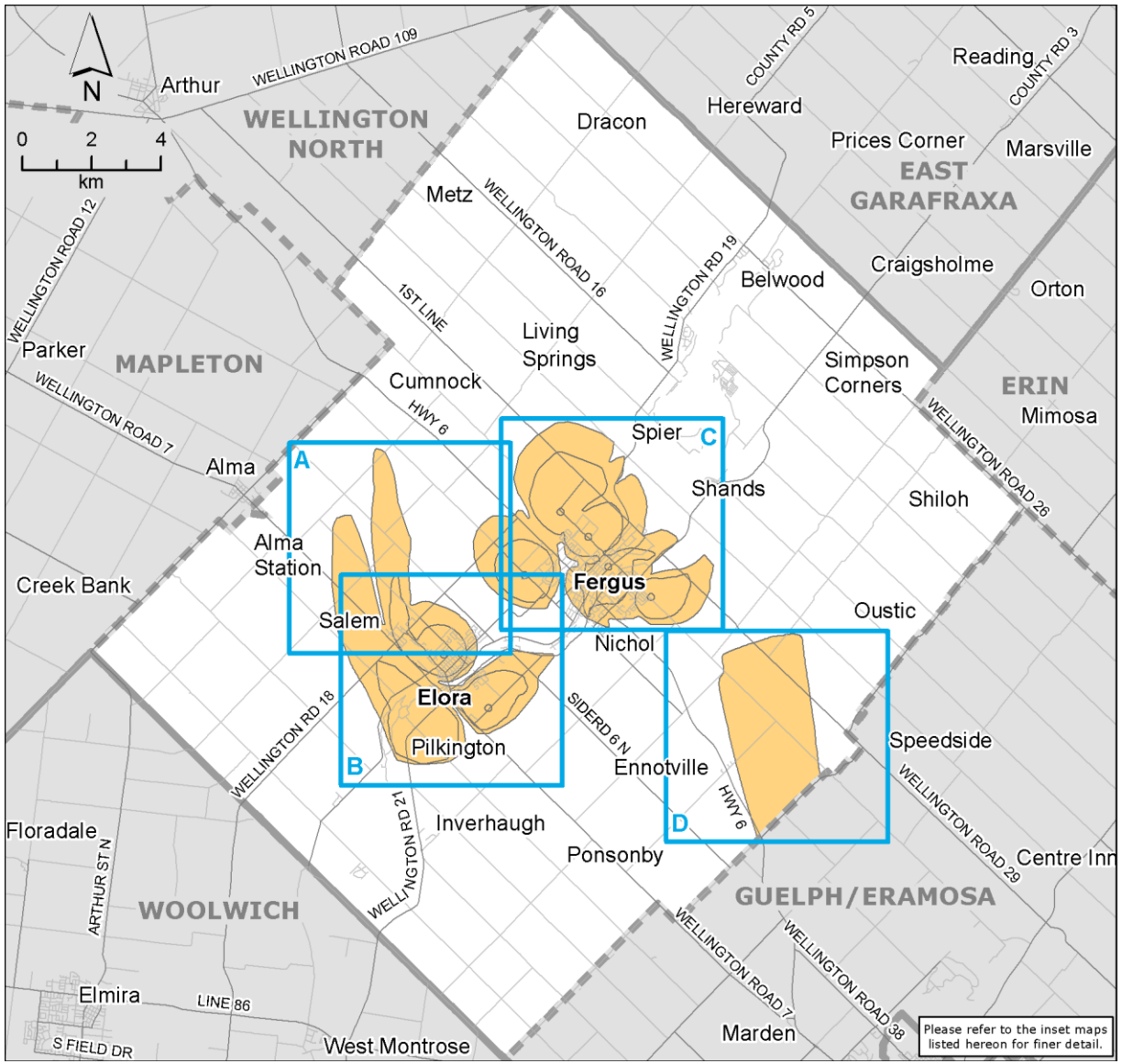
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario

Grand River Conservation Authority

1. Updated November 17, 2014
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.9 Schedule D: County of Wellington, Township of Centre Wellington, Index Map



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Index Map -
Wellhead Protection Zones

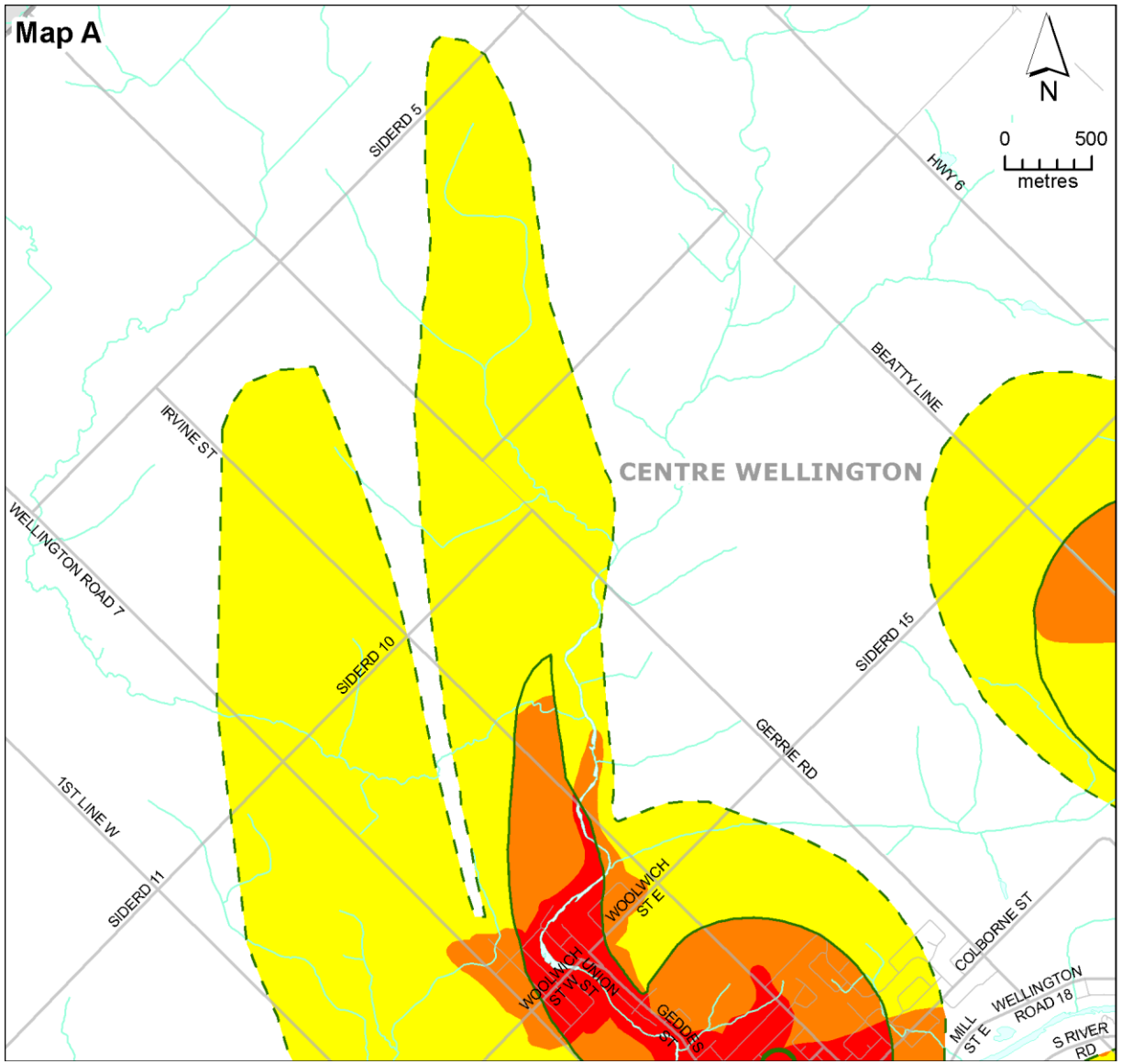
- Main Roads
- Upper / Single Tier Municipal Boundary
- Lower Tier Municipal Boundary
- Wellhead Protection Zones A, B, C

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.10 Schedule E: County of Wellington, Centre Wellington Well Supply, Map A



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

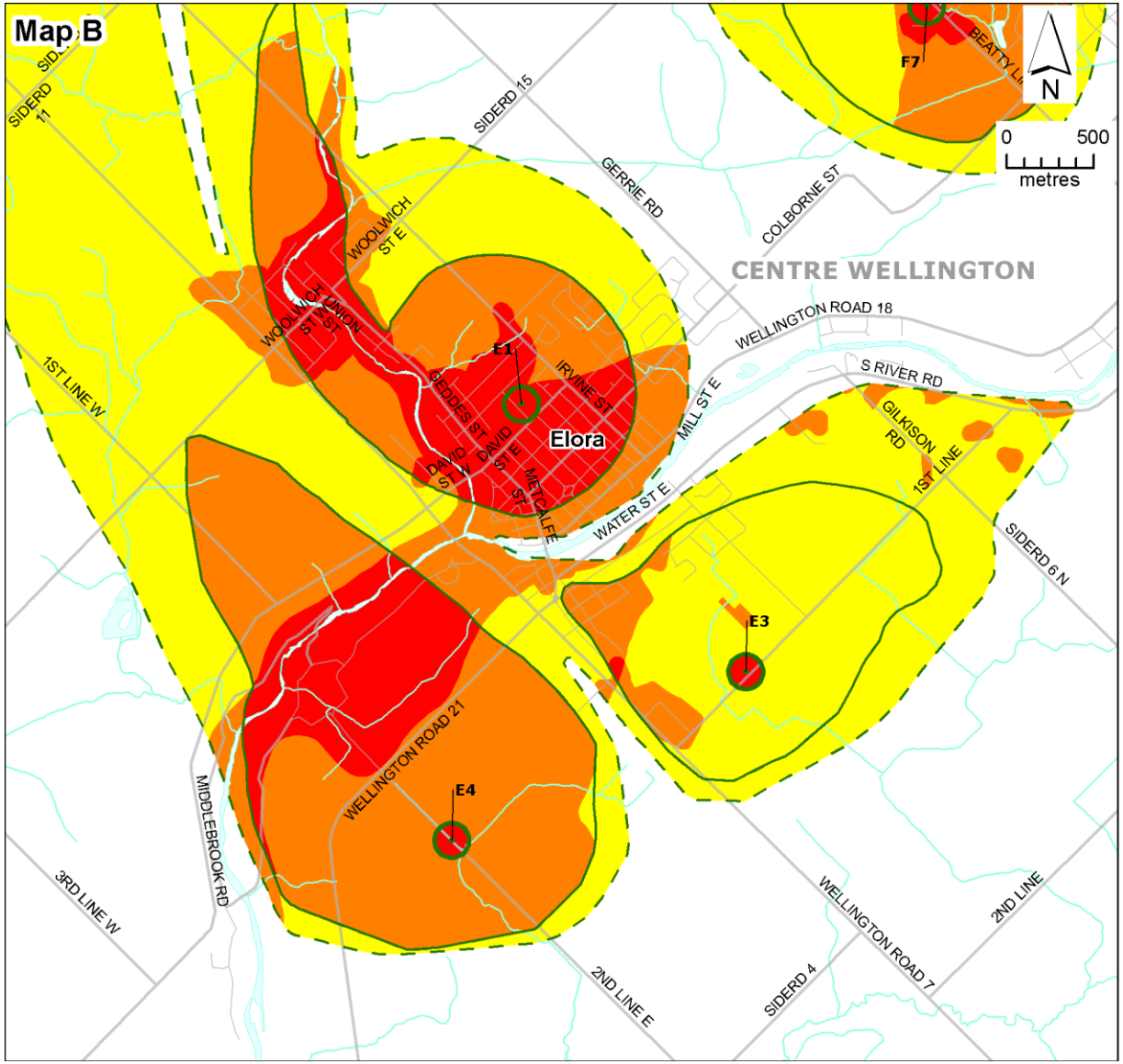
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.11 Schedule F: County of Wellington, Centre Wellington Well, Map B



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

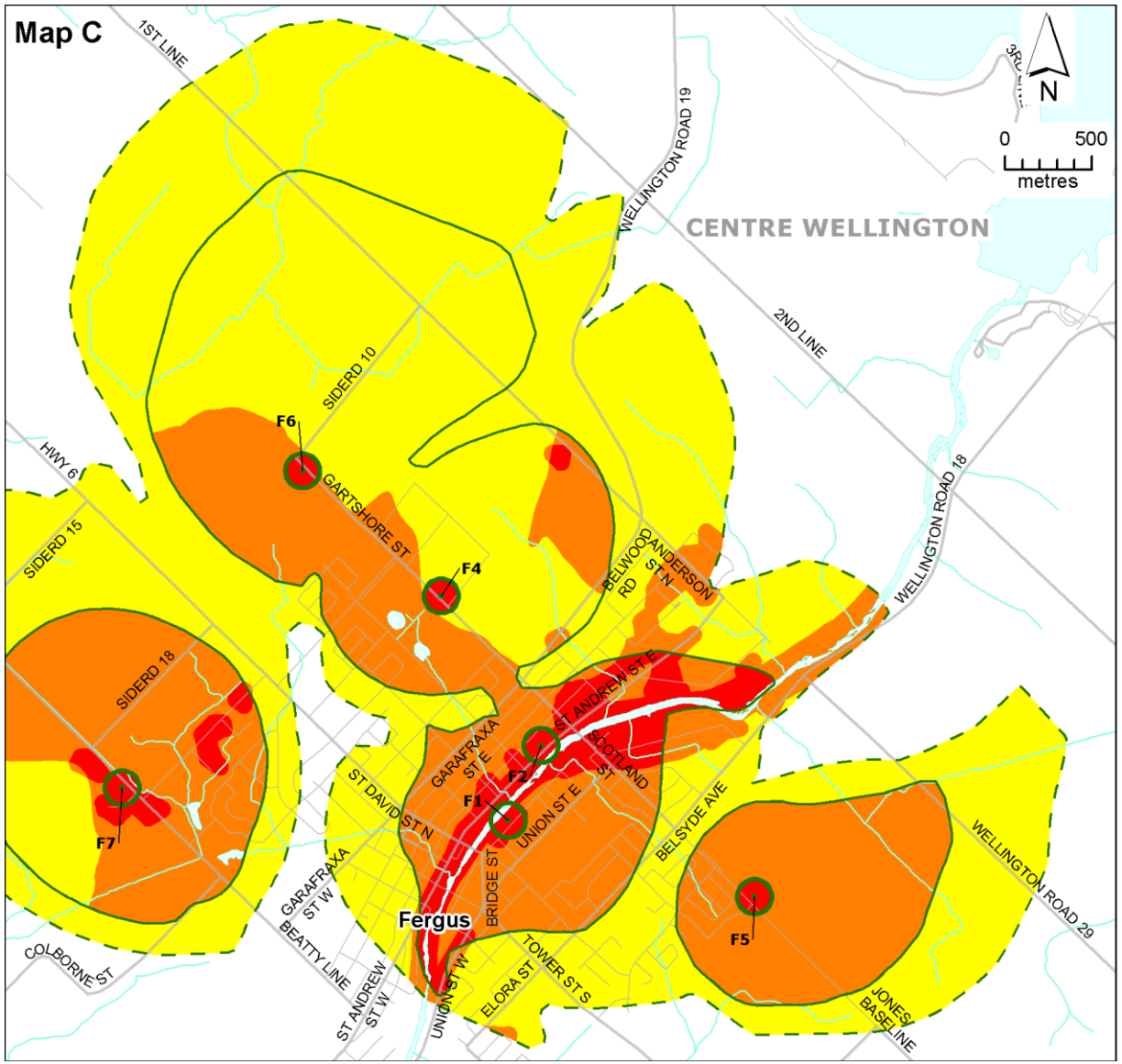
Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.12 Schedule G: County of Wellington, Centre Wellington Well Supply, Map C



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

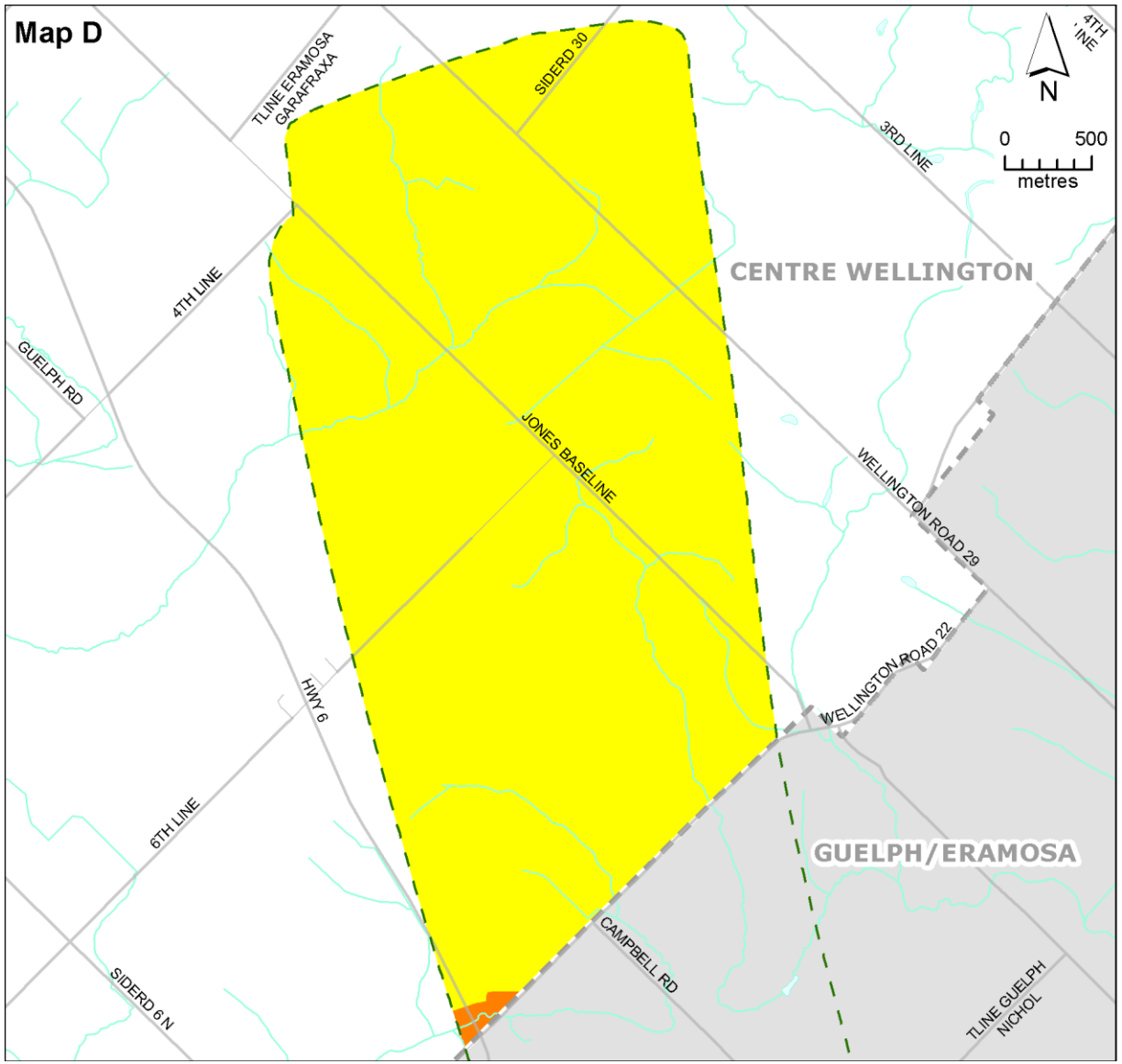
Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary

Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.13 Schedule H: County of Wellington, Centre Wellington Well Supply, Map D



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

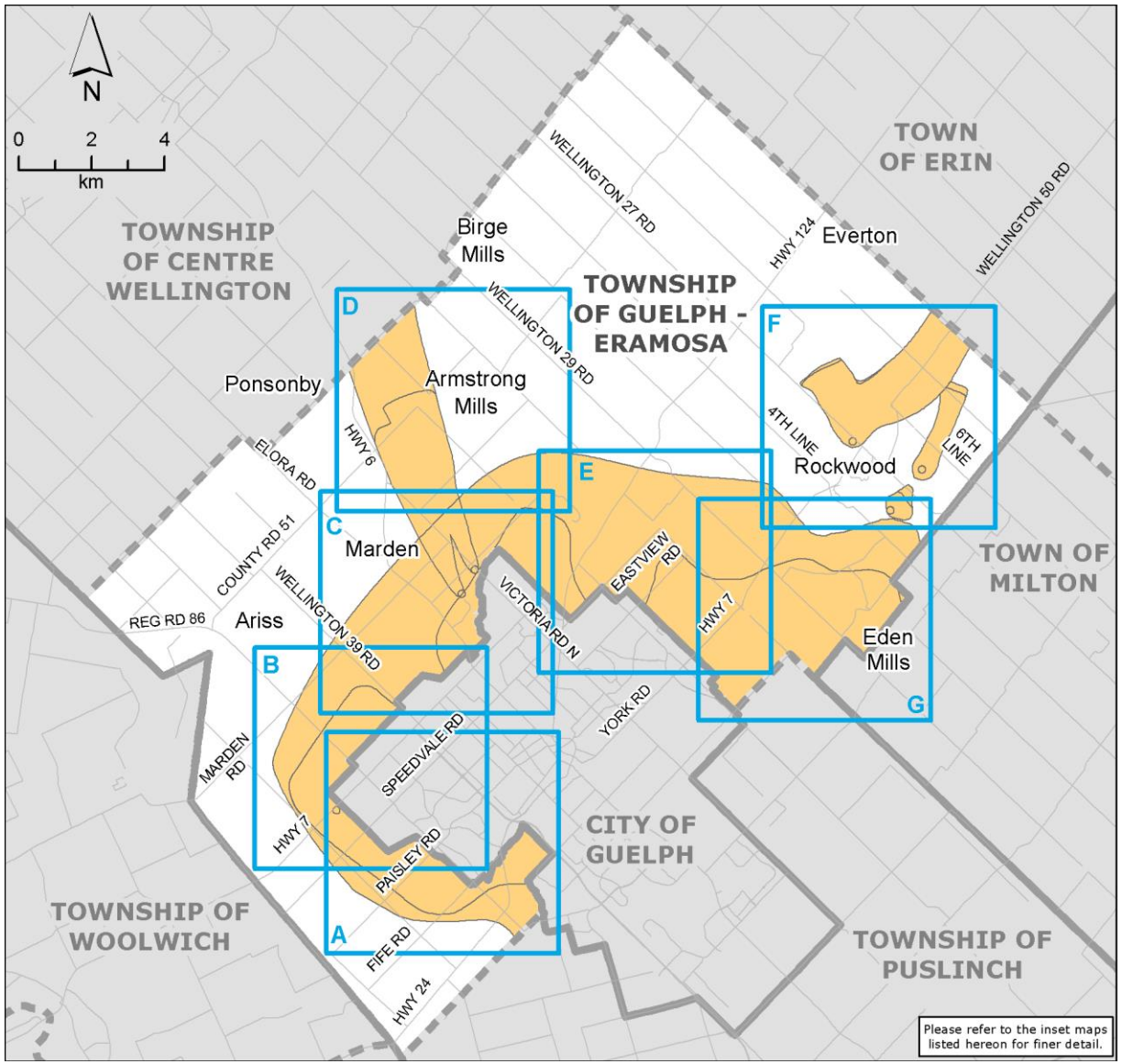
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.14 Schedule I: County of Wellington, Township of Guelph-Eramosa, Index Map



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Index Map - Wellhead Protection Zones

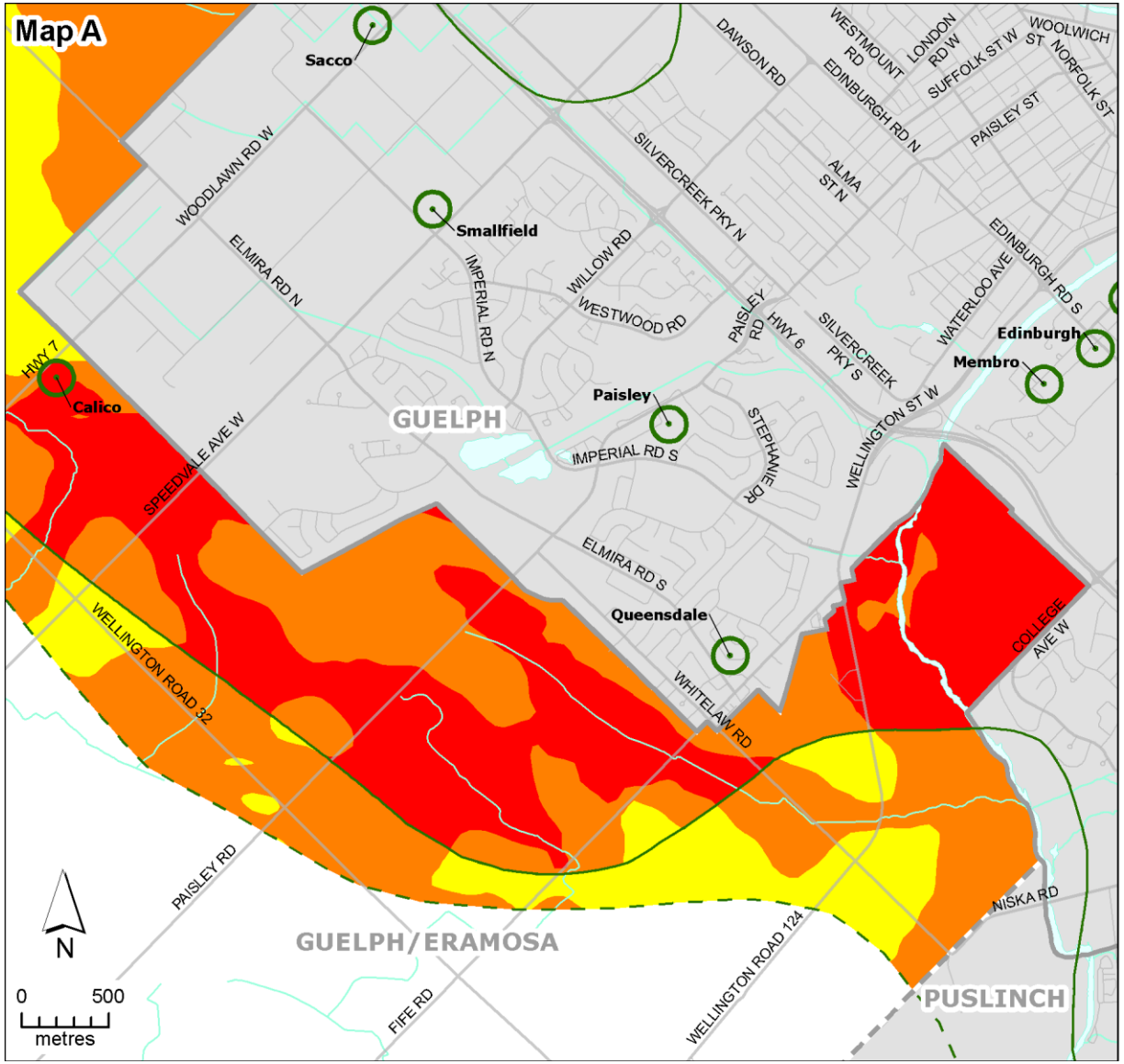
- Main Roads
- Upper / Single Tier Municipal Boundary
- Lower Tier Municipal Boundary
- Wellhead Protection Zones A, B, C

Ontario

Grand River Conservation Authority

1. Updated September 18, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.15 Schedule J: County of Wellington, Township of Guelph-Eramosa, Map A



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

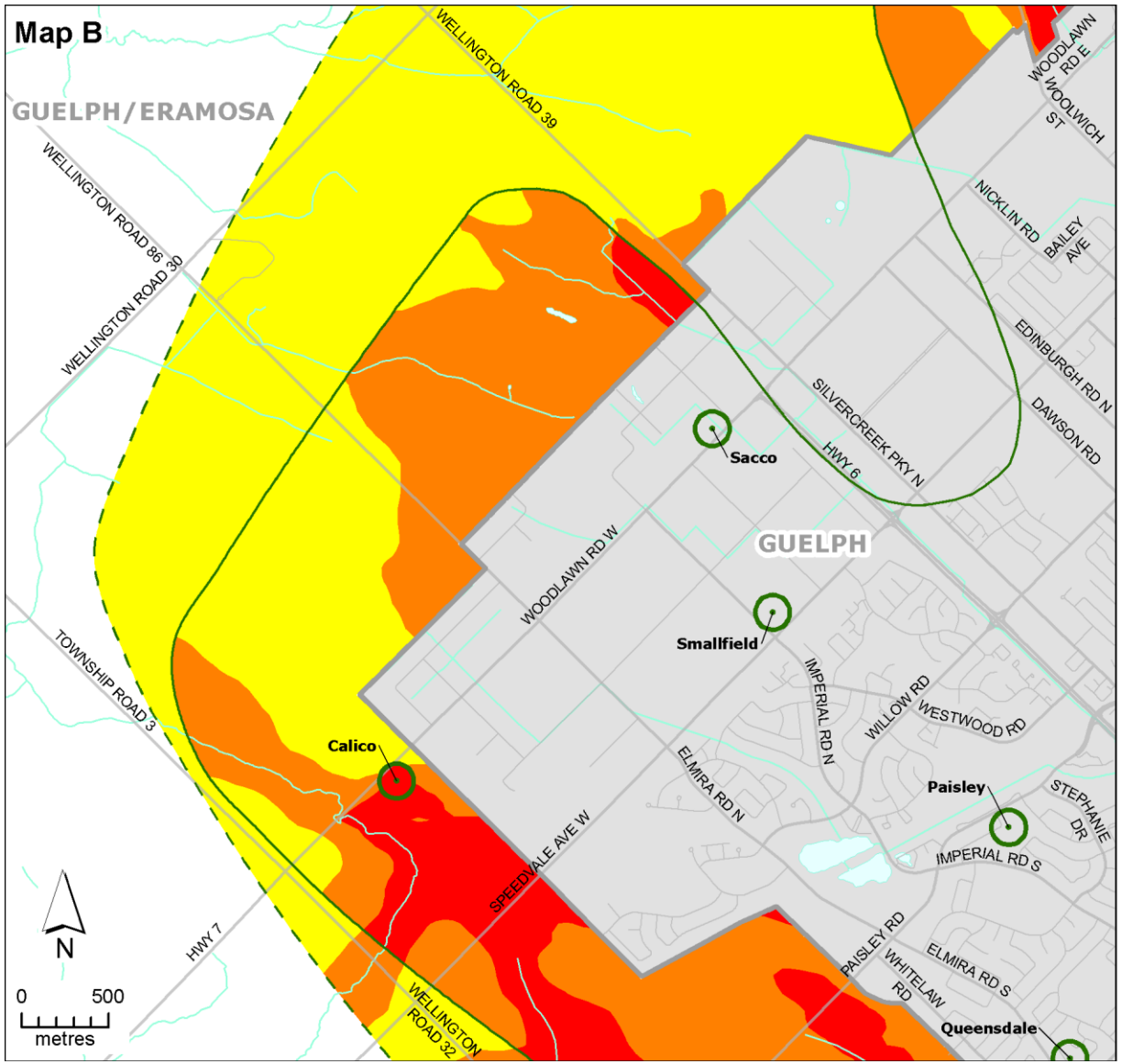
Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary

Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.16 Schedule K: County of Wellington, Township of Guelph-Eramosa, Map B



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

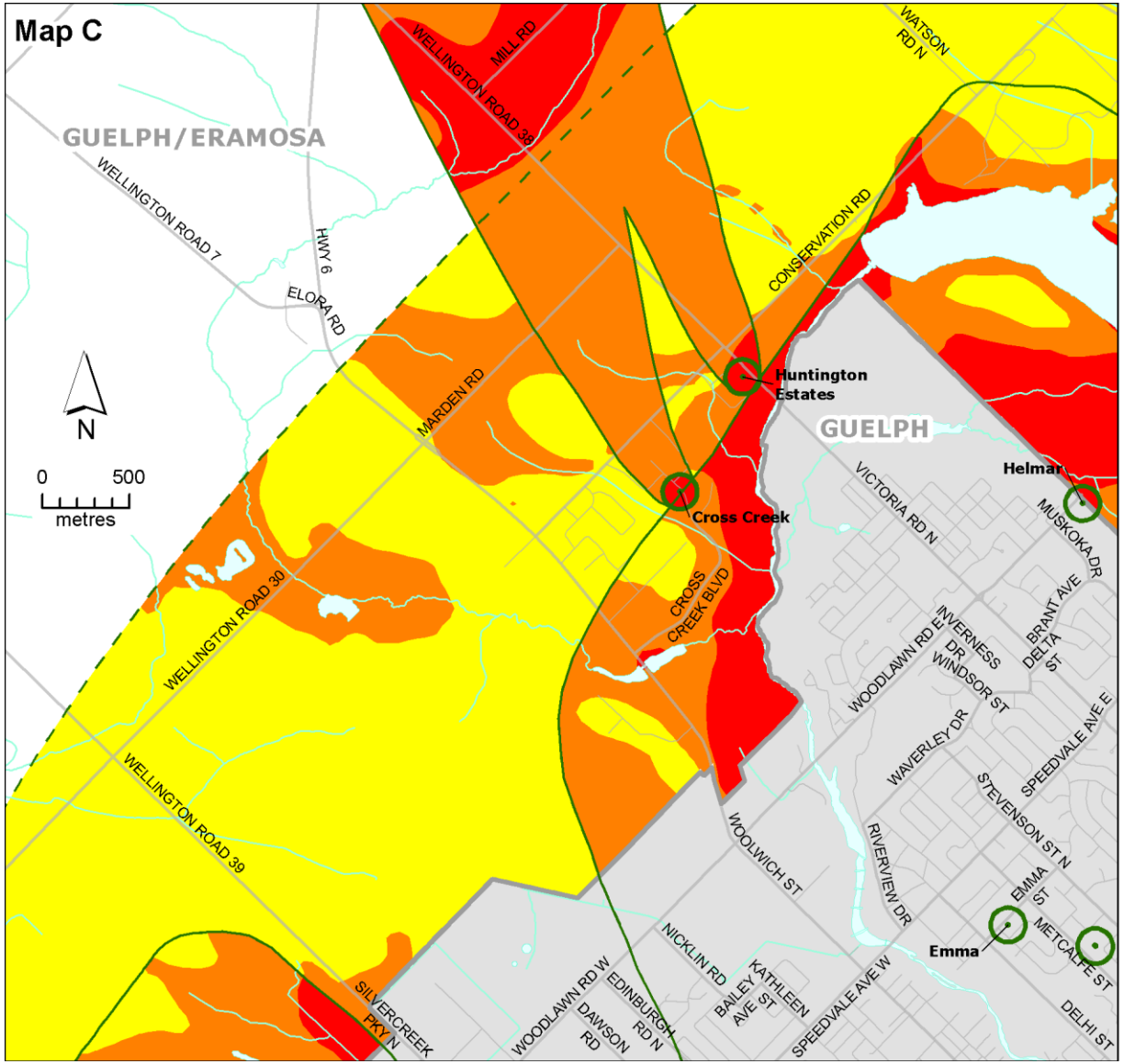
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.17 Schedule L: County of Wellington, Township of Guelph-Eramosa, Map C



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

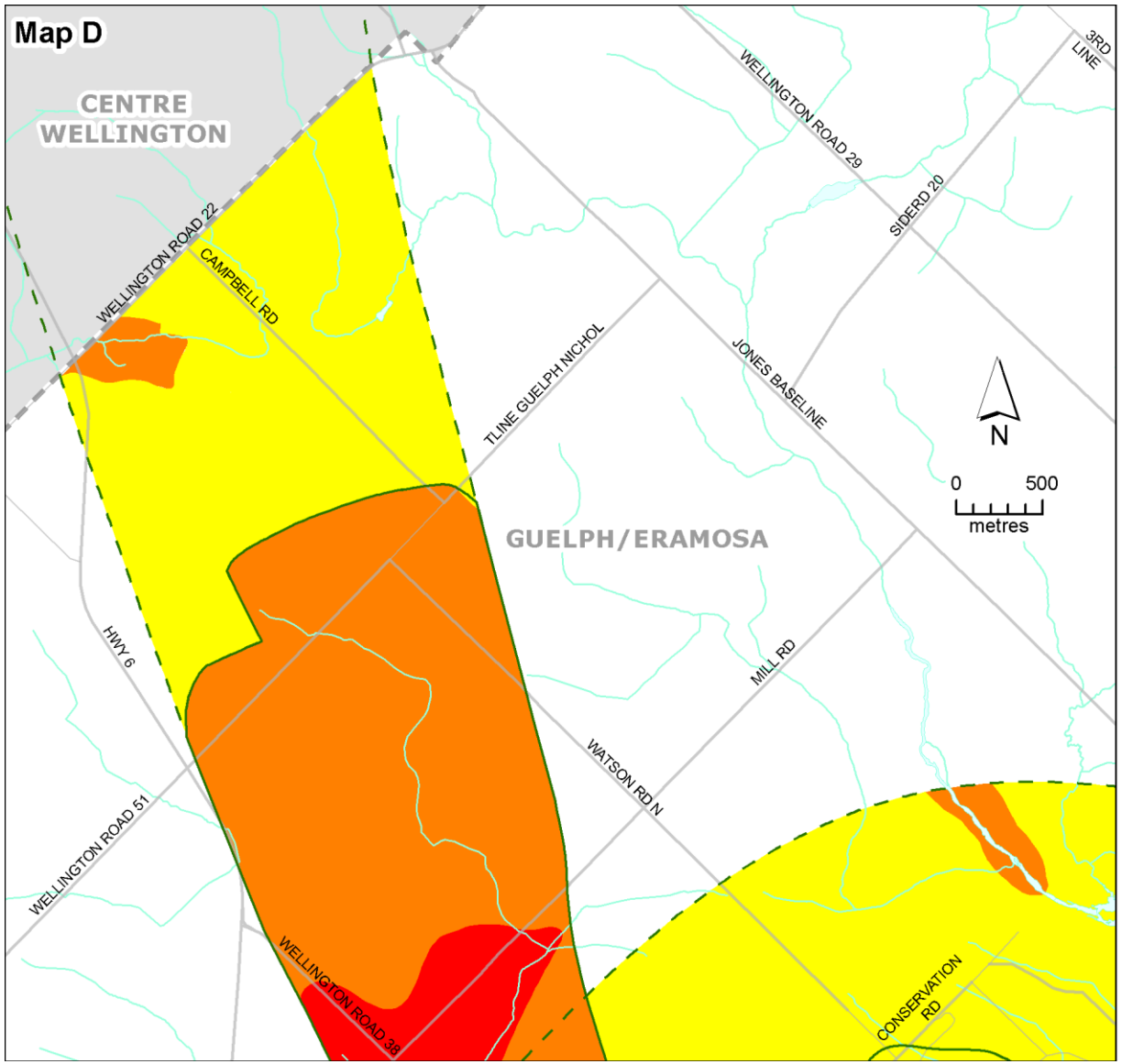
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.18 Schedule M: County of Wellington, Township of Guelph-Eramosa, Map D



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

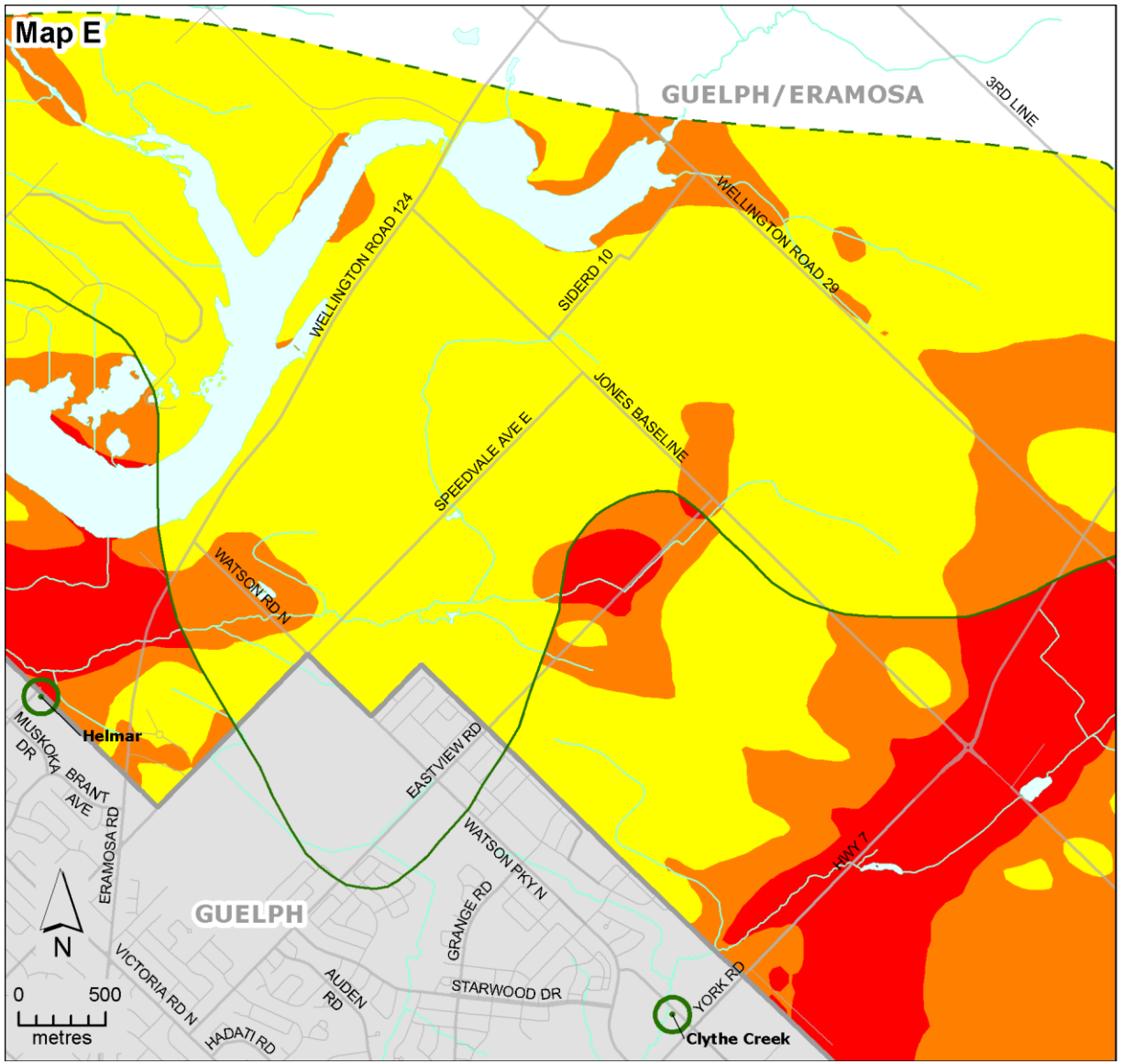
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.19 Schedule N: County of Wellington, Township of Guelph-Eramosa, Map E



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

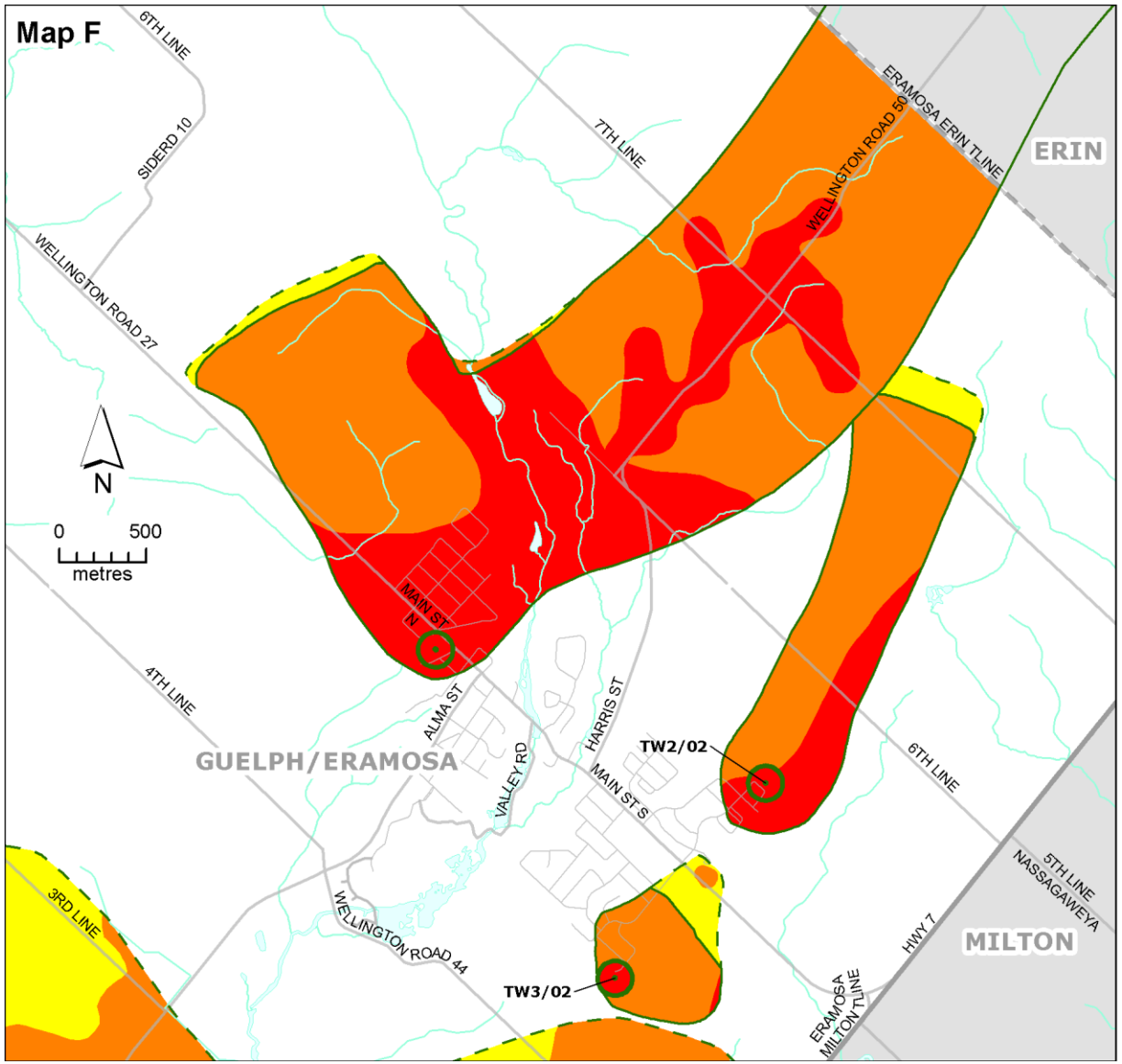
Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.20 Schedule O: County of Wellington, Township of Guelph-Eramosa, Map F



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal	■	■	
2.	Sewage Systems	■	■	
3, 4.	Agricultural Source Material	■		
6, 7.	Non-Agricultural Source Material*	■		
8, 9.	Commercial Fertilizer*	■		
10, 11.	Pesticide	■		
12, 13.	Road Salt*	■		
14.	Storage of Snow	■		
15.	Fuel	■		
16.	DNAPLs	■	■	■
17.	Organic Solvents	■		
18.	Aircraft De-icing	■		
21.	Livestock Area	■		
22.	Oil Pipelines	■		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

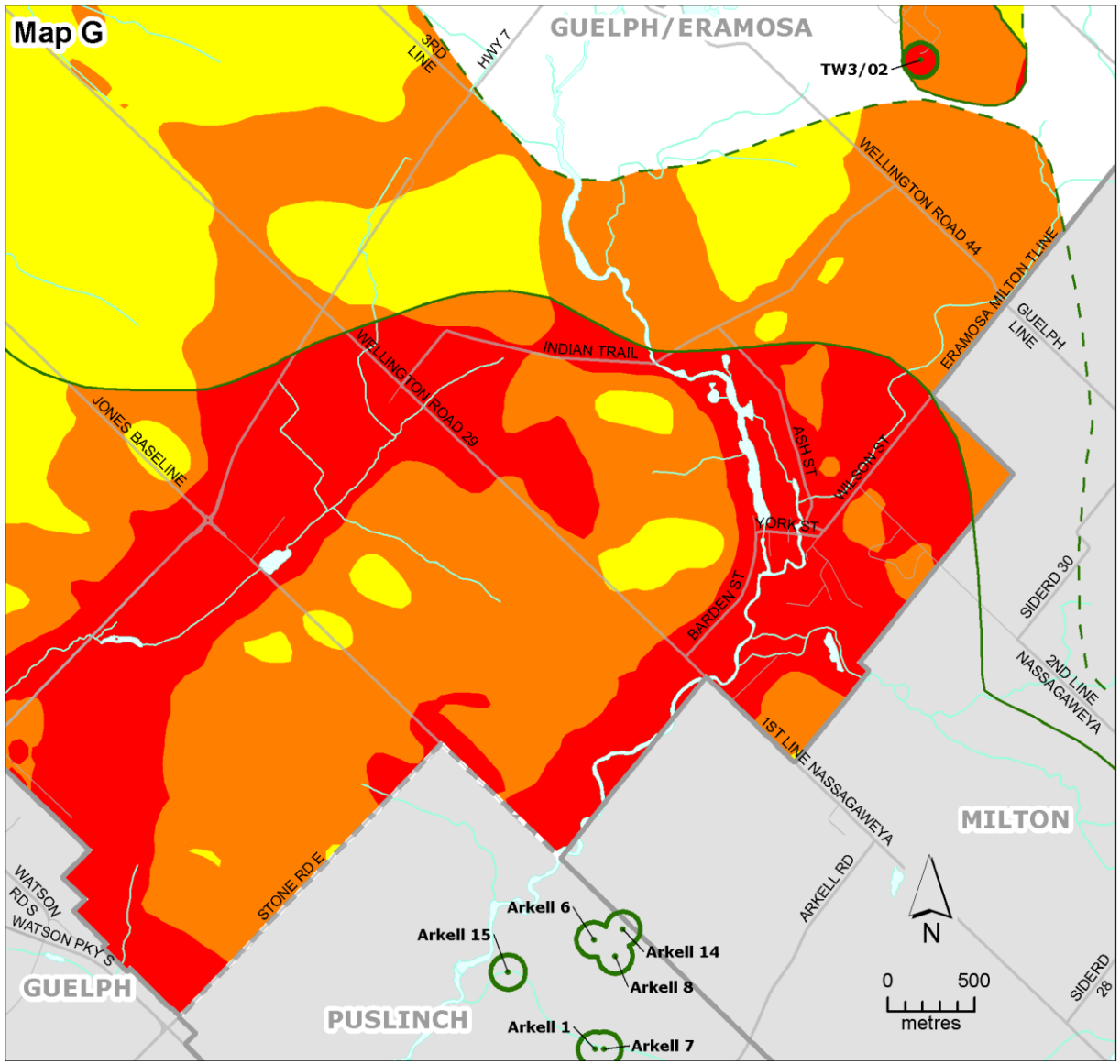
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.21 Schedule P: County of Wellington, Township of Guelph-Eramosa, Map G



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

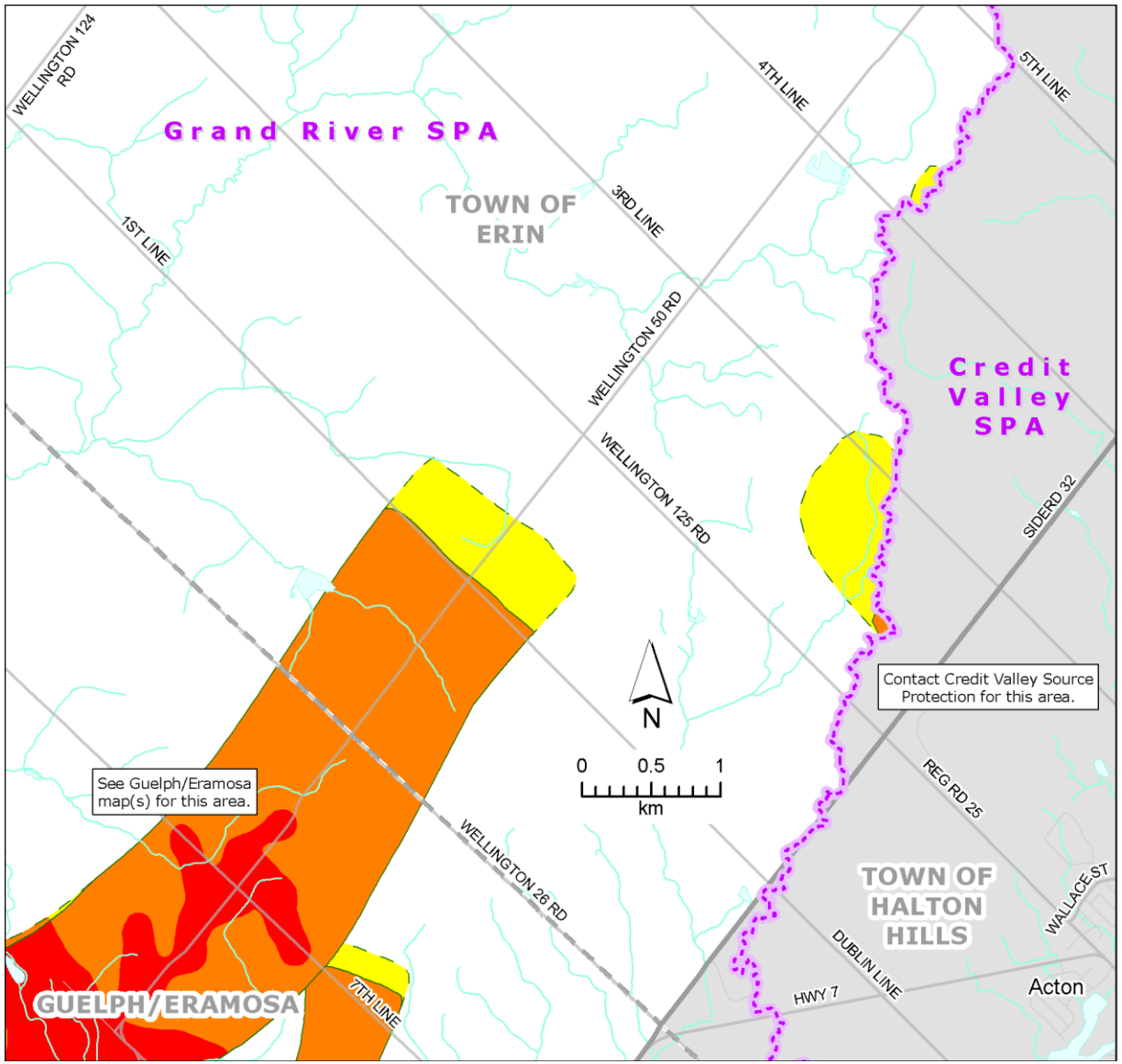
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 19, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.22 Schedule Q: County of Wellington, Town of Erin, Groundwater Vulnerability Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary
- Source Protection Area Boundary

Wellhead Protection Zones:

- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
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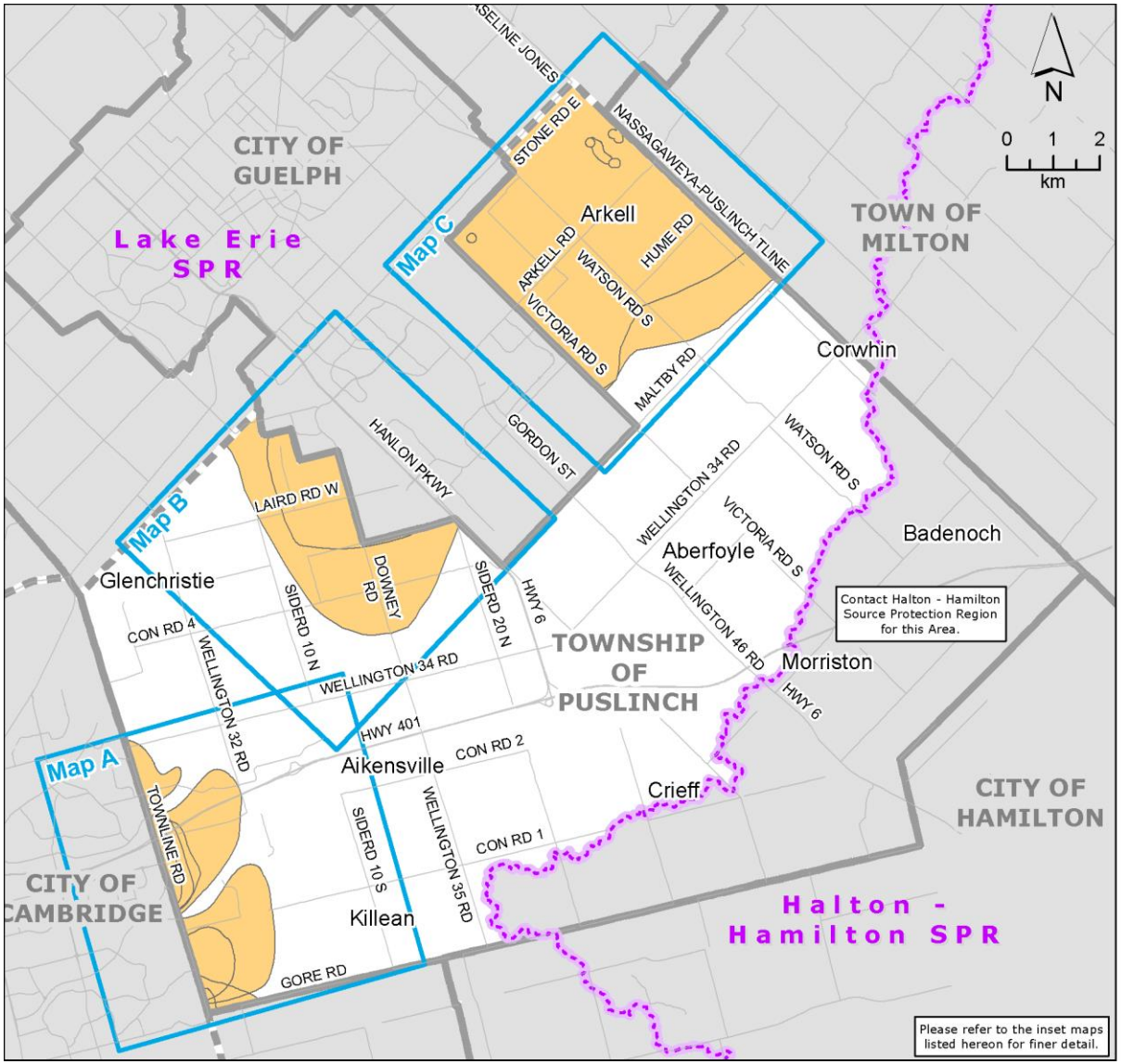
7.23 Schedule R: County of Wellington, Township of Puslinch, Index Map



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Index Map -
Wellhead Protection Zones

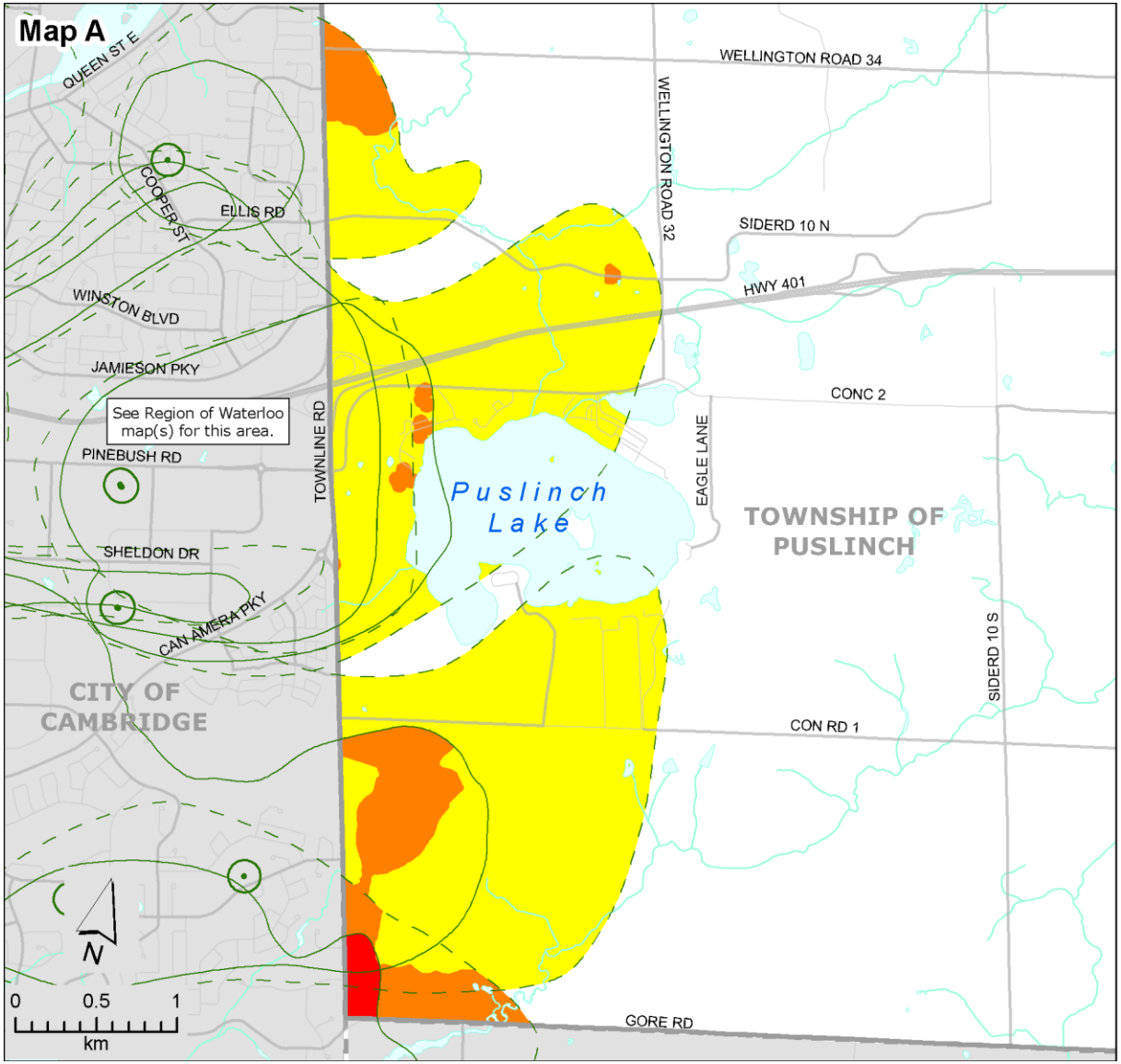
- Main Roads
- Upper / Single Tier Municipal Boundary
- Lower Tier Municipal Boundary
- Lake Erie Source Protection Region Boundary
- Wellhead Protection Zones A, B, C
- Inset Map

Ontario

Grand River Conservation Authority

1. Updated February 6, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.24 Schedule S: County of Wellington, Township of Puslinch, Map A



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

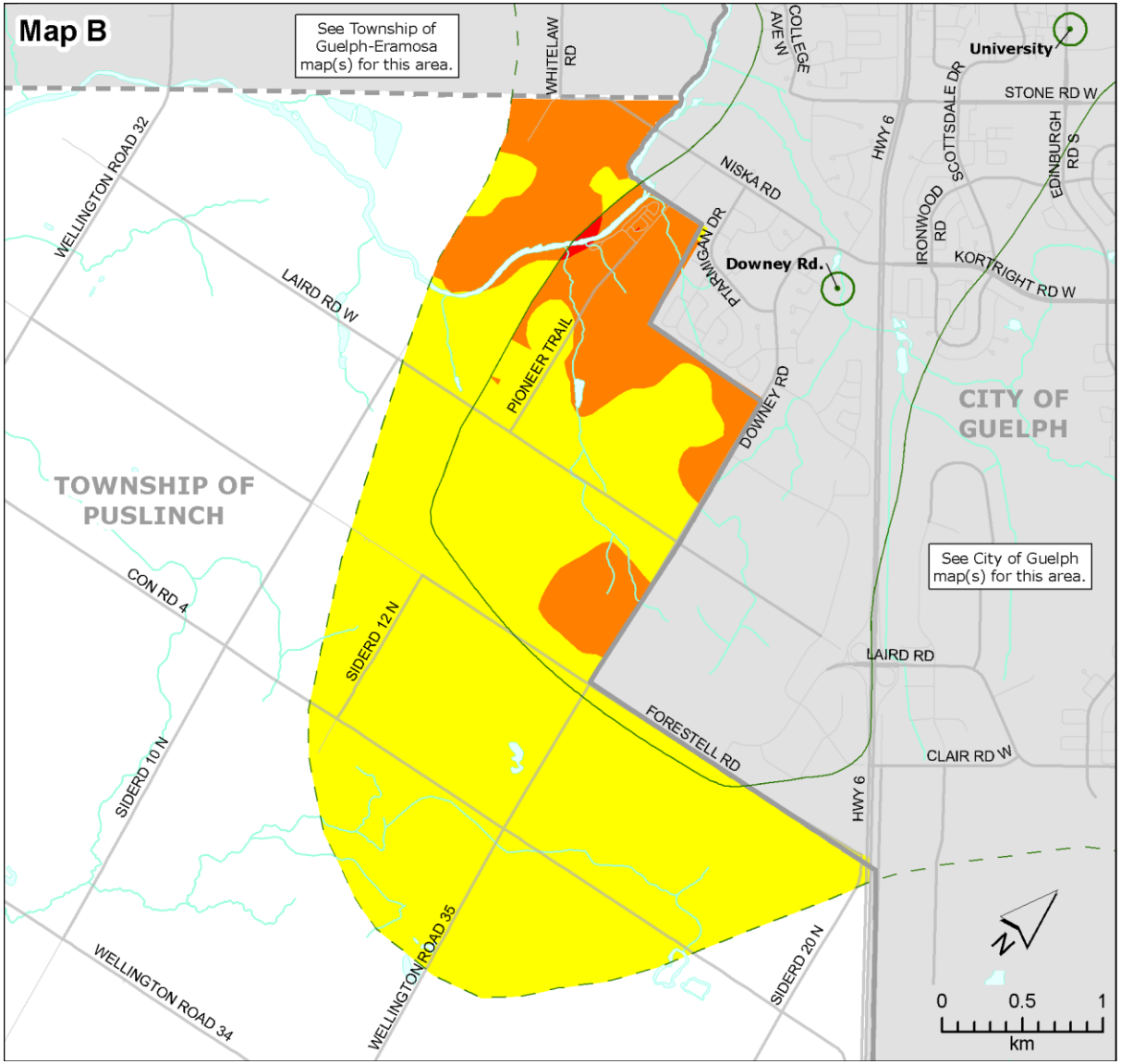
Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

Well
Road
Minor River
Lake / Main River
Wellington County Boundary
Lower Tier Municipal Boundary
Wellhead Protection Zones:
WHPA-A
WHPA-B
WHPA-C

Ontario
Grand River Conservation Authority

1. Updated February 7, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.25 Schedule T: County of Wellington, Township of Puslinch, Map B



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map		
		10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

Wellhead Protection Zones:

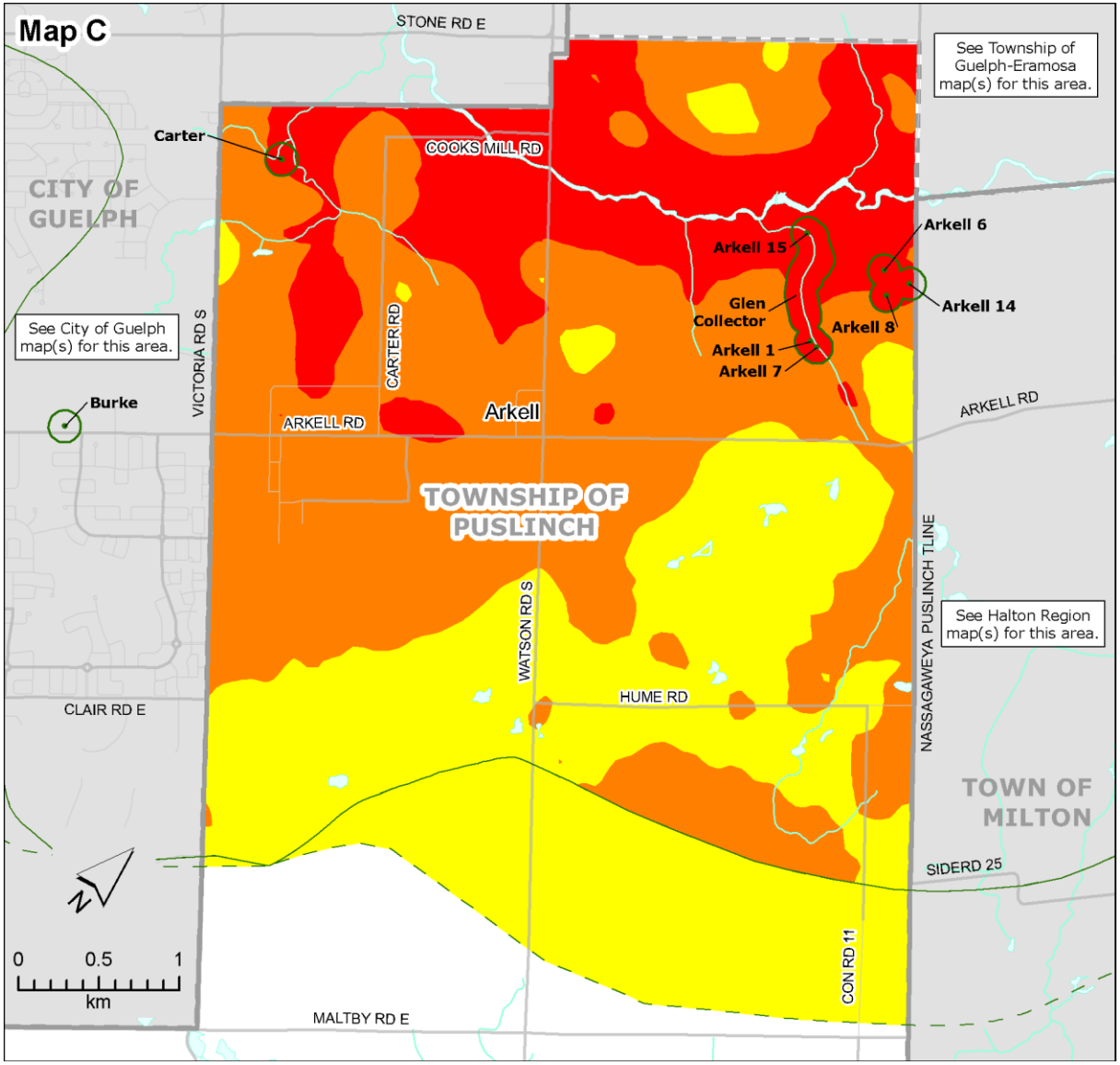
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated February 7, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.26 Schedule U: County of Wellington, Township of Puslinch, Map C



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

	Significant Drinking Water Threat Policy Categories	Vulnerability Scores on Map: 10	8	2,4,6
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			
22.	Oil Pipelines			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within Non-GUDI Wellhead Protection Zones on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the %managed land, livestock density, and/or %impervious surface calculations for these areas. See the text of this plan for further details.

- Well
- Road
- Minor River
- Lake / Main River
- Wellington County Boundary
- Lower Tier Municipal Boundary

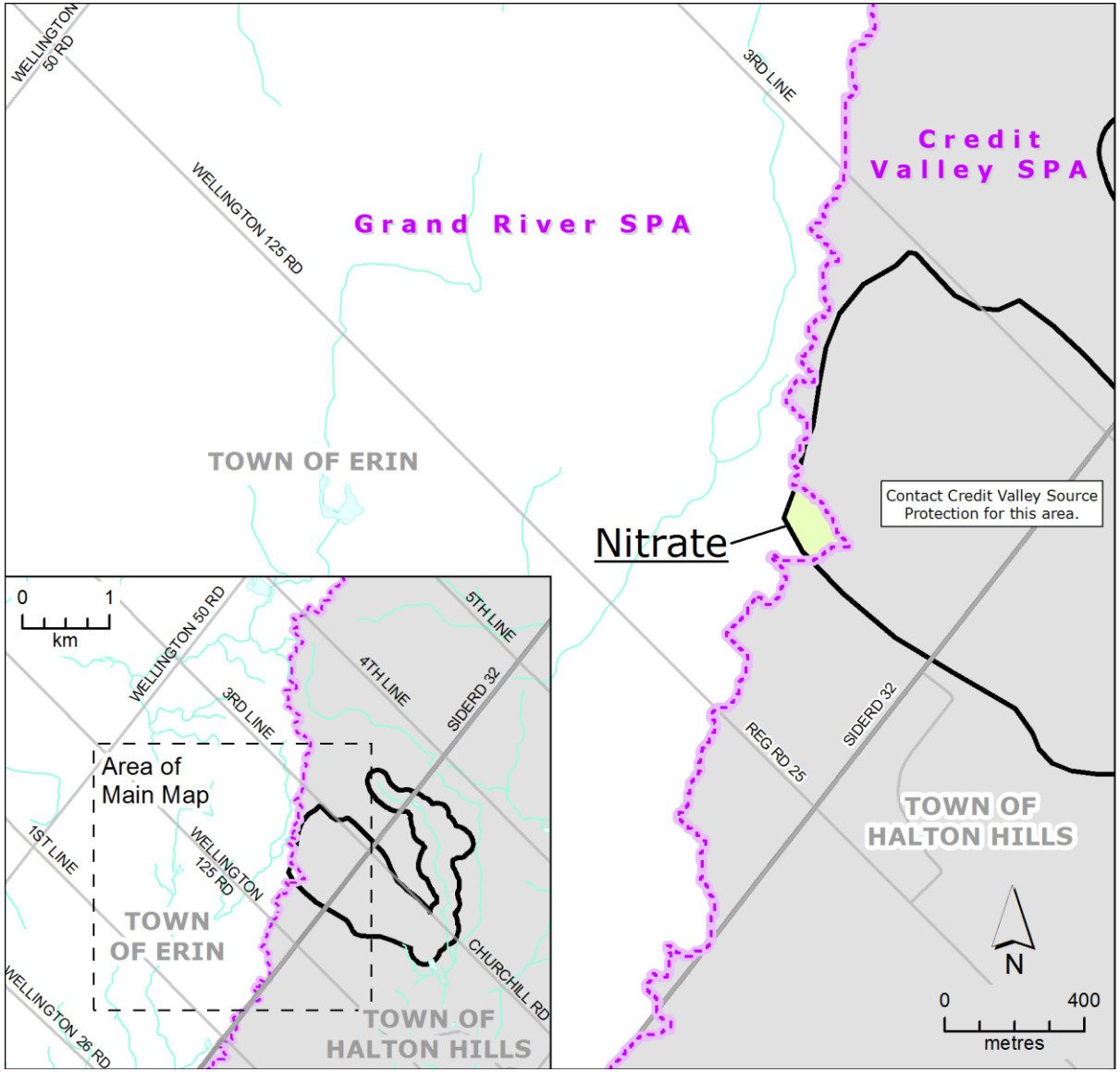
Wellhead Protection Zones:
- WHPA-A
- WHPA-B
- WHPA-C

Ontario

Grand River Conservation Authority

1. Updated February 7, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.27 Schedule V: County of Wellington, Town of Erin, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		✓		✓
2.	Sewage Systems	✓	✓	✓	✓
3, 4.	Agricultural Source Material		✓		
6, 7.	Non-Agricultural Source Material		✓		
8, 9.	Commercial Fertilizer		✓		
12, 13.	Road Salt	✓		✓	
14.	Storage of Snow	✓	✓	✓	
16.	DNAPLs				✓
21.	Livestock Area		✓		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the text of the Source Protection Plan and the Ministry of the Environment Drinking Water Threats Tables.

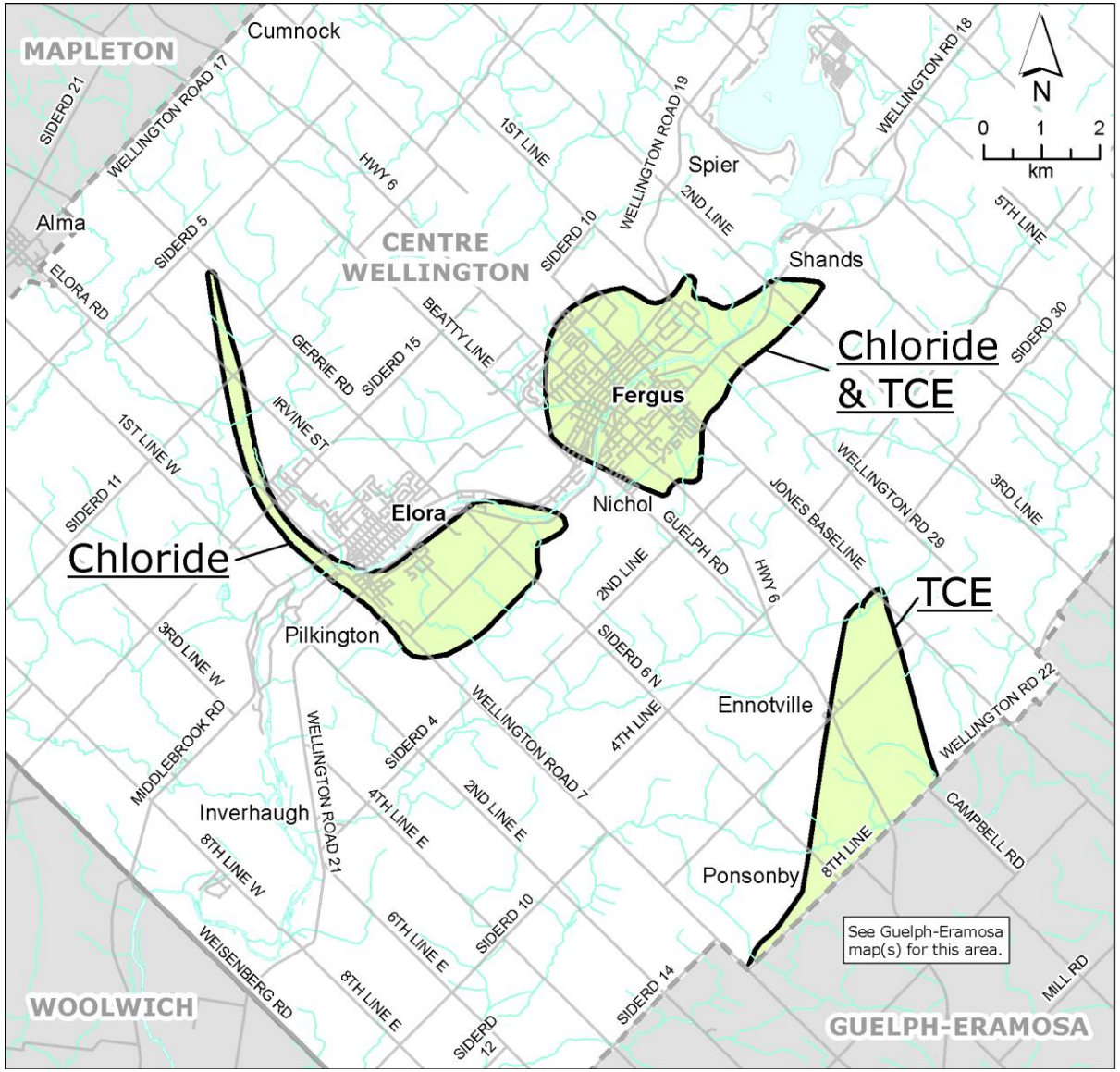
Roads
Minor Rivers
Lakes / Main Rivers
Wellington County Boundary
Source Protection Area Boundary
Davidson Issue Contributing Area
Issue
Associated Issue Parameter

Ontario

Grand River Conservation Authority

1. Updated November 14, 2014
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.28 Schedule W: County of Wellington, Township of Centre Wellington, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		Y		Y
2.	Sewage Systems	Y	Y	Y	Y
3, 4.	Agricultural Source Material		Y		
6, 7.	Non-Agricultural Source Material		Y		
8, 9.	Commercial Fertilizer		Y		
12, 13.	Road Salt	Y		Y	
14.	Storage of Snow	Y	Y	Y	
16.	DNAPLs				Y
21.	Livestock Area		Y		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.

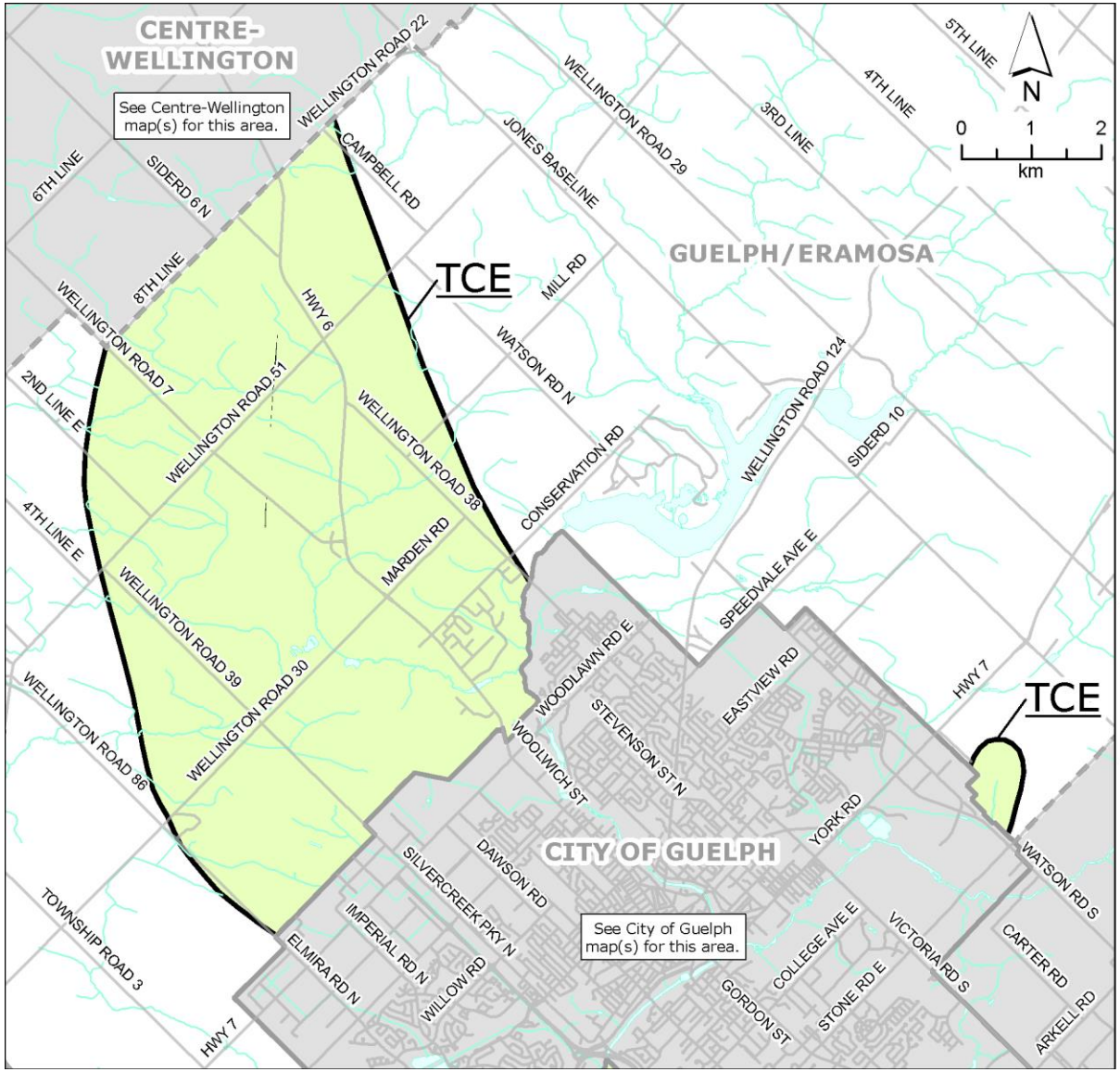
Roads
Minor Rivers
Lakes / Main Rivers
Wellington County Boundary
Lower Tier Boundary
Issue Contributing Area
Issue
Associated Issue Parameter

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.29 Schedule X: County of Wellington, Township of Guelph-Eramosa, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		Y		Y
2.	Sewage Systems	Y	Y	Y	Y
3, 4.	Agricultural Source Material		Y		
6, 7.	Non-Agricultural Source Material		Y		
8, 9.	Commercial Fertilizer		Y		
12, 13.	Road Salt	Y		Y	
14.	Storage of Snow	Y	Y	Y	
16.	DNAPLs				Y
21.	Livestock Area		Y		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.

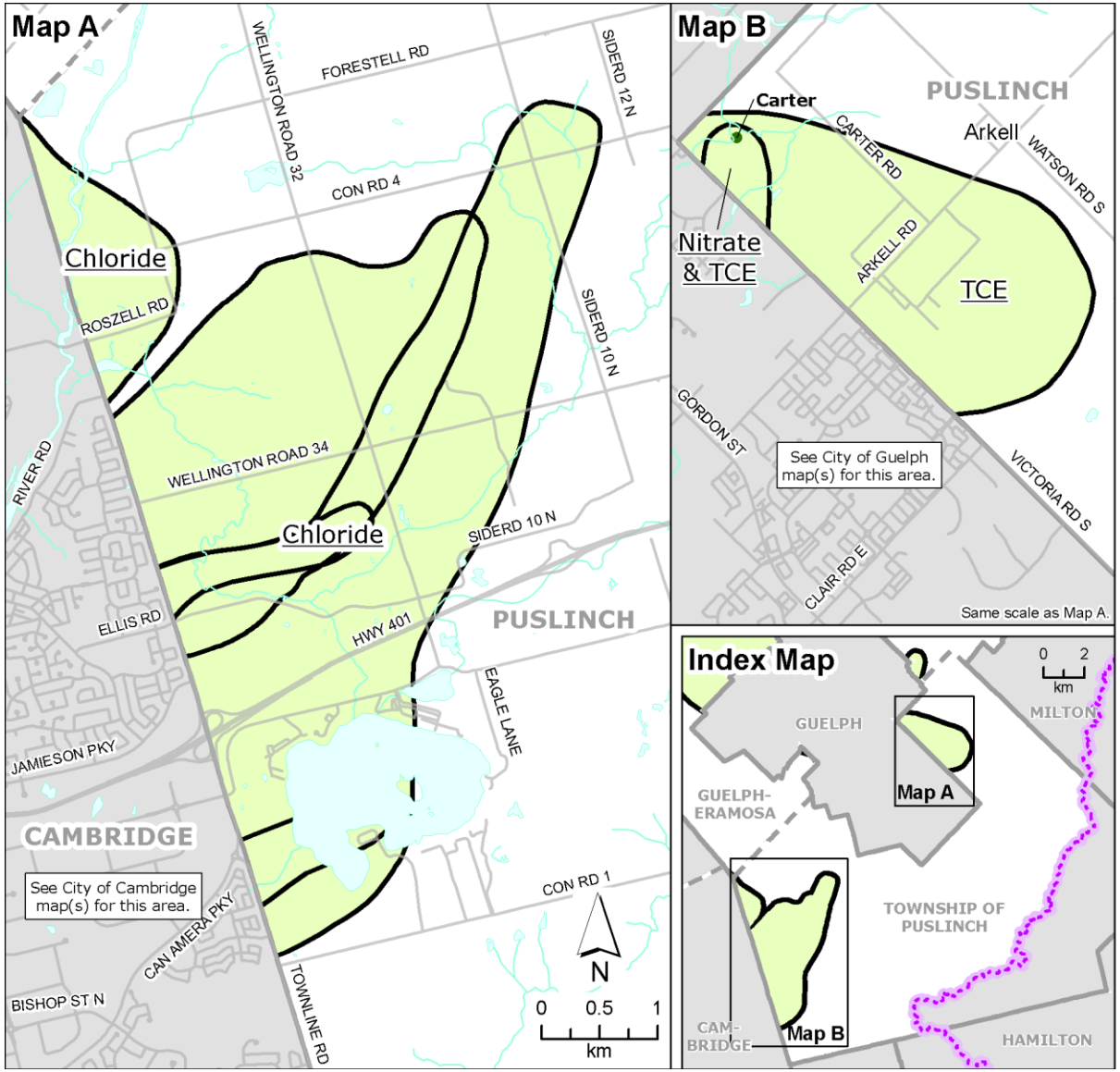
Roads
Minor Rivers
Lakes / Main Rivers
Wellington County Boundary
Lower Tier Boundary
Issue Contributing Area
Issue
Associated Issue Parameter

Ontario

Grand River Conservation Authority

1. Updated September 26, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.30 Schedule Y: County of Wellington, Township of Puslinch, Issue Contributing Areas



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Identified Issue			
		Chloride	Nitrate	Sodium	TCE
1.	Waste Disposal		Y		Y
2.	Sewage Systems	Y	Y	Y	Y
3, 4.	Agricultural Source Material		Y		
6, 7.	Non-Agricultural Source Material		Y		
8, 9.	Commercial Fertilizer		Y		
12, 13.	Road Salt	Y		Y	
14.	Storage of Snow	Y	Y	Y	
16.	DNAPLs				Y
21.	Livestock Area		Y		

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) in the Issue Contributing Area(s) shown on this map. For details refer to the Drinking Water Threats Tables from the Ministry of the Environment and Climate Change, and the text of this Source Protection Plan.

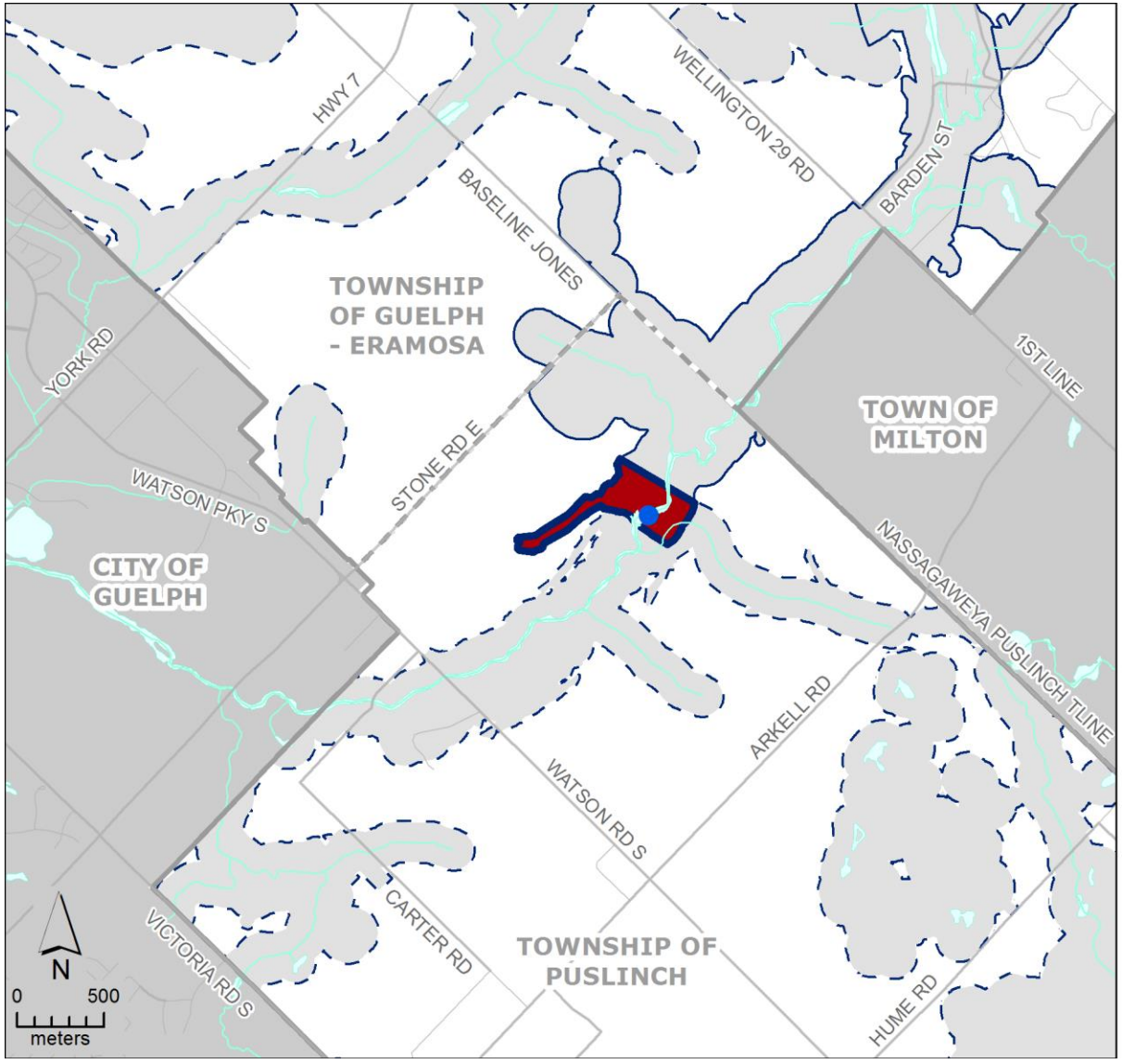
- Well with Identified Issue(s)
- Roads
- Minor Rivers
- Lakes / Main Rivers
- Grand River Source Protection Area Boundary
- Upper Tier Boundary
- Lower Tier Boundary
- Issue Contributing Area
- Issue — Associated Issue Parameter

Ontario

Grand River Conservation Authority

1. Updated March 8, 2019
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

7.31 Schedule Z: County of Wellington, Intake Protection Zones



DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Significant Drinking Water Threat Policy Applicability

Significant Drinking Water Threat Policy Categories		Vulnerability Scores on Map 10	9	8
1.	Waste Disposal			
2.	Sewage Systems			
3, 4.	Agricultural Source Material			
6, 7.	Non-Agricultural Source Material*			
8, 9.	Commercial Fertilizer*			
10, 11.	Pesticide			
12, 13.	Road Salt*			
14.	Storage of Snow			
15.	Fuel			
16.	DNAPLs			
17.	Organic Solvents			
18.	Aircraft De-icing			
21.	Livestock Area			

Note: This table provides a summary of the activities listed in the Clean Water Act (2006) that apply as Prescribed Drinking Water Threats (PDWT) within the Intake Protection Zones shown on this map. For details refer to the text of the Source Protection Plan and the Ministry of the Environment Drinking Water Threats Tables.
*Application of Commercial Fertilizer, Non-Agricultural Source Material, and Road Salt may not be a significant drinking water threat in some areas due to the % managed land, livestock density, and/or % impervious surface calculations for these areas. See the text of the plan for further details.

Intake
Roads
Minor Rivers
Lakes / Main Rivers
Wellington County Boundary
Municipal Boundary
Intake Protection Zones:
IPZ-1
IPZ-2
IPZ-3

Ontario
Grand River Conservation Authority

1. Updated November 17, 2014
2. Larger scale mapping of some map layers, including roads and vulnerability scores, is available at www.sourcewater.ca.
3. This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

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Policy No. 2016-01
Council Vacancy Policy
Corporate Policy

Purpose

To establish an accountable and transparent process for filling a vacancy on Township Council.

Scope

This policy applies to any Office declared vacant on Township Council.

Definition

For the purpose of this policy:

Lot - means a method of determination by placing the names of the nominees on equal size pieces of paper in a container with one name being drawn by the Clerk, or his/her designate.

GENERAL

In accordance with the *Municipal Act*, if a vacancy occurs within ninety (90) days before voting day of a regular election, the municipality is not required to fill a vacancy on Council.

When a vacancy is declared and Council elects to proceed with the filling of the vacancy by appointment the following shall occur:

1. In accordance with the *Municipal Act,* Council shall declare the seat to be vacant.

2. In accordance with the *Municipal Act,* Council shall make the appointment to fill the vacancy within sixty (60) days of the Council declaring the vacancy.

3. The Township Clerk or his/her designate shall post a “Public Notice – Council Vacancy” on the Township’s website and in the local newspaper. The “Public Notice – Council Vacancy” shall indicate Council’s intention to appoint a person to the vacancy and outline the process for filing a nomination.
4. No sooner than fourteen (14) days after a “Public Notice – Council Vacancy” has been given, an information session shall be conducted by staff for potential nominees.

5. A nominee must complete and sign a Council Vacancy - Consent of Nominee form and a Declaration of Qualification, which will be available at the Information Session.

6. The last day for submitting a nomination will be 2:00 p.m. on the Thursday prior to the Council meeting at which the appointment is scheduled to be made.

7. Nominations will be posted to the Township website upon being certified by the Clerk.

8. The vote to appoint a nominee shall occur at a Council meeting.

9. At the Council meeting, the following shall take place:

    a) The Chair shall make a short statement of the purpose of the meeting and the general order of proceedings to be followed.

    b) The Clerk will provide the Chair a list of the names of those certified nominees who have completed the Council Vacancy - Consent of Nominee and Declaration of Qualification Forms.

    c) The Chair will call for a motion from Council in the following form:
    "That the following persons, who have indicated in writing that they are legally qualified to hold the office of councillor and consented to accept the office if they are appointed to fill the vacancy of councillor, be considered for appointment to fill such vacancy."

    d) Each nominee shall be afforded the opportunity to address Council for a period of not more than ten (10) minutes. The order of speaking will be determined by lot. The Clerk shall place the names of all nominees in a container and randomly draw the names.

    e) All nominees shall be asked the same four (4) questions which will be pre-determined based on input by Council.

    f) Nominees will be sequestered in an adjacent room until it is their time to answer the questions posed by Council. Once a nominee has answered the questions, they may remain in the Council Chambers.

    g) Upon hearing all the submissions of the nominees, Council will proceed to vote as follows:

i) Members of Council will vote by way of public vote.

ii) The first round of voting will be to short list the nominees.

- In the case of four (4) or more nominees, members of Council will select three (3) nominees.
- In the case of three (3) nominees, members of Council will select two (2) nominees.
- In the case of two (2) nominees, second round voting procedures will apply.

iii) Where votes cast are equal, nominees with equal votes will be subject to a re-vote, whereas each member of Council will select two (2) nominees. If, after the re-vote, the votes are still equal, and if:

- There are four (4) or more nominees remaining, the Clerk shall by lot select from the nominee(s) with equal votes to be included in the second round of voting until a total of three (3) nominees have been selected for the second round of voting.

iv) The top three (3) nominees, or top (2) nominees, as the case may be, who receive the most votes will continue to the second round of voting. All other nominees will be removed from further consideration.

v) The second round of voting, members of Council will select no more than one nominee.

- Where a nominee receives more than one half of the votes, the Clerk will declare the candidate to be elected,

- Where the nominee receiving the greatest number of votes cast does not receive more than one half of the votes of all members of Council, the nominee or nominees who received the fewest number of votes will be excluded from further consideration subject to the following procedures:

    - Where a candidate receives zero votes, they will automatically be excluded from any further rounds of voting;

vi) In the event that there are three (3) nominees remaining, and the votes cast are equal for two (2) nominees, nominees with equal votes will be subject to a re-vote, whereas each member of Council will select one (1)

nominee. If, after the re-vote, the votes are still equal for two (2) nominees who received the fewest number of votes, the Clerk shall by lot select one such nominee to be included in the final round of voting.

- In the event that two (2) candidates remain, the vote shall be taken again. If, after the re-vote, the votes are still equal for two (2) nominees the Clerk will break the tie by drawing the name of the successful nominee by lot.

h) Upon conclusion of the voting, the Clerk will declare to be elected the nominee receiving the votes of more than one-half of the number of the members of Council present and voting or by lot as outlined in 9 (g).

i) A by-law confirming the appointment shall be enacted by Council appointing the successful nominee to the office for the remainder of the term of Council.

REPORT ADM-2019-028

TO: Mayor and Members of Council

FROM: Courtenay Hoytfox
Development and Legislative Coordinator

MEETING DATE: December 4, 2019

SUBJECT: Annual By-law Enforcement Occurrence Update
File: C11-ADM

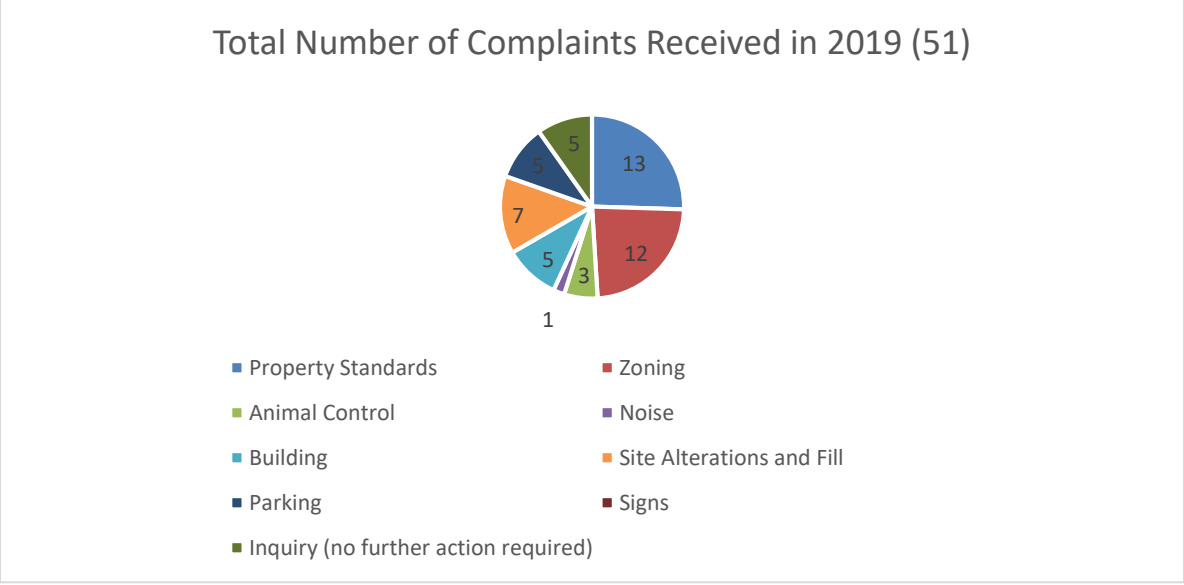
RECOMMENDATION

That Report ADM-2019-028 regarding the Annual By-law Enforcement update be received for information; and

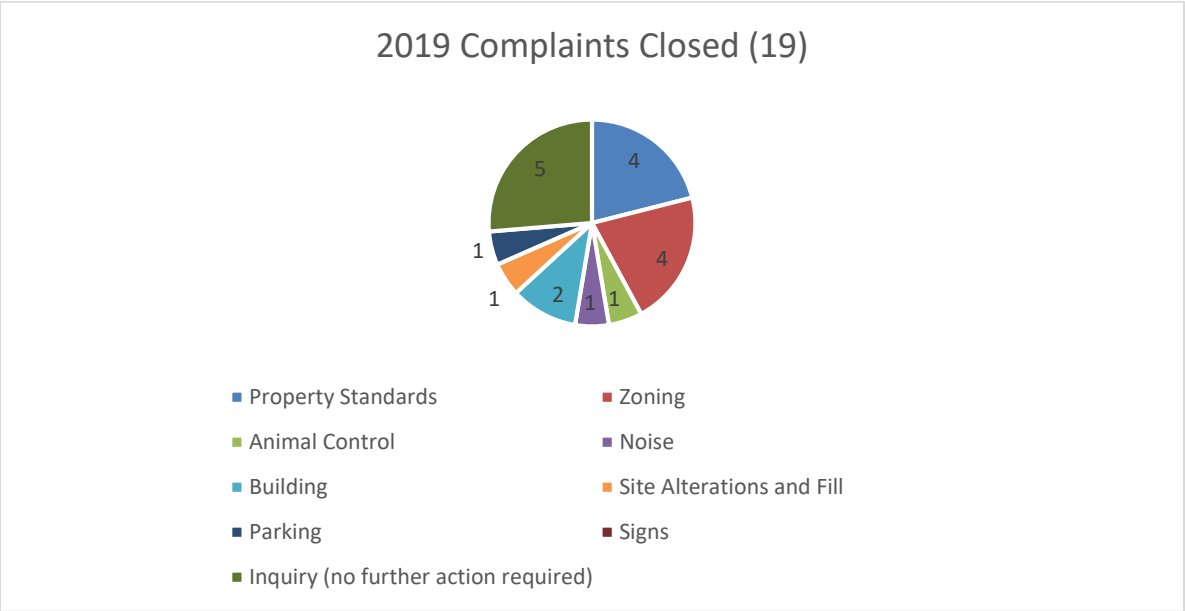
That staff recommend bringing forward a By-law enforcement occurrence update on a quarterly basis.

Background

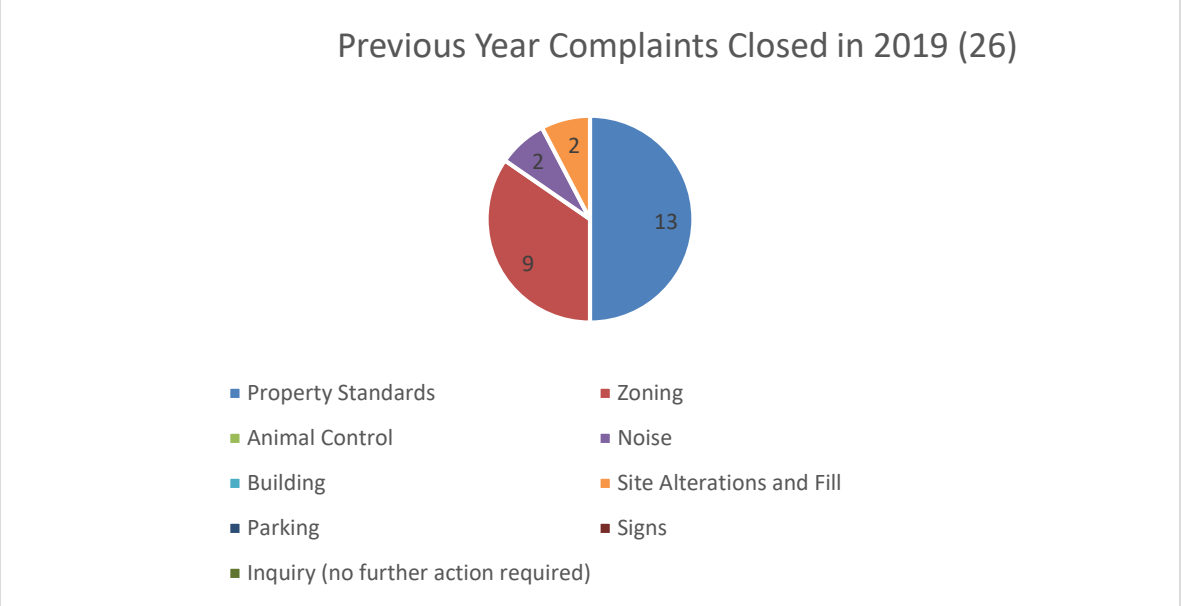
The Township of Puslinch Clerks Department is responsible for tracking by-law complaints from the time they are received until the file is considered closed. The chart below shows the number of complaints received to date for the 2019 calendar year. For comparison, in 2018 and 2017 there was a total of 65 and 51 complaints respectively.



Files are created and tracked where a violation has occurred. The second chart details the number and type of files that were received and closed in 2019.



The final chart below shows the complaints received in previous years (2018, 2017, and 2016) that have been closed in this calendar year. Staff estimate the majority of pre 2019 files being closed by summer 2020.



Financial Implications

None.

Applicable Legislation and Requirements

None.

Attachments

None.

REPORT FIN-2019-033

TO: Mayor and Members of Council

FROM: Mary Hasan, Director of Finance/Treasurer

MEETING DATE: December 4, 2019

SUBJECT: Municipal Modernization Program – Intake 1
File No. F11 MIN

RECOMMENDATIONS

THAT Report FIN-2019-033 regarding the Municipal Modernization Program – Intake 1 be received; and

That Council support the submission of a Multi-Party Expression of Interest to the Municipal Modernization Program for the proposed Third Party Information Technology Service Delivery Review for the Township of Puslinch, Township of Wellington North, Town of Minto, Township of Mapleton, Guelph Eramosa Township, Township of Centre Wellington, and County of Wellington.

DISCUSSION

Purpose

The purpose of this report is to obtain Council's support for the submission of a Multi-Party Expression of Interest (EOI) to the Municipal Modernization Program (MMP) for the proposed Third Party Information Technology Service Delivery Review for the Township of Puslinch, Township of Wellington North, Town of Minto, Township of Mapleton, Guelph Eramosa Township, Township of Centre Wellington and County of Wellington.

Background

Intake 1 of the MMP is now open and accepting EOI's for funding to undertake expenditure reviews with the goal of finding service delivery efficiencies and lowering costs in the longer term.

Eligible municipalities can apply individually, or collectively with other eligible municipalities, to

undertake independent third-party reviews.

To be eligible under Intake 1, a project must:

1.) Be a review of municipal service delivery expenditures by an independent third-party reviewer for the purpose of finding savings and efficiencies. The review project could take a number of forms including:

- a line-by-line review of the municipality's entire budget; or
- a review of service delivery and modernization opportunities; or
- a review of administrative processes to reduce costs.

2.) Result in a report by the independent third-party reviewer that provides specific and actionable recommendations for cost savings and improved efficiencies.

3.) Begin field work no earlier than November 1, 2019, with a draft report completed by June 15, 2020 and the final report posted publicly by June 30, 2020.

The program will not cover review projects where:

- the goal is to identify opportunities for revenue generation or reductions in front line services; or
- the review does not result in a formal report prepared by a third party; or
- the object of the review extends beyond municipal accountability.

FINANCIAL IMPLICATIONS

It is currently understood that the 3rd party consulting costs are fully funded for intake 1 of this program. Should there be an unfunded portion, the Township's Corporate Information Technology discretionary reserve can be utilized to fund the unfunded portion. The MMP anticipates that most review projects will be between $20,000 and $200,000 and funding amounts may depend on the available appropriation. Only third-party service provider fees are eligible. Municipal administrative costs, such as staff time, are not eligible.

APPLICABLE LEGISLATION AND REQUIREMENTS

Municipal Act, 2001

ATTACHMENTS

None

REPORT FIN-2019-034

TO: Mayor and Members of Council

FROM: Mary Hasan, Director of Finance/Treasurer

MEETING DATE: December 4, 2019

SUBJECT: 2020 User Fees and Charges By-law - Final
File No. C01 FEE

RECOMMENDATIONS

THAT Report FIN-2019-034 regarding the 2020 User Fees and Charges By-law - Final be received; and

That Council enact a by-law to adopt the User Fees and Charges By-law.

DISCUSSION

Purpose

The purpose of this report is to:

1.) Provide updates to the User Fees and Charges By-law based on further information received.
2.) Seek approval from Council to enact the 2020 User Fees and Charges By-law.

Background

A Public Meeting was held on September 12, 2019 at 7:00 pm at the Municipal Office to obtain public input on the proposed 2020 User Fees and Charges By-law. Township staff reported on the results of the Public Meeting at the October 16, 2019 Council Meeting.

Planning Fees

The County of Wellington (County) conducted a full planning application fees review (through Watson & Associates) at the end of 2018 to alter the County's fees to move towards full cost recovery for the planning review services completed by the County for its member municipalities. Schedule A to this Report includes the final County Planning Fees.

Minor Variance

Township staff recommend that a two tier fee structure be established for minor variance applications. The purpose of a two tier fee structure is to differentiate between the types of minor variance applications that require County planning services (ie. for the preparation of planning reports and/or attendance at meetings). The County's proposed 2020 fee for minor variance applications include an hourly rate of $150/hour plus a meeting rate of $300 as applicable.

The two tier fee structure recommended is outlined below and incorporated in Schedule B to this Report:

Minor Variance – Type 1

Any minor variance application to permit any of the following on residential properties:

- Lot line setbacks for single family dwellings and accessory structures
- Height variances for single family dwellings and accessory structures
- Maximum size of accessory structure variances
- Maximum size of accessory unit variances

Minor Variance – Type 2

All other minor variance applications not listed under Type 1.

Minor Variance – Type 2 applications require County Planner involvement and incorporate a higher fee in comparison to Type 1 in order to recover the costs associated with the County's services.

Zoning By-law Amendment Fee

The County's proposed 2020 fee for zoning by-law amendment applications is a flat fee of $6,580. The Township utilizes the County's planning services for all zoning by-law amendment applications. The practice in the past was for the County to invoice the Township for County

staff time and meeting attendance related to zoning by-law amendment applications. On average, the amount invoiced by the County from 2014 to 2018 for 21 applications amounted to $893 per application.

Township staff recommend that the zoning by-law amendment application fee be consolidated into one fee in order to recoup the costs associated with County planning services and Township administrative costs associated with processing the applications. The previous User Fees and Charges By-law presented in Report FIN-2019-031 incorporated the following fees for 2020 excluding the new County flat fee of $6,580:

Zoning By-Law Amendment – Minor - $5,100
Zoning By-Law Amendment – Standard - $11,424

It is recommended that the fee be changed as follows to incorporate the County flat fee:

Zoning By-law Amendment - $14,842

Garden Suites

The practice in the past was to charge a minor zoning by-law amendment fee for garden suites and garden suite renewals as these applications are categorized as zoning amendments under the Planning Act.

Staff recommend a flat fee of $1,200 be established for both garden suites and garden suite renewal applications in order to recover the Township administrative costs associated with these applications. Township staff do not require the County's planning services or external consultant services for review of these applications.

Cost Recovery Services Provided by Fire Marque Inc.

Council at its meeting held on November 20, 2019 received Report FIR-2019-010 and authorized the amendment to the Township's User Fees and Charges By-law to account for cost recovery services by Fire Marque Inc. through fire coverage on insurance policies.

The User Fees and Charges By-law attached as Schedule B to this Report has incorporated the relevant clauses to the By-law wording as recommended by Fire Marque.

Schedule E of the User Fees and Charges By-law now incorporates a fee denoted as "Fire Department Specific Response Fees".

FINANCIAL IMPLICATIONS

The fees approved as part of the User Fees and Charges By-law will be incorporated in the 2020 Operating Budget.

APPLICABLE LEGISLATION AND REQUIREMENTS

Section 391(1) of the Municipal Act

Section 7(1) of the Building Code Act

Section 69 of the Planning Act

ATTACHMENTS

Schedule A – County of Wellington Planning Fees

Schedule B – 2020 User Fees and Charges By-law

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Planning Committee
From: Aldo Salis, Director of Planning and Development
Ken DeHart, County Treasurer
Date: Thursday, November 14, 2019
Subject: **Revised Fees for Minor Variance Applications**

Background

In October 2019, staff recommended new charges for planning services related to municipal zoning by-law amendment applications, minor variance applications, and site plan applications. County Council supported the move towards setting new fees for rezoning and site plan applications in the amount of $6,580 and $2,280 respectively. However, the proposed fee for minor variance applications was deferred pending further review by staff.

Minor Variance Review Fee

As presented to the Planning Committee in October, the proposed minor variance application fee recommended by Watson & Associates was set at $4,090. After review, the Committee and others expressed concerns regarding the appropriateness of the fee relative to the majority of minor variances applications received by member municipalities (e.g. small residential construction projects requiring relief from required setbacks).

It was initially proposed that the Planning Director be provided with discretion regarding the fees charged based on the nature of the minor variances. That is, that the Director would be authorized to reduce or waive fees for minor or inconsequential variance applications. After further discussion, the Committee directed staff to reconsider the fee for minor variance applications and in particular how to determine if the fee is to be reduced or waived.

Reconsideration of Fees for Minor Variance Applications

The level of engagement by County planning staff with local committees of adjustment regarding minor variance applications varies from municipality to municipality - at the request of our member municipalities. Some of our municipalities request planning staff to attend all committee of adjustment meetings and present planning reports regardless of the nature or complexity of the application. Some municipalities request the preparation of planning reports, but do not require attendance or presentations to the committee. Some also request administrative assistance (e.g. notices and mapping). In essence, the service we provide to our member municipalities is based on the level service they require to perform this statutory function under the Planning Act.

Given the varied level of our staffing efforts with respect to minor variance applications, we recommend that the fee for services not be a flat fee, but instead be based directly on the effort provided. Therefore, the fees charged for minor variance applications will be based on the standard hourly rate ($150 for 2020) and invoiced accordingly. If planning staff are required or requested to attend committee of adjustment meetings, the standard meeting rate will apply ($300 for 2020).

Recommendation:

That the fee charged for local minor variance applications as recommended in this report (based on the hourly/meeting rates) be approved for inclusion in the 2020 Planning User Fees schedule; and

That the County Treasurer notify the local municipal Treasurers of this change to the County's fees.

Respectfully submitted,

Aldo Salis
Director of Planning and Development

Ken DeHart, CPA, CGA
County Treasurer

COUNTY OF WELLINGTON

COMMITTEE REPORT

To: Chair and Members of the Planning Committee
From: Ken DeHart, County Treasurer
Date: Thursday, November 14, 2019
Subject: **Planning 2020 User Fees and Charges**

Background:

The authority to establish fees for County services is set out in various statutes, including:

- Part XII of the *Municipal Act*
- Section 23 of the *Public Libraries Act*
- Section 69 of the *Planning Act*

The attached schedule sets out the proposed user fees for 2020, and includes a comparison to 2019 rates. If necessary, new by-laws will be submitted to Council on November 28, 2019 and any new or revised fees will come into effect on January 1, 2020.

Recommendation:

That the attached 2020 User Fees and Charges for Planning be approved.

Respectfully submitted,

Ken DeHart, CPA, CGA
County Treasurer

COUNTY OF WELLINGTON
2020 USER FEES AND CHARGES

Programme/Service:	**Planning and Land Division**
Department:	Planning Department
Governance:	Planning and Land Division Committee

Description	2019 fee	2020 fee	% change	HST (add/ incl/na)
Subdivision				
Draft Plan of Subdivision application (1)	$11,000	$11,220	2%	N/A
Per Lot / Unit Fee				
0 - 25	$145	$150	3%	N/A
26 - 100	$108	$110	2%	N/A
101 - 200	$72	$74	3%	N/A
200+	$58	$60	3%	N/A
Director's Final Approval – Subdivision	$2,700	$2,750	2%	N/A
Major Plan Revision – Subdivision	$6,490	$6,620	2%	N/A
Minor Plan Revision – Subdivision	$3,400	$3,470	2%	N/A
Draft Approval Extension – Subdivision	$1,175	$1,200	2%	N/A
Emergency Extension – Subdivision	$1,175	$1,200	2%	N/A
Condominium				
Draft Plan of Condominium application (1)	$19,850	$20,250	2%	N/A
Per Lot / Unit Fee	$190	$195	3%	N/A
Director's Final Approval – Condominium	$2,700	$2,750	2%	N/A
Major Plan Revision – Condominium	$6,490	$6,620	2%	N/A
Minor Plan Revision – Condominium	$3,400	$3,470	2%	N/A
Draft Approval Extension – Condominium	$1,175	$1,200	2%	N/A
Emergency Extension – Condominium	$1,175	$1,200	2%	N/A
Official Plan Amendment				
County official plan amendment application (1)	$16,300	$16,630	2%	N/A
Local official plan amendment application (1)	$3,050	$3,110	2%	N/A
Minor/Small-Scale Pit or Quarry Official Plan Amendment Application (1)	$21,300	$21,730	2%	N/A
Complex Pit or Quarry Official Plan Amendment Application (1)	$51,500	$52,530	2%	N/A
Part Lot Control				
Per Lot / Unit Fee	$100	$100	0%	N/A
Part Lot Control By-law Director's Final Approval	$900	$920	2%	N/A
Land Division				
Severance application (2)	$4,340	$4,430	2%	N/A
Severance registration	$1,680	$1,710	2%	N/A
Change of Conditions for severance applications	$1,550	$1,580	2%	N/A

Tax Codes: Add = Tax is in addition to fee; Incl = Tax is included in fee; N/A = Tax not applicable

COUNTY OF WELLINGTON
2020 USER FEES AND CHARGES

Programme/Service:	**Planning and Land Division**
Department:	Planning Department
Governance:	Planning and Land Division Committee

Description	2019 fee	2020 fee	% change	HST (add/ incl/na)
Local Municipal Charges (3)				
Hourly Rate	$145	$150	3%	N/A
Meeting Charge	$290	$300	3%	N/A
Rezoning Application Review	N/A	$6,580	NEW	N/A
Site Plan Application Review	N/A	$2,280	NEW	N/A
Minor Variance Application Review	N/A	Hourly rate $150 plus Meeting Charge of $300 as applicable	NEW	N/A

Notes:

1. **Peer Review** - the applicant is responsible for the full costs of undertaking peer reviews for any studies or drawings submitted in support of the application. These costs shall include a 10% administration fee
2. **Land Division/Severance** - validation of Title, Technical Severance, Mortgage Discharge is $1,500
3. **Local Municipal Charges** - are charged under the authority set out in Part XII of the Municipal Act, S.O. 2001, c. 25

All fees, other than Local Municipal Charges, are established under the authority of Section 69 of the *Planning Act, R.S.O. 1990, c. P.13;* all fees are under the authority of by-law #5638-19 of the Corporation of the County of Wellington.

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NO XXX-2019

A by-law to permit the Municipality to impose fees or charges with respect to services or activities provided, related costs payable, and for the use of its property, and to repeal By-law 056-2018.

WHEREAS Section 391(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, a municipality may pass By-laws imposing fees or charges for services or activities provided or done by or on behalf of it, for costs payable by it for services or activities provided or done by or on behalf of any other municipality or any local board, and for the use of its property including property under its control; and

WHEREAS Section 7(1) of the Building Code Act, 1992, S.O. 1992, c. 23, as amended, provides that a municipality may pass By-laws imposing fees and charges; and

WHEREAS Section 69 of the Planning Act, R.S.O. 1990, c.P.13, as amended provides that the Council of a municipality may by By-law establish a tariff of fees for the processing of applications made in respect of planning matters; and

WHEREAS The Council of the Corporation of the Township of Puslinch deems it appropriate to update the Township's User Fees and Charges By-law.

NOW THEREFORE the Council of the Corporation of the Township of Puslinch enacts as follows:

1. For the purpose of this By-law:

a.) **"Cost(s)"** means any and all disbursements incurred by the municipality, and includes, but is not restricted to, any registration costs, title search costs, corporate search costs, survey costs, reference plan costs, advertising costs, outside counsel fees, paralegal fees, site inspection costs and any applicable taxes;

b.) "Fire Department" means a fire department established by the Township of Puslinch in accordance with the provisions of the Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4 as amended;

c.) "Fire Department Specific Response Fees" means cost recovery fees for **fire department** attendance at a **property** for which the **property owner(s)** have **fire department** insurance coverage;

d.) Indemnification Technology® shall mean **fire department** incident reporting, data collection and **property** insurance policy wording interpretation to maximize billing opportunities on behalf of fire departments by invoicing insurance companies for costs of fire department attendance with respect to insured perils;

e.) "Property" means any real property located within the geographical boundaries of the Township of Puslinch. Real property includes buildings, contents and structures of any nature and kind in or upon such lands to which service is provided. Real property can also include **property** to which the **fire department** is under a service agreement to provide **fire department** response services, automatic aid or mutual aid.

f.) **"Property Owner(s)"** means the registered owner of **property** or any person, firm, corporation, partnership or society and their heirs, executors, administrators or other legal representatives, including a property manager, tenant, occupant, mortgagee in possession, receiver, manager, trustee or trustee in bankruptcy having control over or possession of the **property** or any portion thereof;

g.) **"Township"** means the Corporation of the Township of Puslinch.

2. The fees, **costs** and charges, as outlined in the schedules attached hereto and forming part of this By-law shall be automatically adjusted annually based on the Consumer Price Index inflation rate as outlined in the Ontario Budget in accordance with Council Resolution No. 2019-298.

3. Any person requesting, applying or utilizing the services, applications or approvals listed in the attached schedules and forming part of this By-law shall pay the fees listed for that service, application or approval as set out in the attached schedules.

4. These fees, **costs**, and charges are applicable to residents and non-residents at the rates noted unless there is a specified exemption in the attached schedules.

5. No request by any person for a service, application or approval listed in the attached schedules shall be acknowledged or performed by the **Township** unless and until the person requesting the service, application or approval has paid the fees, **costs** or charges as set out in the attached schedules, unless noted otherwise.

6. All **Township** accounts and invoices are due and payable when rendered.

7. All unpaid fees, **costs** or charges imposed by this By-law on a person constitute a debt of the person to the **Township**.

8. The Treasurer shall add the fees, **costs** and charges imposed pursuant to this By-law to the tax roll for any **property** in the **Township** for which all of the **property owners** are responsible for paying the fees, **costs** and charges under this By-law and collect them in the same manner as municipal taxes in accordance with Section 398 of the Municipal Act, 2001, S.O. 2001, c. 25 as amended.

9. If peer or legal review **costs** are incurred by the **Township** in the processing of an application or approval by the **Township**, the applicant is required to pay these **costs** to the **Township**. The following are the applications or approvals subject to peer or legal review **costs:**

    a. Plan of Subdivision or Condominium Agreement or Pre-Servicing Agreement
    b. Zoning By-Law Amendment - Aggregate
    c. Site Alteration

10. The **Township** is not obligated to further process an application or approval until all outstanding third party **costs**, fees and other disbursements have been paid by the applicant.

11. The fees, **costs** and charges listed in the schedules to this By-law shall, where applicable, be subject to any applicable provincial and federal taxes.

12. Any fee, **cost** or charge:

    a. authorized by a by-law that comes into effect on the same or a later date than this By-law; or

    b. included in a valid agreement entered into by the **Township** and one or more other parties,

    shall be the approved and imposed fee, **cost** or charge for the service, activity or use of **property** specified.

13. The payment of any fee**, cost** or charge in this By-law shall be in Canadian currency.

14. The following Schedules form part of this By-law:

Schedule	**Department**
A	Administration
B	Finance
C	Corporate

D	Public Works
E	Fire and Rescue Services
F	Building
G	Planning and Development
H	By-law
I	Parks
J	Optimist Recreation Centre
K	Puslinch Community Centre

15. The fees, **costs** and charges, as outlined in the schedules attached hereto and forming part of this By-law, shall be implemented and take effect on January 1, 2020.

Fire Department Specific Response Fees

16. The **property owner** shall be responsible for the payment of **fire department specific response fees** imposed by this By-law in accordance with Schedule E attached to this By-law.

17. The **Township** may use **Indemnification Technology®** to assess applicable insurance coverage for **fire department specific response fees**.

18. Where the **Township** believes and/or **Indemnification Technology®** indicates **fire department specific response fees** are applicable but the **property owner** does not have, in part or in full, insurance coverage for **fire department** charges for the **property**, the **Township** may adjust the **fire department specific response fees** to the extent of insurance coverage upon provision by the **property owner** of evidence, to the satisfaction of the **Township**, that no such insurance coverage exists or to demonstrate the limits of such coverage.

Cancellation Terms – Parks, Optimist Recreation Centre, Puslinch Community Centre

19. A refund of 80 percent will be provided where 30 days' notice of cancellation is given for Puslinch Community Centre rentals.

20. A full refund will be provided where 72 hours or 3 days' notice of cancellation is given for Parks and Optimist Recreation Centre rentals.

Payment Terms – Parks, Optimist Recreation Centre, Puslinch Community Centre

21. One-Time Rentals - Payment is required within seven days of contract creation.

22. Recurring Rentals Throughout the Year - Payment is required on a quarterly basis. The first payment is required within seven days of contract creation. Future payments are required quarterly.

23. Recurring Seasonal Bookings - Payment is required in two instalments. The first payment is required within seven days of contract creation. The second payment is required halfway through the season.

Exemptions, Fee Waivers, Fee Reductions

24. Government organizations are exempt from the agreement fees imposed by this By-law.

25. The Optimist Club of Puslinch is exempt from the photocopy fees imposed by this By-law for **Township** Clean-up and Remembrance Day.

26. The following events are exempt from the rental fees imposed by this By-law:

    a. Fall Fair
    b. Santa Claus Parade
    c. Canada Day
    d. Family Day

e. Remembrance Day

27. The Winter Classic Tournament held during the Family Day Long Weekend is exempt from the payment of rental fees with the exception of part-time staffing **costs** including bartenders.

28. The following requests are not eligible for a fee reduction or waiver:

    a. Religious services
    b. Licences, development charges, cash in lieu of parkland, building permits, inspections, insurance, personnel costs

29. Eligible organizations can obtain one complimentary two-hour room rental for one meeting during non-prime times in the Meeting Room.

30. Usage of **Township** property must comply with the **Township**'s requirements including necessary insurance, permits and approvals within the required timelines.

31. Reduced rates are not offered during prime-time for facilities or parks that have a prime-time and non-prime time rate.

32. A 75% reduced rate shall apply to organizations that meet the eligibility criteria.

33. A 90% reduced rate shall apply to Seniors' Events or Programs.

34. A 90% reduced rate shall apply to Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).

Reduced Rate Eligibility Criteria

35. Organizations applying for a reduced rate must meet the following eligibility criteria:

    a. Be in existence for at least one year; and
    b. have its principal address in the **Township**; and
    c. be a not-for-profit organization or an unincorporated community group; and
    d. offer services that benefit the **Township** and its residents; and
    e. be in good financial standing with the **Township** and not in litigation with the **Township**; and
    f. be in compliance with any other **Township** by-laws and policies.

For the purposes of this By-law, Puslinch Minor Sports Organizations, Puslinch Religious Organizations, Guelph Community Health Centre (The Playgroup), YMCA/YWCA of Guelph, and the Aberfoyle Agricultural Society are deemed to meet the eligibility criteria.

36. For the purposes of this By-law, services that benefit the **Township** and its residents include:

    a. Charitable community services
    b. Artistic endeavours, including literature, dance, music, theatre, painting, sculpture, movies, photography and live performances
    c. Specific cultural and heritage activities
    d. Programs that improve the health and well-being of the community
    e. Programs that encourage participation in organized athletic activities
    f. Services or events directed for youth and older adults
    g. Public safety enhancement services

37. The following organizations are not eligible for a reduced rate:

    a. Adult sports organizations ie. Old Timers, Puslinch Kodiak's, Morriston Men's League, The Aberfoyle Dukes.
    b. County, Provincial and Federal organizations.

c. Groups or organizations affiliated with any political party or event.
d. Individuals, commercial organizations, and coalitions such as ratepayer associations.
e. Hospitals, hospital foundations and hospital auxiliary groups or agencies.
f. Educational institutions including universities, colleges, schools and associated auxiliary groups.

38. The following information will be required to review an organization's eligibility:

    a. A copy of the letters patent or articles of incorporation, if applicable.
    b. A copy of its Notification of Charitable Registration letter from the Canada Revenue Agency with any supporting documentation indicating the organization's status and terms of registration, if applicable.
    c. A copy of mandate, constitution and by-laws, as applicable.

39. Should any part of this By-law including any part of the schedules, be determined by a Court of competent jurisdiction to be invalid or of no force and effect, such invalid part of the By-law shall be severable and that the remainder of this By-law including the remainder of the Schedules, as applicable, shall continue to operate and to be in force and effect.

40. This By-law shall be known as the "User Fees and Charges By-law".

41. That By-law No. 056/18 is hereby repealed, effective January 1, 2020.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 4th DAY OF DECEMBER 2019.

_____
James Seeley, Mayor

_____
Patrick Moyle, CAO/Clerk

SCHEDULE A: ADMINISTRATION REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Agreements - Major - Not Registered	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. a lease agreement on Township lands.
Agreements - Minor - Not Registered	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. miscellaneous agreements.
Agreements - Registered	Flat Fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. an encroachment agreement or a conditional building permit.
Freedom of Information	Charged at the rate permitted per the legislation.						E	Regulated by Statute - See Report FIN-2017-024.
Signature of Commissioner	Per Document	$20.00	**$20.40**	$2.65	$23.05	2%	T	

SCHEDULE B: FINANCE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES Schedule B to Report FIN-2019-034
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
NSF Cheque	Per NSF	$40.00	**$40.00**	$0.00	$40.00	0%	E	
Tax Certificate	Per Certificate	$60.00	**$60.00**	$0.00	$60.00	0%	E	
Tax Sale Charges		Actual costs incurred	**Actual costs incurred**			0%	T	Cost recovery of fees and disbursements as charged by consultants and solicitors.
Tender Fees	Per Package	$40.00	**$40.80**	$0.00	$40.80	2%	E	Tender fees applicable for projects administered by the Township's consultants.
Service Fee - Debit Card Transactions - Online	Total Transaction Amount	0.75 Percent	**0.75 Percent**			0%	E	In accordance with Visa and Mastercard merchant rules.
Service Fee - Credit Card Transactions - Online	Total Transaction Amount	1.75 Percent	**1.75 Percent**			0%	E	In accordance with Visa and Mastercard merchant rules.
Tile Drainage Loan Application and Inspection Fee	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	See Report FIN-2018-028

SCHEDULE C: CORPORATE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Canadian Flag	Per Flag	$22.12	**N/A**					See Report FIN-2019-027
Photocopy	Per Page	$0.25	**$0.26**	$0.03	$0.29	4%	T	Photocopy fees are exempt for Township Clean-up and Remembrance Day in accordance with Council Resolution No. 2017-363.
Township Flag	Per Flag	$44.25	**N/A**					See Report FIN-2019-027

SCHEDULE D: PUBLIC WORKS REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Entrance Permit - Commercial/Industrial	Flat Fee	**See below**	**$400.00**	$0.00	$400.00	67%		See Report FIN-2019-027
Entrance Permit - Farm Field	Flat Fee	**See below**	**$200.00**	$0.00	$200.00	-17%		See Report FIN-2019-027
Entrance Permit - Residential	Flat Fee	$235.00	**$240.00**	$0.00	$240.00	2%	E	See Report FIN-2019-027
Oversize-Overweight Load Permits	Per Trip	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Third Party Cost Recovery	Actual costs incurred + $100.00 administration fee						T	Material, equipment, labour/benefits, and administration costs.

SCHEDULE E: FIRE AND RESCUE SERVICES REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Boarding or Barricading Plus Materials	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Fee is in accordance with the Standard MTO Rate.
Burning Permit Violations or Unauthorized Open Air Burning	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Emergency responses to illegal burning or burning without a permit. Fee is in accordance with the Standard MTO Rate.
Carbon Monoxide Alarms	Per Alarm	N/A	**$19.75**	$2.57	$22.32	100%	T	See Report FIN-2019-027
Daycare & Home Daycare Inspections	Per Inspection	$100.00	**$102.00**	$13.26	$115.26	2%	T	As mandated in the Fire Code.
Emergency Responses to Incidents such as Collisions/Fires/Hazardous Material Releases on Roadways	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Township residents are exempt from payment of fee for emergency responses where emergency occurs on a Township of Puslinch or County of Wellington Road. Fee is in accordance with the Standard MTO Rate.
Fire Alarm False Alarm Calls	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	A false alarm call after the second false alarm in any calendar year. Fee is in accordance with the Standard MTO Rate.
Fire Extinguisher Training	Per Person	$15.00	**$15.30**	$1.99	$17.29	2%	T	
Fire Safety Plan Review	Per Plan	$120.00	**$122.00**	$15.86	$137.86	2%	T	
Industrial/Commercial/Institutional/Assembly/Apartment	Base Inspection	$100.00	**$102.00**	$13.26	$115.26	2%	T	Any inspections completed by the fire department that are new, complaint driven, requested or mandated.
Industrial/Commercial/Institutional/Assembly/Apartment	Plus each tenant/occupant/ apartment unit	$25.00	**$25.50**	$3.32	$28.82	2%	T	Any inspections completed by the fire department that are new, complaint driven, requested or mandated.
Information or Fire Reports	Per Report	$75.00	**$76.50**	$0.00	$76.50	2%	E	Requested for emergency incidents.
Key Boxes	Per Box	$100.00	**$102.00**	$13.26	$115.26	2%	T	For rapid entry for firefighters.
Occupancy Load	Flat Fee	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Open Air Burning Permit Inspection Fee	Per Inspection	$40.00	**$40.80**	$5.30	$46.10	2%	T	As a result of a request to modify the terms and conditions of the Open Air Burning Permit.
Open Air Burning Permit	Per Permit	$20.00	**$20.40**	$0.00	$20.40	2%	E	Permit must be renewed annually.
Post Fire Watch	Per Hour per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Fee is in accordance with the Standard MTO Rate.

SCHEDULE E: FIRE AND RESCUE SERVICES REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Replacement of Equipment and Resources Used	Actual costs incurred	Actual costs incurred	**Actual costs incurred**			0%	T	Materials used in emergency responses.
Fire Department Specific Response Fees			**Note 1**			100%	T	FIR-2019-010
Sale of Fireworks Permit	Per Permit	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Setting Off or Discharge of High Hazard Fireworks Permit	Per Permit	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Smoke Alarms	Per Alarm	N/A	**$7.30**	$0.95	$8.25	100%	T	See Report FIN-2019-027
Water Tank Locks	Per Lock	$17.80	**$18.16**	$2.36	$20.52	2%	T	For locking water tank lids closed.
Special Events	No fee at this time							Requests for Attendance.
Authorized Requester Agreement - Search Fee	No fee at this time							Standard information product per record search fee - See Report FIN-2017-024.

Note 1: Fire Department Specific Response Fees

Fire department specific response fees shall be the total of:

a. Current MTO* rate per unit per hour or portion thereof for each unit
b. rate per person per hour or portion thereof for each firefighter
c. other costs including but not limited to: foam, metered water, and any other consumable supplies. Air tank re-filling, cleaning equipment, DSPA or similar type units, cost to replace damaged or destroyed equipment, specialized response costs from automatic/mutual aid agreements, fire protection agreements, water bomber drops, etc.

* The MTO rate per unit per hour is set by the Ministry of Transportation. This rate is adjusted periodically in accordance with the consumer price index.

Such fees shall be charged and calculated on the basis of each **fire department** vehicle attending, resources consumed in attendance to the **property** incident. The time shall be measured from the time of departure of each unit from the **fire department**'s facilities to the time the unit is cleared for the next call out.

SCHEDULE F: BUILDING REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

Schedule B to Report FIN-2019-034

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Minimum Permit Fee	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	For all work unless otherwise noted
NEW BUILDING, ADDITIONS, MEZZANINES								
Group A & B: Assembly & Care and Detention Buildings								
Shell	Per Sq. Foot	$2.40	**$2.45**	$0.00	$2.45	2%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$2.71	**$2.77**	$0.00	$2.77	2%	E	See Report FIN-2017-024
Group C: Residential Buildings								
Houses, Townhouses, and Apartments	Per Sq. Foot	$1.92	**$1.97**	$0.00	$1.97	2%	E	
Manufactured Home	Per Sq. Foot	$1.46	**$1.49**	$0.00	$1.49	2%	E	
Garage/carport/shed/boathouse	Per Sq. Foot	$0.78	**$0.79**	$0.00	$0.79	1%	E	See Report FIN-2018-028
Deck, porch, dock	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Group D & E: Business and Personal Service and Mercantile Buildings								
Shell	Per Sq. Foot	$1.85	**$1.89**	$0.00	$1.89	2%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$2.15	**$2.20**	$0.00	$2.20	2%	E	See Report FIN-2017-024
Group F: Industrial Buildings								
Shell	Per Sq. Foot	$0.75	**$0.76**	$0.00	$0.76	1%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$0.95	**$0.97**	$0.00	$0.97	2%	E	See Report FIN-2017-024
Farm Buildings								
New Building	Per Sq. Foot	$0.30	**$0.31**	$0.00	$0.31	3%	E	See Report FIN-2017-024
INTERIOR FINISHES AND ALTERATIONS - ALL CLASSIFICATIONS								
Finishes to all areas	Per Sq. Foot	$0.52	**$0.53**	$0.00	$0.53	2%	E	
SEWAGE SYSTEMS								
New Installation	Flat Fee	$624.00	**$636.00**	$0.00	$636.00	2%	E	
Replacement or alteration	Flat Fee	$468.00	**$477.00**	$0.00	$477.00	2%	E	
ALTERNATIVE SOLUTIONS								
All buildings/systems within scope of Part 9	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	See Report FIN-2017-024
All buildings/systems within scope of Part 3	Flat Fee	$1,000.00	**$1,020.00**	$0.00	$1,020.00	2%	E	See Report FIN-2017-024
SPECIAL CATEGORIES AND MISCELLANEOUS								
Change of Use Permit (No Construction)	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	See Report FIN-2017-024
Construction prior to issuance of a permit	100% of permit fee	100% of permit fee	**100% of permit fee**			0%	E	Fee is in addition to all other required permit fees.
Conditional Permits	20% of permit fee	20% of permit fee	**20% of permit fee**			0%	E	Fee is in addition to all other required permit fees.
Demolition Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Designated Structure Permit	Flat Fee	$416.00	**$424.00**	$0.00	$424.00	2%	E	Listed per Div.A, 1.3.1.1 Solar installation
Fireplace/Woodstove	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	

SCHEDULE F: BUILDING REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

Schedule B to Report FIN-2019-034

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Inspection of works not ready	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	At the discretion of the Chief Building Official. Includes code violations and deficiencies.
Occupancy Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Occupancy without an Occupancy Permit	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	At the discretion of the Chief Building Official. This fee is not imposed as it relates to the current initiative of closing old open building permits as approved by Council in the 2018 Budget.
Portables	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	
Reproduction of Drawings	Flat Fee	$50.00	**$51.00**	$6.63	$57.63	2%	T	Current rate covers costs for the reproduction of black and white drawings.
Revision to Approved Plans	Flat Fee	$312.00	**$318.00**	$0.00	$318.00	2%	E	Before or after a permit is issued - significant changes to approved plans requiring further review. Minor revisions which result in no fee include eliminating a closet, finishing a three-piece bathroom, cosmetic changes, layout changes, removing non-load bearing walls, etc.
Sign Permits	Flat Fee	$260.00	**$265.00**	$0.00	$265.00	2%	E	With building permit
Storefront replacement	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	
Tents	Flat Fee	$260.00	**$213.00**	$0.00	$213.00	-18%	E	Tents and air-supported structures shall be in conformance with the Building Code and Section 2.9 of the Fire Code. Report FIN-2019-031
Transfer of Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	

INTERPRETATION

The following requirements are to be applied in the calculation of permit fees:

- Floor area of the proposed work is to be measured to the outer face of exterior walls and to the centre line of party walls or demising walls.
- Unfinished loft space, habitable attics, mezzanines and interior balconies are to be included in all floor area calculations.
- Unfinished basement space and attached residential garages are not included in floor area calculations.
- The occupancy categories in this Schedule correspond with the major occupancy classifications in the Ontario Building Code. For multiple occupancy floor areas, the permit fees for each of the applicable occupancy categories may be used.
- In the case of interior alterations or renovations, area of proposed work is the actual space receiving the work, e.g. tenant suite.
- Additional permit fees are not required for an attached deck to a residential dwelling, when the deck is shown on the approved residential building plans.
- For classes of permits not described in this Schedule, a reasonable permit fee shall be determined by the Chief Building Official.

SCHEDULE G: PLANNING AND DEVELOPMENT REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Agreements - Minor - Not Registered	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. maintenance and operations agreement
Agreements - Registered	Flat Fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. permission to have a second dwelling while another is being built, an amendment to a site plan or subdivision or condominium agreement. Excludes new site plan, subdivision or condominium agreements.
Compliance Letter	Flat Fee	$75.00	**$76.50**	$0.00	$76.50	2%	E	Fee charged is consistent for all Township departments.
Consent Review and Condition Clearance	Flat Fee	$134.00	**$137.00**	$0.00	$137.00	2%	E	
Garden Suites and Renewals (Zoning)	Flat Fee	N/A	**$1,200.00**	$0.00	$1,200.00	100%	E	Report FIN-2019-034
Lifting of Holding Designation (Zoning)	Flat Fee	$586.00	**$598.00**	$0.00	$598.00	2%	E	
Minor Variance - Type 1	Flat Fee	$706.00	**$721.00**	$0.00	$721.00	2%	E	Note 3
Minor Variance - Type 2	Flat Fee	N/A	**$1,221.00**	$0.00	$1,221.00	100%	E	Note 4
Ownership List Confirmation	Flat Fee	N/A	**$70.00**	$0.00	$70.00	100%	E	See Report FIN-2019-027
Part Lot Control Exemption By-law	Flat Fee	$585.00	**$597.00**	$0.00	$597.00	2%	E	
Plan of Subdivision or Condominium Agreement or Pre-Servicing Agreement *	Administration fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements.
Pre-Consultation Fee	Flat Fee	N/A	**$615.00**	$0.00	$615.00	100%	E	This fee will be credited from the future application fee (ie. when a formal complete application is submitted) for a Zoning By-law Amendment, Site Plan, or Plan of Subdivision or Condominium.
Site Plan Application and Agreement - Minor	Flat Fee	$10,850.00	**$11,067.00**	$0.00	$11,067.00	2%	E	Note 1
Site Plan Application and Agreement - Standard	Flat Fee	$20,600.00	**$21,012.00**	$0.00	$21,012.00	2%	E	Note 2
Telecommunication Tower Proposals	Flat Fee	$532.00	**$2,293.00**	$0.00	$2,293.00	331%	E	Report FIN-2019-031 Township Administration Fee - $543 Canadian Radiocommunications Information and Notification Services - $1,750
Zoning By-law - Copy	Flat Fee	$40.00	**$40.80**	$5.30	$46.10	2%	T	
Zoning By-Law Amendment - Aggregate *	Administration fee	$15,000.00	**$15,300.00**	$0.00	$15,300.00	2%	E	
Zoning By-Law Amendment - Minor	Flat Fee	$5,000.00	**N//A - see below**			0%	E	
Zoning By-Law Amendment - Standard	Flat Fee	$11,200.00	**N//A - see below**			0%	E	

SCHEDULE G: PLANNING AND DEVELOPMENT REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Zoning By-Law Amendment	Flat Fee	N/A	**$14,842.00**	$0.00	$14,842.00	100%	E	Report FIN-2019-034

INTERPRETATION

* the fees denoted with an asterisk are also subject to the Township's disbursements and third party consultant fees incurred for the processing of the application.

Note 1: Minor Site Plan
A Minor Site Plan may include, but is not limited, to the following:

- Site works associated with the change of use of an existing building;
- Parking lot modifications, outdoor patios, landscape works and the placement of accessory buildings and structures;
- Minor revisions or building additions to existing commercial, industrial or residential developments

Township staff have the discretion to determine whether a site plan application is classified as minor.

Note 2: Standard Site Plan
A Standard Site Plan may include, but is not limited, to the following:

- Requirement of technical studies (ie. storm water management, geotechnical, hydrological, environmental impact assessment, etc.)
- Relates to a new development or major additions/alterations to an existing development or site design

Note 3: Minor Variance - Type 1
Any minor variance application to permit any of the following on residential properties:

- Lot line setbacks for single family dwellings and accessory structures
- Height variances for single family dwellings and accessory structures
- Maximum size of accessory structure variances
- Maximum size of accessory unit variances

Note 4: Minor Variance - Type 2
All other minor variance applications not listed under Type 1.

Refund of Application Fees
In the case of a withdrawal or abandonment of an application, staff shall determine the amount of paid fees that may be refunded to the applicant, if any, in accordance with the following:
a.) 80 percent (80%) if administrative functions have only been performed;
b.) 70 percent (70%) if administrative and zoning functions have only been performed;
c.) 45 percent (45%) if administrative, zoning, and a completed application has been circulated with comments;
d.) 35 percent (35%) if application has been sent for second submission and comments have been received;
e.) no refund shall be made if the application has been approved by Committee and/or Council

SCHEDULE H: BY-LAW REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES Schedule B to Report FIN-2019-034
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Dog Tags	Per Tag	$25.00	**$25.50**	$0.00	$25.50	2%	E	Maximum of 3 dogs
Fence Viewer's Application	Per Application	$300.00	**$306.00**	$0.00	$306.00	2%	E	
Filming Permit Fee	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	Filming of special events on Township lands/roads.
Kennel Licence	Per Licence	$187.00	**$190.00**	$0.00	$190.00	2%	E	More than 3 dogs
Liquor License Letter	Per Inspection	$156.00	**$159.00**	$0.00	$159.00	2%	E	Requested or required inspection of licensed sales establishments (as defined by the Liquor Licence Establishment Board of Ontario) that requires an inspection and/or a letter.
Lottery Licence	3% of prize value	3% of prize value	**3% of prize value**	$0.00	3% of prize value	0%	E	Fee regulated by AGCO (Nevada, Raffle, Bazaar, etc.).
Municipal Addressing Sign	Flat Fee	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Municipal Addressing Post	Flat Fee	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Property Standards Appeal Fee	Flat Fee	$0.00	**$260.00**	$0.00	$260.00	100%	E	Report FIN-2019-031
Septic Compliance Letter	Flat Fee	$75.00	**$76.50**	$0.00	$76.50	2%	E	Fee charged is consistent for all Township departments.
Sign Permits	Flat Fee	$100.00	**$102.00**	$0.00	$102.00	2%	E	Without building permit.
Site Alteration Permit Application *	Administration fee	$1,800 plus $75 per hectare (rounded to the greater whole aggregate).	**$1,800 plus $75 per hectare (rounded to the greater whole aggregate).**	$0.00	$1,800 plus $75 per hectare (rounded to the greater whole aggregate).	0%	E	
Site Alteration Permit Service Fee	Per m^3	$0.06	**$0.06**	$0.00	$0.06	0%	E	Paid at time of application.
Special Occasion Permit	Per Letter	$75.00	**$76.50**	$0.00	$76.50	2%	E	
Swimming Pool Enclosure Permit	Flat Fee	$215.00	**$219.00**	$0.00	$219.00	2%	E	

* the fees denoted with an asterisk are also subject to the Township's disbursements and third party consultant fees incurred for the processing of the application.

SCHEDULE I: PARKS REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Ball Diamonds - No Lights	Per Hour	$20.85	**$21.27**	$2.77	$24.04	2%	T	
75% Reduced Rate - Ball Diamonds - No Lights	Per Hour	$5.20	**$5.31**	$0.69	$6.00	2%	T	
Ball Diamonds - Lights	Per Hour	$31.25	**$31.88**	$4.14	$36.02	2%	T	after 8:30 p.m.
75% Reduced Rate - Ball Diamonds - Lights	Per Hour	$7.80	**$7.96**	$1.03	$8.99	2%	T	after 8:30 p.m.
All Ball Diamonds	Per Day	$156.35	**$159.48**	$20.73	$180.21	2%	T	
75% Reduced Rate - All Ball Diamonds	Per Day	$39.10	**$39.88**	$5.18	$45.06	2%	T	
Ball Diamonds - Dragging	Per Occurrence	$40.00	**$40.80**	$5.30	$46.10	2%	T	Upon request and approval - June 15, 2016 Special Council Meeting.
Soccer Field	Per Hour	$26.55	**$27.09**	$3.52	$30.61	2%	T	Development of a fee - Report FIN-2017-012
75% Reduced Rate - Soccer Field	Per Hour	$6.65	**$6.79**	$0.88	$7.67	2%		
Soccer Field	Per Day	$269.80	**$275.20**	$35.78	$310.98	2%	T	Development of a fee - Report FIN-2017-012
75% Reduced Rate - Soccer Field	Per Day	$67.45	**$68.80**	$8.94	$77.74	2%		
Ball Diamond Advertising	Per Season	$175.00	**$178.50**	$23.21	$201.71	2%	T	Available from May to October
75% Reduced Rate - Ball Diamond Advertising	Per Season	$43.75	**$44.63**	$5.80	$50.43	2%	T	
Horse Paddock	Per Day	$200.00	**$204.00**	$26.52	$230.52	2%	T	Rental restricted to horse paddock and tractor pull area.
75% Reduced Rate - Horse Paddock	Per Day	$50.00	**$51.00**	$6.63	$57.63	2%	T	
Picnic Shelter	Per Hour	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Picnic Shelter	Per Day	$80.00	**$81.60**	$10.61	$92.21	2%	T	
Sports Facility User Fees - Tennis	Per Resident	$10.00	**$10.00**	$0.00	$10.00	0%	E	Staff to bring forward a use/cost sharing agreement with the Puslinch Tennis Club in 2019.
Sports Facility User Fees - Tennis	Per Non-Resident	$25.00	**$25.00**	$0.00	$25.00	0%	E	Staff to bring forward a use/cost sharing agreement with the Puslinch Tennis Club in 2019.
Fireworks Security Deposit	Per Display	$500.00	**$500.00**	$0.00	$500.00	0%	E	Clean up of Township lands after fireworks display.
Baseball Equipment and Lights Security Deposit	Per Season	$50.00	**$50.00**	$0.00	$50.00	0%	E	Lights key provided to ball diamond rentals with light use. Equipment key provided to leagues with a minimum of an eight week rental commitment.
Picnic Shelter Washroom Key Security Deposit	Per Rental	$50.00	**$50.00**	$0.00	$50.00	0%	E	
Horse Paddock Security Deposit	Per Rental	$300.00	**$300.00**	$0.00	$300.00	0%	E	
Note 1: Booking availability of Township fields are dependent on field conditions.								

SCHEDULE J: OPTIMIST RECREATION CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Arena Floor	Per Hour	$67.45	**$68.81**	$8.95	$77.76	2%	T	Includes use of change rooms
75% Reduced Rate - Arena Floor	Per Hour	$16.85	**$17.20**	$2.24	$19.44	2%	T	
Ice - Non - Prime	Per Hour	$56.20	**$57.33**	$7.45	$64.78	2%	T	
75% Reduced Rate - Ice - Non-Prime	Per Hour	$14.05	**$14.34**	$1.86	$16.20	2%	T	
Ice - Prime	Per Hour	$161.50	**$164.73**	$21.41	$186.14	2%	T	
Gymnasium	Per Hour	$30.65	**$31.27**	$4.07	$35.34	2%	T	
75% Reduced Rate - Gymnasium	Per Hour	$7.65	**$7.81**	$1.02	$8.83	2%	T	
90% Reduced Rate - Gymnasium	Per Hour	$3.05	**$3.11**	$0.40	$3.51	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Rink Board Advertising	Per Year	$350.00	**$357.00**	$46.41	$403.41	2%	T	
75% Reduced Rate - Rink Board Advertising	Per Year	$87.50	**$89.25**	$11.60	$100.85	2%	T	

Note 1:

- Ice - Non-Prime: Weekdays from 9:00 am to 5:00 pm
- Ice - Prime: Weekdays from 5:00 pm to 10:00 pm, Saturdays, Sundays

SCHEDULE K: PUSLINCH COMMUNITY CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Meeting Room	Per Hour	$26.05	**$26.58**	$3.46	$30.04	2%	T	
75% Reduced Rate - Meeting Room	Per Hour	$6.50	**$6.64**	$0.86	$7.50	2%	T	
90% Reduced Rate - Meeting Room	Per Hour	$2.60	**$2.65**	$0.34	$2.99	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Per Hour	$55.95	**$57.08**	$7.42	$64.50	2%	T	Minimum of a 3 hour booking required.
75% Reduced Rate - Hall - Non-Prime	Per Hour	$14.00	**$14.28**	$1.86	$16.14	2%	T	Minimum of a 3 hour booking required.
90% Reduced Rate - Hall - Non-Prime	Per Hour	$5.60	**$5.71**	$0.74	$6.45	2%	T	Minimum of a 3 hour booking required. Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Full Day Rental	$380.20	**$387.81**	$50.42	$438.23	2%	T	
75% Reduced Rate - Hall - Non-Prime	Full Day Rental	$95.05	**$96.96**	$12.60	$109.56	2%	T	
90% Reduced Rate - Hall - Non-Prime	Full Day Rental	$38.00	**$38.77**	$5.04	$43.81	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Prime	Full Day Rental	$498.75	**$508.73**	$66.13	$574.86	2%	T	
Commercial Rental	Surcharge	$781.85	**25% Surcharge**				T	Example - Auctions, Sale of Merchandise See Report FIN-2019-031
Non Resident Rental	Surcharge	N/A	**25% Surcharge**				T	See Report FIN-2019-031
Hall - Set-up Fee	Per Hour	$55.95	**$57.08**	$7.42	$64.50	2%	T	Set-up is after 5:00 p.m. on Friday only and must include a Saturday rental. This service is only available if the hall is not booked 7 days prior to the event date.
Use of Kitchen Facilities - Non Prime	Per Hour	$27.35	**$27.90**	$3.63	$31.53	2%	T	Minimum of a 3 hour booking required.
Licenced Events Using Patio	Flat Rate	$57.25	**$58.40**	$7.59	$65.99	2%	T	Patio Fencing
Microphone	Flat Rate	$25.00	**$25.50**	$3.32	$28.82	2%	T	See Report FIN-2018-030
Projector	Flat Rate	$25.00	**$25.50**	$3.32	$28.82	2%	T	See Report FIN-2016-029
Facility Rental Security Deposit	Per Booking	$365.00	**$365.00**	$0.00	$365.00	0%	E	Deposit is fully refundable after function if there are no damages and key is returned.
Bartenders	Per Bartender	$130.00	**$132.60**	$17.24	$149.84	2%	T	Smart Serve Certified
Electronic Sign Advertising	Per Week	$33.35	**$34.02**	$4.42	$38.44	2%	T	No charge for Puslinch Community Centre rentals.
75% Reduced Rate - Electronic Sign Advertising	Per Week	$8.35	**$8.52**	$1.11	$9.63	2%	T	
90% Reduced Rate - Electronic Sign Advertising	Per Week	$3.33	**$3.41**	$0.44	$3.85	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).

Note 1: Hall rentals include the use of the kitchen facility (dishes, silverware, cooking utensils, dishwasher, coffee maker, etc. included)

Note 2: **Hall - Non-Prime:** Monday to Thursday and Sunday Rentals; **Hall - Prime:** Friday and Saturday

ZONING BY-LAW AMENDMENT to By-law 19/85

for

Farhi Holdings Corporation
CON 2 PT LOT 26, PUSLINCH

Township Rezoning Application D14/FAR

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 2019-067

A BY-LAW TO AMEND BY-LAW NUMBER 19/85, AS AMENDED, BEING THE ZONING BY-LAW OF THE TOWNSHIP OF PUSLINCH

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-Law Number 19/85 pursuant to Sections 34 and 36, of the *Planning Act*, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ENACTS AS FOLLOWS:

1. That Schedule "A" of By-law 19/85 is hereby amended by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND-12) ZONE** subject to **HOLDING ZONE PROVISIONS (h-10)** and **NATURAL ENVIRONMENT (NE) ZONE**, as shown on schedule "A" of this By-law.

2. That subsection 15(4) SPECIAL PROVISIONS of the Industrial Zone is amended by adding the following site specific provision:

"(l) **IND-12 (Farhi Holdings Corporation)**
Con 2 PT LT 26

Notwithstanding Section 15(2) of this by-law, within the lands zoned IND-12 on Schedule "A" hereto, the following provisions shall apply:

(i) **Permitted Use**

(a) Business or professional office
(b) Catering establishment
(c) Equipment rental establishment
(d) Factory outlet
(e) Feed mill
(f) Grain storing, weighing and drying operation
(g) Industrial equipment rental establishment
(h) Industrial use
(i) Public use
(j) Retail lumber and building supply
(k) Restaurant
(l) Service trade
(m) Service or repair establishment
(n) Warehouse
(o) Public indoor storage facility
(p) Garden centre
(q) Farmers market
(r) Agricultural service and supply establishment
(s) Ancillary retail, showroom, administrative office, and other uses, buildings and structures to an above listed permitted use

(ii) **Prohibited Uses**

(a) Outdoor and/or open storage;
(b) Uses obnoxious by way of noise, odour, dust, debris, effluent.

(iii) **Zone Requirements**

Notwithstanding the Zone Requirements of Section 15(3), the following shall also be applicable:

(a) Setbacks:
    i) All buildings, structures, septic systems, storm water management facilities, parking and driveway aisle shall be setback a minimum of 14 metres from the south property line.
    ii) All wells shall be setback a minimum of 30 metres from the south property line.

iii) Development and site alteration shall maintain a minimum 30 metre setback from the wetland and significant woodlands located at the north end of the property.

(iv) **Additional Zone Requirements**

(a) All permitted uses are required to be 'dry' uses. For the purpose of this by-law, 'dry' is defined as:

No water or sewage disposal requirements, that would trigger the need for a permit to take water and/or Environmental Compliance Approval, are necessary for a permitted use, including but not limited to associated manufacturing, processing, fabrication, repair, and packaging.

(b) A freestanding office building shall be less than 4000 m^2 in floor area.

(v) **Site Plan Control**

(a) Development of the subject lands shall be subject to site plan control as per Section 41 of the *Planning Act.*

3. That unless otherwise provided, the subject land as shown on Schedule "A" to this By-Law shall be subject to all applicable regulations of Zoning By-Law 19/85, as amended.

4. That Section 4(6) HOLDING ZONES - 'h' of the by-law be amended to apply holding provision 'h-10' on the subject lands and by adding the following:

(j) **HOLDING ZONE PROVISIONS (Farhi Holdings Corporation)**
Con 2 PT LT 26

(i) **Purpose of 'h-10'**
The purpose of this holding provision is to ensure that the following items have been addressed, once a use is known:

i. An updated Traffic Impact Study is submitted to the satisfaction of the Township and County;
ii. An updated Environmental Impact Study is submitted to the satisfaction of the Township;
iii. An updated Storm water Management Report is submitted to the satisfaction of the Township;
iv. As part of the site plan review process the Township and property owner will consider an alternative access/easement on the subject lands in favour of the Slovenski Park;
v. That Grand River Conservation Authority approval has been obtained and permits have been issued;
vi. That Ministry of Transportation approval has been obtained and permits have been issued;
vii. That a Stage 2 Archaeological Assessment in relation to the natural features on site has been completed and accepted by the Ministry of Tourism, Culture and Sport; and
viii. Site plan approval has been completed and the site plan agreement has been registered on title;

(ii) At such time in the future that the Council of the Township of Puslinch is satisfied that the requirements in (j)(i) and any other requirements deemed necessary have been addressed, Council may remove the holding symbol 'h-10' by amendment subject to the requirements of Section 36 of the Planning Act, R.S.O. 1990, as amended.

(iii) Until the holding symbol 'h-10' is removed, no use, buildings or structures shall be permitted."

5. That this By-law shall be deemed to conform with the County Official Plan on and after the day the by-law is passed; and

6. That this By-law shall become effective from the date of passage of an associated Official Plan Amendment by County Council and shall be deemed to not be passed if the amendment to the County Official Plan does not come into effect.

READ A FIRST AND SECOND TIME THIS _____ OF _____, 2019.

_____ _____
MAYOR CLERK

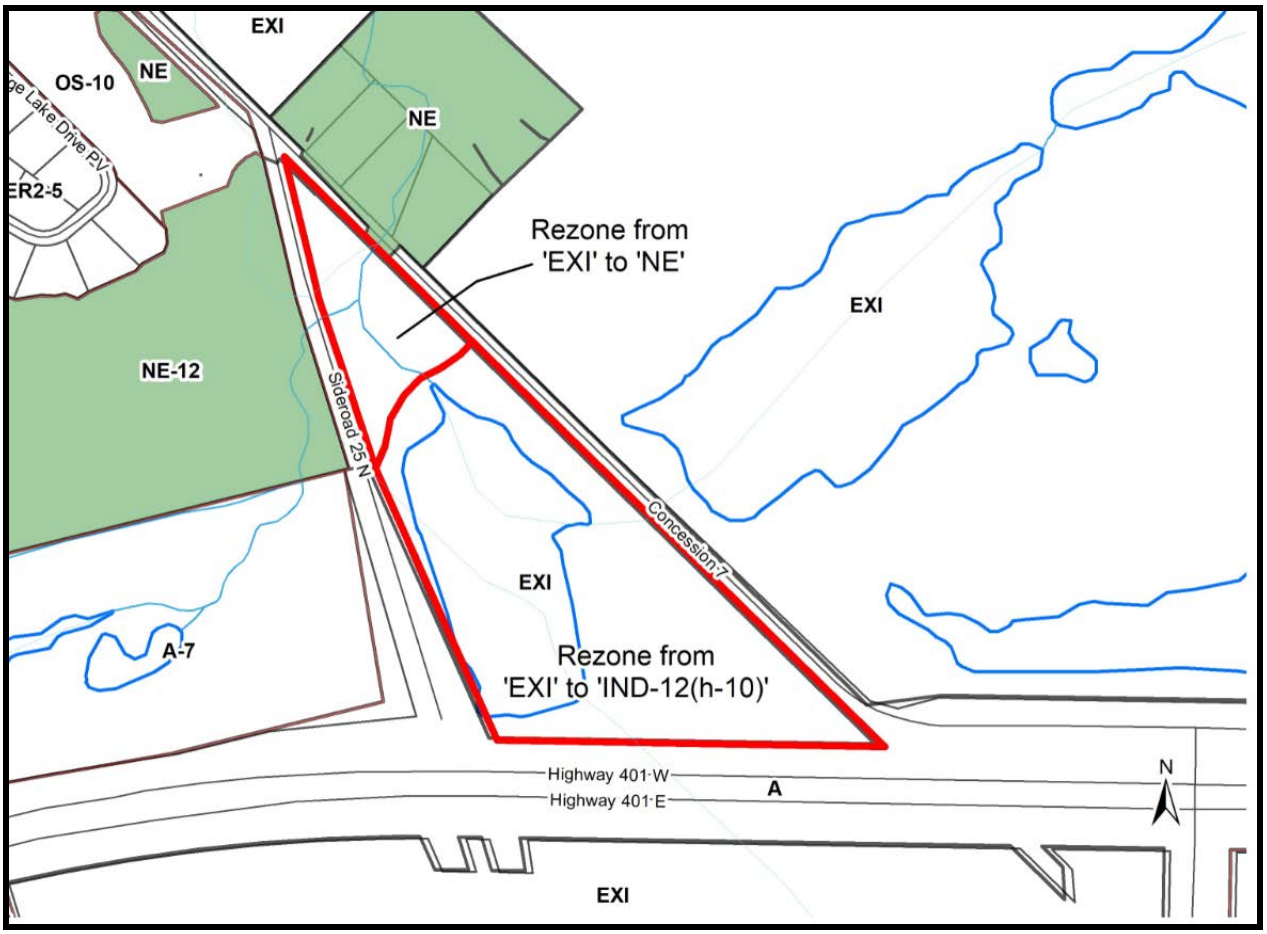
READ A THIRD TIME AND PASSED THIS _____ OF _____, 2019.

_____ _____
MAYOR CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 2019-067

Schedule "A"



Highlighted area to be rezoned from "EXI" Zone to a site specific **"IND-12" Zone**, subject to a holding provision **"h-10"**, and **"NE" Zone.**

This is Schedule "A" to By-law No. 2019-067
Passed this ____ day of _____, 2019.

_____
MAYOR

_____
CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

EXPLANATION OF BY-LAW NO. 2019-067

By-law Number 2019-067 amends the Township of Puslinch Zoning By-law 19/85 by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND-12) ZONE** subject to **HOLDING ZONE PROVISIONS ('h-10')** and **NATURAL ENVIRONMENT (NE) ZONE.**

The subject property is approximately 9.53 hectares (23.5 acres) in size and vacant of any structures. Access is available via Concession 7 and Sideroad 25 N, with an existing access onto Concession 7.

The purpose of the subject zoning by-law amendment is to rezone the subject lands to a scoped, site specific Industrial (IND-12) Zone that also allows some commercial uses on the subject lands. The subject amendment also establishes a prohibition of certain uses and additional zone requirements; places the subject lands within a holding provision ('h-10') to ensure technical items are addressed when a use/user is known; and limits development within the existing, natural features on the subject lands by placing a portion of the site within the Natural Environment (NE) Zone.

The subject application is also related to an amendment to the County Official Plan (amendment #110) which is to incorporate the subject lands into the Puslinch Economic Development Area by including the lands within PA7-1. Special policy area PA7-1 establishes permissions for additional after-uses for former aggregate pits.

The proposed development is subject to a holding provision and site plan control. The holding provision requires that a series of technical studies and permit issuance be addressed once a development and intended use is known. The site plan process will evaluate on-site functionality, setbacks, technical matters related to the natural features on site, grading, servicing and storm water management, design, etc. No development will take place until such time that site plan approval has been achieved and the holding provision has been removed.

ZONING BY-LAW AMENDMENT to By-law 023/18

for

Farhi Holdings Corporation
CON 2 PT LOT 26, PUSLINCH

Township Rezoning Application D14/FAR

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 2019-068

A BY-LAW TO AMEND BY-LAW NUMBER 023/18, AS AMENDED, BEING THE ZONING BY-LAW OF THE TOWNSHIP OF PUSLINCH

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-Law Number 023/18 pursuant to Sections 34 and 36 of the Planning Act, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ENACTS AS FOLLOWS:

1. That Schedule "A" of By-law 023/18 is hereby amended by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND SP92) ZONE,** subject to **HOLDING PROVISIONS (h-10),** and **NATURAL ENVIRONMENT (NE) ZONE**, as shown on Schedule "A" of this By-law.

2. That Schedule "B", "Map B-4" of By-law 023/18 is hereby amended by including the subject lands, as shown on Schedule "A" to this by-law, within the Industrial Design Overlay.

3. That Section 14 Site-Specific Special Provisions is amended by adding the following site specific provision:

No.	Parent Zone	Additional Permitted Uses	Prohibited Uses	Site Specific Special Provision
92	IND	Only the following uses shall be permitted: Business or professional office; Catering establishment; Equipment rental establishment; Factory outlet; Feed mill; Grain storing, weighing and drying operation; Industrial equipment rental establishment; Industrial use; Public use; Retail lumber and building supply; Restaurant; Service trade; Service or repair establishment; Warehouse; Public indoor storage facility; Garden centre;	Outdoor and/or open storage; Uses obnoxious by way of noise, odour, dust, debris, effluent.	All permitted uses, including ancillary uses, are required to be 'dry' uses. For the purpose of this by-law, 'dry' is defined as: No water or sewage disposal requirements, that would trigger the need for a permit to take water and/or Environmental Compliance Approval, are necessary for a permitted use, including but not limited to associated manufacturing, processing, fabrication, repair, and packaging. A freestanding office building shall be less than 4000 m^2 in floor area.

		Farmers market; Agricultural service and supply establishment; Ancillary retail, showroom, administrative office, and other uses, buildings and structures to an above listed permitted use.		

4. That unless otherwise provided, the subject land as shown on Schedule "A" to this By-Law shall be subject to all applicable regulations of Zoning By-Law 023/18, as amended.

5. That Section 15(1) HOLDING PROVISIONS of the by-law be amended to apply holding provision 'h-10' on the subject lands and by adding the following:

No.	Zone Designation	Permitted Uses	Conditions for Removal	Date Enacted
10	IND (SP92)	Until the holding symbol 'h-10' is removed, no use, buildings or structures shall be permitted.	i. An updated Traffic Impact Study is submitted to the satisfaction of the Township and County; ii. An updated Environmental Impact Study is submitted to the satisfaction of the Township; ii. An updated Storm water Management Report is submitted to the satisfaction of the Township; iv. As part of the site plan review process the Township and property owner will consider an alternative access/easement on the subject lands in favour of the Slovenski Park; v. That Grand River Conservation Authority approval has been obtained and permits have been issued; vi. That Ministry of Transportation approval has been obtained and permits have been issued; vii. That a Stage 2 Archaeological Assessment in relation to the natural features on site has been completed and accepted by the Ministry of Tourism, Culture and Sport; and viii. Site plan approval has been completed and the site plan agreement has been registered on title.	

6. That this By-law shall be deemed to conform with the County Official Plan on and after the day the by-law is passed; and

7. That this By-law shall become effective from the date of passage of an associated Official Plan Amendment by County Council and shall be deemed to not be passed if the amendment to the County Official Plan does not come into effect.

READ A FIRST AND SECOND TIME THIS _____ OF _____, 2019.

_____ _____

MAYOR CLERK

READ A THIRD TIME AND PASSED THIS _____ OF _____, 2019.

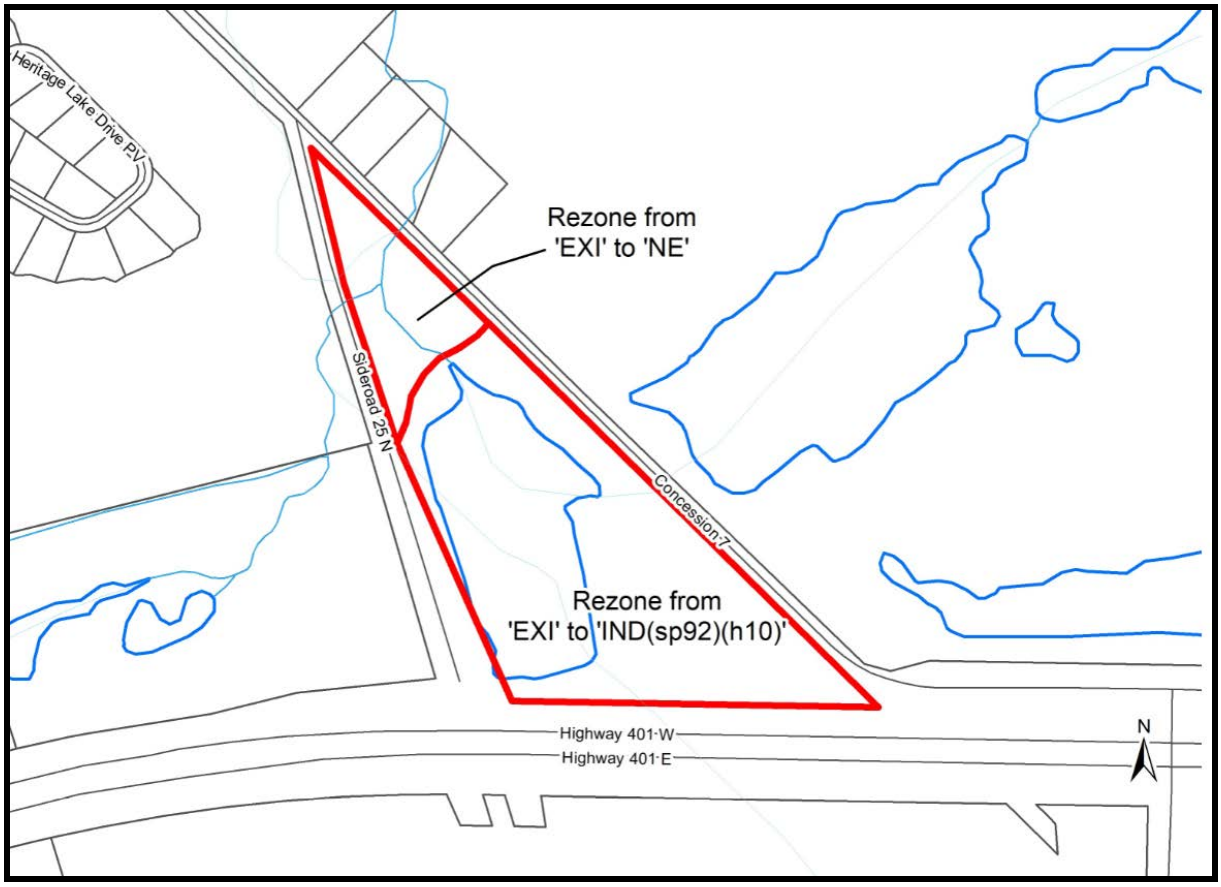
_____ _____

MAYOR CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 2019-068

Schedule "A"



Highlighted area to be rezoned from "**EXI" Zone** to a site specific **"IND (SP92)" Zone**, subject to a holding provision **(h10),** and **"NE" Zone.**

This is Schedule "A" to By-law No 2019-068
Passed this ____ day of _____, 2019.

_____
MAYOR

_____
CLERK

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

EXPLANATION OF BY-LAW NO. 2019-068

By-law Number 2019-068 amends the Township of Puslinch Zoning By-law 19/85 by rezoning CON 2 PT LOT 26, within the Township of Puslinch, and without a municipal address, from an EXTRACTIVE (EXI) Zone to a site specific **INDUSTRIAL (IND SP92) ZONE** subject to **HOLDING ZONE PROVISIONS (h-10)** and **NATURAL ENVIRONMENT (NE) ZONE.**

The subject property is approximately 9.53 hectares (23.5 acres) in size and vacant of any structures. Access is available via Concession 7 and Sideroad 25 N, with an existing access onto Concession 7.

The purpose of the subject zoning by-law amendment is to rezone the subject lands to a scoped, site specific Industrial (IND SP92) Zone that also allows some commercial uses on the subject lands. The subject amendment also establishes a prohibition of certain uses and additional zone requirements; places the subject lands within a holding provision ('h-10') to ensure technical items are addressed when a use/user is known; and limits development within the existing, natural features on the subject lands by placing a portion of the site within the Natural Environment (NE) Zone.

The subject application is also related to an amendment to the County Official Plan which is to incorporate the subject lands into the Puslinch Economic Development Area by including the lands within PA7-1. Special policy area PA7-1 establishes permissions for additional after-uses for former aggregate pits.

The proposed development is subject to a holding provision and site plan control. The holding provision requires that a series of technical studies and permit issuance be addressed once a development and intended use is known. The site plan process will evaluate on-site functionality, setbacks, technical matters related to the natural features on site, grading, servicing and storm water management, design, etc. No development will take place until such time that site plan approval has been achieved and the holding provision has been removed.

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NO 069-2019

A by-law to permit the Municipality to impose fees or charges with respect to services or activities provided, related costs payable, and for the use of its property, and to repeal By-law 056-2018.

WHEREAS Section 391(1) of the Municipal Act, 2001, S.O. 2001, c. 25, as amended, a municipality may pass By-laws imposing fees or charges for services or activities provided or done by or on behalf of it, for costs payable by it for services or activities provided or done by or on behalf of any other municipality or any local board, and for the use of its property including property under its control; and

WHEREAS Section 7(1) of the Building Code Act, 1992, S.O. 1992, c. 23, as amended, provides that a municipality may pass By-laws imposing fees and charges; and

WHEREAS Section 69 of the Planning Act, R.S.O. 1990, c.P.13, as amended provides that the Council of a municipality may by By-law establish a tariff of fees for the processing of applications made in respect of planning matters; and

WHEREAS The Council of the Corporation of the Township of Puslinch deems it appropriate to update the Township's User Fees and Charges By-law.

NOW THEREFORE the Council of the Corporation of the Township of Puslinch enacts as follows:

1. For the purpose of this By-law:

a.) **"Cost(s)"** means any and all disbursements incurred by the municipality, and includes, but is not restricted to, any registration costs, title search costs, corporate search costs, survey costs, reference plan costs, advertising costs, outside counsel fees, paralegal fees, site inspection costs and any applicable taxes;

b.) "Fire Department" means a fire department established by the Township of Puslinch in accordance with the provisions of the Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4 as amended;

c.) "Fire Department Specific Response Fees" means cost recovery fees for **fire department** attendance at a **property** for which the **property owner(s)** have **fire department** insurance coverage;

d.) Indemnification Technology® shall mean **fire department** incident reporting, data collection and **property** insurance policy wording interpretation to maximize billing opportunities on behalf of fire departments by invoicing insurance companies for costs of fire department attendance with respect to insured perils;

e.) "Property" means any real property located within the geographical boundaries of the Township of Puslinch. Real property includes buildings, contents and structures of any nature and kind in or upon such lands to which service is provided. Real property can also include **property** to which the **fire department** is under a service agreement to provide **fire department** response services, automatic aid or mutual aid.

f.) **"Property Owner(s)"** means the registered owner of **property** or any person, firm, corporation, partnership or society and their heirs, executors, administrators or other legal representatives, including a property manager, tenant, occupant, mortgagee in possession, receiver, manager, trustee or trustee in bankruptcy having control over or possession of the **property** or any portion thereof;

g.) **"Township"** means the Corporation of the Township of Puslinch.

2. The fees, **costs** and charges, as outlined in the schedules attached hereto and forming part of this By-law shall be automatically adjusted annually based on the Consumer Price Index inflation rate as outlined in the Ontario Budget in accordance with Council Resolution No. 2019-298.

3. Any person requesting, applying or utilizing the services, applications or approvals listed in the attached schedules and forming part of this By-law shall pay the fees listed for that service, application or approval as set out in the attached schedules.

4. These fees, **costs**, and charges are applicable to residents and non-residents at the rates noted unless there is a specified exemption in the attached schedules.

5. No request by any person for a service, application or approval listed in the attached schedules shall be acknowledged or performed by the **Township** unless and until the person requesting the service, application or approval has paid the fees, **costs** or charges as set out in the attached schedules, unless noted otherwise.

6. All **Township** accounts and invoices are due and payable when rendered.

7. All unpaid fees, **costs** or charges imposed by this By-law on a person constitute a debt of the person to the **Township**.

8. The Treasurer shall add the fees, **costs** and charges imposed pursuant to this By-law to the tax roll for any **property** in the **Township** for which all of the **property owners** are responsible for paying the fees, **costs** and charges under this By-law and collect them in the same manner as municipal taxes in accordance with Section 398 of the Municipal Act, 2001, S.O. 2001, c. 25 as amended.

9. If peer or legal review **costs** are incurred by the **Township** in the processing of an application or approval by the **Township**, the applicant is required to pay these **costs** to the **Township**. The following are the applications or approvals subject to peer or legal review **costs:**

    a. Plan of Subdivision or Condominium Agreement or Pre-Servicing Agreement
    b. Zoning By-Law Amendment - Aggregate
    c. Site Alteration

10. The **Township** is not obligated to further process an application or approval until all outstanding third party **costs**, fees and other disbursements have been paid by the applicant.

11. The fees, **costs** and charges listed in the schedules to this By-law shall, where applicable, be subject to any applicable provincial and federal taxes.

12. Any fee, **cost** or charge:

    a. authorized by a by-law that comes into effect on the same or a later date than this By-law; or

    b. included in a valid agreement entered into by the **Township** and one or more other parties,

    shall be the approved and imposed fee, **cost** or charge for the service, activity or use of **property** specified.

13. The payment of any fee**, cost** or charge in this By-law shall be in Canadian currency.

14. The following Schedules form part of this By-law:

Schedule	**Department**
A	Administration
B	Finance
C	Corporate

D	Public Works
E	Fire and Rescue Services
F	Building
G	Planning and Development
H	By-law
I	Parks
J	Optimist Recreation Centre
K	Puslinch Community Centre

15. The fees, **costs** and charges, as outlined in the schedules attached hereto and forming part of this By-law, shall be implemented and take effect on January 1, 2020.

Fire Department Specific Response Fees

16. The **property owner** shall be responsible for the payment of **fire department specific response fees** imposed by this By-law in accordance with Schedule E attached to this By-law.

17. The **Township** may use **Indemnification Technology®** to assess applicable insurance coverage for **fire department specific response fees**.

18. Where the **Township** believes and/or **Indemnification Technology®** indicates **fire department specific response fees** are applicable but the **property owner** does not have, in part or in full, insurance coverage for **fire department** charges for the **property**, the **Township** may adjust the **fire department specific response fees** to the extent of insurance coverage upon provision by the **property owner** of evidence, to the satisfaction of the **Township**, that no such insurance coverage exists or to demonstrate the limits of such coverage.

Cancellation Terms – Parks, Optimist Recreation Centre, Puslinch Community Centre

19. A refund of 80 percent will be provided where 30 days' notice of cancellation is given for Puslinch Community Centre rentals.

20. A full refund will be provided where 72 hours or 3 days' notice of cancellation is given for Parks and Optimist Recreation Centre rentals.

Payment Terms – Parks, Optimist Recreation Centre, Puslinch Community Centre

21. One-Time Rentals - Payment is required within seven days of contract creation.

22. Recurring Rentals Throughout the Year - Payment is required on a quarterly basis. The first payment is required within seven days of contract creation. Future payments are required quarterly.

23. Recurring Seasonal Bookings - Payment is required in two instalments. The first payment is required within seven days of contract creation. The second payment is required halfway through the season.

Exemptions, Fee Waivers, Fee Reductions

24. Government organizations are exempt from the agreement fees imposed by this By-law.

25. The Optimist Club of Puslinch is exempt from the photocopy fees imposed by this By-law for **Township** Clean-up and Remembrance Day.

26. The following events are exempt from the rental fees imposed by this By-law:

    a. Fall Fair
    b. Santa Claus Parade
    c. Canada Day
    d. Family Day

e. Remembrance Day

27. The Winter Classic Tournament held during the Family Day Long Weekend is exempt from the payment of rental fees with the exception of part-time staffing **costs** including bartenders.

28. The following requests are not eligible for a fee reduction or waiver:

    a. Religious services
    b. Licences, development charges, cash in lieu of parkland, building permits, inspections, insurance, personnel costs

29. Eligible organizations can obtain one complimentary two-hour room rental for one meeting during non-prime times in the Meeting Room.

30. Usage of **Township** property must comply with the **Township**'s requirements including necessary insurance, permits and approvals within the required timelines.

31. Reduced rates are not offered during prime-time for facilities or parks that have a prime-time and non-prime time rate.

32. A 75% reduced rate shall apply to organizations that meet the eligibility criteria.

33. A 90% reduced rate shall apply to Seniors' Events or Programs.

34. A 90% reduced rate shall apply to Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).

Reduced Rate Eligibility Criteria

35. Organizations applying for a reduced rate must meet the following eligibility criteria:

    a. Be in existence for at least one year; and
    b. have its principal address in the **Township**; and
    c. be a not-for-profit organization or an unincorporated community group; and
    d. offer services that benefit the **Township** and its residents; and
    e. be in good financial standing with the **Township** and not in litigation with the **Township**; and
    f. be in compliance with any other **Township** by-laws and policies.

For the purposes of this By-law, Puslinch Minor Sports Organizations, Puslinch Religious Organizations, Guelph Community Health Centre (The Playgroup), YMCA/YWCA of Guelph, and the Aberfoyle Agricultural Society are deemed to meet the eligibility criteria.

36. For the purposes of this By-law, services that benefit the **Township** and its residents include:

    a. Charitable community services
    b. Artistic endeavours, including literature, dance, music, theatre, painting, sculpture, movies, photography and live performances
    c. Specific cultural and heritage activities
    d. Programs that improve the health and well-being of the community
    e. Programs that encourage participation in organized athletic activities
    f. Services or events directed for youth and older adults
    g. Public safety enhancement services

37. The following organizations are not eligible for a reduced rate:

    a. Adult sports organizations ie. Old Timers, Puslinch Kodiak's, Morriston Men's League, The Aberfoyle Dukes.
    b. County, Provincial and Federal organizations.

c. Groups or organizations affiliated with any political party or event.
d. Individuals, commercial organizations, and coalitions such as ratepayer associations.
e. Hospitals, hospital foundations and hospital auxiliary groups or agencies.
f. Educational institutions including universities, colleges, schools and associated auxiliary groups.

38. The following information will be required to review an organization's eligibility:

    a. A copy of the letters patent or articles of incorporation, if applicable.
    b. A copy of its Notification of Charitable Registration letter from the Canada Revenue Agency with any supporting documentation indicating the organization's status and terms of registration, if applicable.
    c. A copy of mandate, constitution and by-laws, as applicable.

39. Should any part of this By-law including any part of the schedules, be determined by a Court of competent jurisdiction to be invalid or of no force and effect, such invalid part of the By-law shall be severable and that the remainder of this By-law including the remainder of the Schedules, as applicable, shall continue to operate and to be in force and effect.

40. This By-law shall be known as the "User Fees and Charges By-law".

41. That By-law No. 056/18 is hereby repealed, effective January 1, 2020.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 4th DAY OF DECEMBER 2019.

_____
James Seeley, Mayor

_____
Patrick Moyle, CAO/Clerk

SCHEDULE A: ADMINISTRATION REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Agreements - Major - Not Registered	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. a lease agreement on Township lands.
Agreements - Minor - Not Registered	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. miscellaneous agreements.
Agreements - Registered	Flat Fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. an encroachment agreement or a conditional building permit.
Freedom of Information	Charged at the rate permitted per the legislation.						E	Regulated by Statute - See Report FIN-2017-024.
Signature of Commissioner	Per Document	$20.00	**$20.40**	$2.65	$23.05	2%	T	

SCHEDULE B: FINANCE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
NSF Cheque	Per NSF	$40.00	**$40.00**	$0.00	$40.00	0%	E	
Tax Certificate	Per Certificate	$60.00	**$60.00**	$0.00	$60.00	0%	E	
Tax Sale Charges		Actual costs incurred	**Actual costs incurred**			0%	T	Cost recovery of fees and disbursements as charged by consultants and solicitors.
Tender Fees	Per Package	$40.00	**$40.80**	$0.00	$40.80	2%	E	Tender fees applicable for projects administered by the Township's consultants.
Service Fee - Debit Card Transactions - Online	Total Transaction Amount	0.75 Percent	**0.75 Percent**			0%	E	In accordance with Visa and Mastercard merchant rules.
Service Fee - Credit Card Transactions - Online	Total Transaction Amount	1.75 Percent	**1.75 Percent**			0%	E	In accordance with Visa and Mastercard merchant rules.
Tile Drainage Loan Application and Inspection Fee	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	See Report FIN-2018-028

SCHEDULE C: CORPORATE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Canadian Flag	Per Flag	$22.12	**N/A**					See Report FIN-2019-027
Photocopy	Per Page	$0.25	**$0.26**	$0.03	$0.29	4%	T	Photocopy fees are exempt for Township Clean-up and Remembrance Day in accordance with Council Resolution No. 2017-363.
Township Flag	Per Flag	$44.25	**N/A**					See Report FIN-2019-027

SCHEDULE D: PUBLIC WORKS REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Entrance Permit - Commercial/Industrial	Flat Fee	**See below**	**$400.00**	$0.00	$400.00	67%		See Report FIN-2019-027
Entrance Permit - Farm Field	Flat Fee	**See below**	**$200.00**	$0.00	$200.00	-17%		See Report FIN-2019-027
Entrance Permit - Residential	Flat Fee	$235.00	**$240.00**	$0.00	$240.00	2%	E	See Report FIN-2019-027
Oversize-Overweight Load Permits	Per Trip	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Third Party Cost Recovery	Actual costs incurred + $100.00 administration fee						T	Material, equipment, labour/benefits, and administration costs.

SCHEDULE E: FIRE AND RESCUE SERVICES REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Boarding or Barricading Plus Materials	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Fee is in accordance with the Standard MTO Rate.
Burning Permit Violations or Unauthorized Open Air Burning	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Emergency responses to illegal burning or burning without a permit. Fee is in accordance with the Standard MTO Rate.
Carbon Monoxide Alarms	Per Alarm	N/A	**$19.75**	$2.57	$22.32	100%	T	See Report FIN-2019-027
Daycare & Home Daycare Inspections	Per Inspection	$100.00	**$102.00**	$13.26	$115.26	2%	T	As mandated in the Fire Code.
Emergency Responses to Incidents such as Collisions/Fires/Hazardous Material Releases on Roadways	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Township residents are exempt from payment of fee for emergency responses where emergency occurs on a Township of Puslinch or County of Wellington Road. Fee is in accordance with the Standard MTO Rate.
Fire Alarm False Alarm Calls	Per Hour Per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	A false alarm call after the second false alarm in any calendar year. Fee is in accordance with the Standard MTO Rate.
Fire Extinguisher Training	Per Person	$15.00	**$15.30**	$1.99	$17.29	2%	T	
Fire Safety Plan Review	Per Plan	$120.00	**$122.00**	$15.86	$137.86	2%	T	
Industrial/Commercial/Institutional/Assembly/Apartment	Base Inspection	$100.00	**$102.00**	$13.26	$115.26	2%	T	Any inspections completed by the fire department that are new, complaint driven, requested or mandated.
Industrial/Commercial/Institutional/Assembly/Apartment	Plus each tenant/occupant/ apartment unit	$25.00	**$25.50**	$3.32	$28.82	2%	T	Any inspections completed by the fire department that are new, complaint driven, requested or mandated.
Information or Fire Reports	Per Report	$75.00	**$76.50**	$0.00	$76.50	2%	E	Requested for emergency incidents.
Key Boxes	Per Box	$100.00	**$102.00**	$13.26	$115.26	2%	T	For rapid entry for firefighters.
Occupancy Load	Flat Fee	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Open Air Burning Permit Inspection Fee	Per Inspection	$40.00	**$40.80**	$5.30	$46.10	2%	T	As a result of a request to modify the terms and conditions of the Open Air Burning Permit.
Open Air Burning Permit	Per Permit	$20.00	**$20.40**	$0.00	$20.40	2%	E	Permit must be renewed annually.
Post Fire Watch	Per Hour per Truck	$465.42	**$477.00**	$0.00	$477.00	2%	E	Fee is in accordance with the Standard MTO Rate.

SCHEDULE E: FIRE AND RESCUE SERVICES REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Replacement of Equipment and Resources Used	Actual costs incurred	Actual costs incurred	**Actual costs incurred**			0%	T	Materials used in emergency responses.
Fire Department Specific Response Fees			**Note 1**			100%	T	FIR-2019-010
Sale of Fireworks Permit	Per Permit	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Setting Off or Discharge of High Hazard Fireworks Permit	Per Permit	$100.00	**$102.00**	$0.00	$102.00	2%	E	
Smoke Alarms	Per Alarm	N/A	**$7.30**	$0.95	$8.25	100%	T	See Report FIN-2019-027
Water Tank Locks	Per Lock	$17.80	**$18.16**	$2.36	$20.52	2%	T	For locking water tank lids closed.
Special Events	No fee at this time							Requests for Attendance.
Authorized Requester Agreement - Search Fee	No fee at this time							Standard information product per record search fee - See Report FIN-2017-024.

Note 1: Fire Department Specific Response Fees

Fire department specific response fees shall be the total of:

a. Current MTO* rate per unit per hour or portion thereof for each unit
b. rate per person per hour or portion thereof for each firefighter
c. other costs including but not limited to: foam, metered water, and any other consumable supplies. Air tank re-filling, cleaning equipment, DSPA or similar type units, cost to replace damaged or destroyed equipment, specialized response costs from automatic/mutual aid agreements, fire protection agreements, water bomber drops, etc.

* The MTO rate per unit per hour is set by the Ministry of Transportation. This rate is adjusted periodically in accordance with the consumer price index.

Such fees shall be charged and calculated on the basis of each **fire department** vehicle attending, resources consumed in attendance to the **property** incident. The time shall be measured from the time of departure of each unit from the **fire department**'s facilities to the time the unit is cleared for the next call out.

SCHEDULE F: BUILDING REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Minimum Permit Fee	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	For all work unless otherwise noted
NEW BUILDING, ADDITIONS, MEZZANINES								
Group A & B: Assembly & Care and Detention Buildings								
Shell	Per Sq. Foot	$2.40	**$2.45**	$0.00	$2.45	2%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$2.71	**$2.77**	$0.00	$2.77	2%	E	See Report FIN-2017-024
Group C: Residential Buildings								
Houses, Townhouses, and Apartments	Per Sq. Foot	$1.92	**$1.97**	$0.00	$1.97	2%	E	
Manufactured Home	Per Sq. Foot	$1.46	**$1.49**	$0.00	$1.49	2%	E	
Garage/carport/shed/boathouse	Per Sq. Foot	$0.78	**$0.79**	$0.00	$0.79	1%	E	See Report FIN-2018-028
Deck, porch, dock	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Group D & E: Business and Personal Service and Mercantile Buildings								
Shell	Per Sq. Foot	$1.85	**$1.89**	$0.00	$1.89	2%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$2.15	**$2.20**	$0.00	$2.20	2%	E	See Report FIN-2017-024
Group F: Industrial Buildings								
Shell	Per Sq. Foot	$0.75	**$0.76**	$0.00	$0.76	1%	E	See Report FIN-2017-024
Finished	Per Sq. Foot	$0.95	**$0.97**	$0.00	$0.97	2%	E	See Report FIN-2017-024
Farm Buildings								
New Building	Per Sq. Foot	$0.30	**$0.31**	$0.00	$0.31	3%	E	See Report FIN-2017-024
INTERIOR FINISHES AND ALTERATIONS - ALL CLASSIFICATIONS								
Finishes to all areas	Per Sq. Foot	$0.52	**$0.53**	$0.00	$0.53	2%	E	
SEWAGE SYSTEMS								
New Installation	Flat Fee	$624.00	**$636.00**	$0.00	$636.00	2%	E	
Replacement or alteration	Flat Fee	$468.00	**$477.00**	$0.00	$477.00	2%	E	
ALTERNATIVE SOLUTIONS								
All buildings/systems within scope of Part 9	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	See Report FIN-2017-024
All buildings/systems within scope of Part 3	Flat Fee	$1,000.00	**$1,020.00**	$0.00	$1,020.00	2%	E	See Report FIN-2017-024
SPECIAL CATEGORIES AND MISCELLANEOUS								
Change of Use Permit (No Construction)	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	See Report FIN-2017-024
Construction prior to issuance of a permit	100% of permit fee	100% of permit fee	**100% of permit fee**			0%	E	Fee is in addition to all other required permit fees.
Conditional Permits	20% of permit fee	20% of permit fee	**20% of permit fee**			0%	E	Fee is in addition to all other required permit fees.
Demolition Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Designated Structure Permit	Flat Fee	$416.00	**$424.00**	$0.00	$424.00	2%	E	Listed per Div.A, 1.3.1.1 Solar installation

SCHEDULE F: BUILDING REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Fireplace/Woodstove	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Inspection of works not ready	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	At the discretion of the Chief Building Official. Includes code violations and deficiencies.
Occupancy Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	
Occupancy without an Occupancy Permit	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	At the discretion of the Chief Building Official. This fee is not imposed as it relates to the current initiative of closing old open building permits as approved by Council in the 2018 Budget.
Portables	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	
Reproduction of Drawings	Flat Fee	$50.00	**$51.00**	$6.63	$57.63	2%	T	Current rate covers costs for the reproduction of black and white drawings.
Revision to Approved Plans	Flat Fee	$312.00	**$318.00**	$0.00	$318.00	2%	E	Before or after a permit is issued - significant changes to approved plans requiring further review. Minor revisions which result in no fee include eliminating a closet, finishing a three-piece bathroom, cosmetic changes, layout changes, removing non-load bearing walls, etc.
Sign Permits	Flat Fee	$260.00	**$265.00**	$0.00	$265.00	2%	E	With building permit
Storefront replacement	Flat Fee	$200.00	**$204.00**	$0.00	$204.00	2%	E	
Tents	Flat Fee	$260.00	**$213.00**	$0.00	$213.00	-18%	E	Tents and air-supported structures shall be in conformance with the Building Code and Section 2.9 of the Fire Code. Report FIN-2019-031
Transfer of Permit	Flat Fee	$156.00	**$159.00**	$0.00	$159.00	2%	E	

INTERPRETATION

The following requirements are to be applied in the calculation of permit fees:

- Floor area of the proposed work is to be measured to the outer face of exterior walls and to the centre line of party walls or demising walls.
- Unfinished loft space, habitable attics, mezzanines and interior balconies are to be included in all floor area calculations.
- Unfinished basement space and attached residential garages are not included in floor area calculations.
- The occupancy categories in this Schedule correspond with the major occupancy classifications in the Ontario Building Code. For multiple occupancy floor areas, the permit fees for each of the applicable occupancy categories may be used.
- In the case of interior alterations or renovations, area of proposed work is the actual space receiving the work, e.g. tenant suite.
- Additional permit fees are not required for an attached deck to a residential dwelling, when the deck is shown on the approved residential building plans.
- For classes of permits not described in this Schedule, a reasonable permit fee shall be determined by the Chief Building Official.

SCHEDULE G: PLANNING AND DEVELOPMENT REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Agreements - Minor - Not Registered	Flat Fee	$250.00	**$255.00**	$0.00	$255.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. maintenance and operations agreement
Agreements - Registered	Flat Fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements, ie. permission to have a second dwelling while another is being built, an amendment to a site plan or subdivision or condominium agreement. Excludes new site plan, subdivision or condominium agreements.
Compliance Letter	Flat Fee	$75.00	**$76.50**	$0.00	$76.50	2%	E	Fee charged is consistent for all Township departments.
Consent Review and Condition Clearance	Flat Fee	$134.00	**$137.00**	$0.00	$137.00	2%	E	
Garden Suites and Renewals (Zoning)	Flat Fee	N/A	**$1,200.00**	$0.00	$1,200.00	100%	E	Report FIN-2019-034
Lifting of Holding Designation (Zoning)	Flat Fee	$586.00	**$598.00**	$0.00	$598.00	2%	E	
Minor Variance - Type 1	Flat Fee	$706.00	**$721.00**	$0.00	$721.00	2%	E	Note 3
Minor Variance - Type 2	Flat Fee	N/A	**$1,221.00**	$0.00	$1,221.00	100%	E	Note 4
Ownership List Confirmation	Flat Fee	N/A	**$70.00**	$0.00	$70.00	100%	E	See Report FIN-2019-027
Part Lot Control Exemption By-law	Flat Fee	$585.00	**$597.00**	$0.00	$597.00	2%	E	
Plan of Subdivision or Condominium Agreement or Pre-Servicing Agreement *	Administration fee	$765.00	**$780.00**	$0.00	$780.00	2%	E	For recovery of the costs of facilitating and preparing agreements.
Pre-Consultation Fee	Flat Fee	N/A	**$615.00**	$0.00	$615.00	100%	E	This fee will be credited from the future application fee (ie. when a formal complete application is submitted) for a Zoning By-law Amendment, Site Plan, or Plan of Subdivision or Condominium.
Site Plan Application and Agreement - Minor	Flat Fee	$10,850.00	**$11,067.00**	$0.00	$11,067.00	2%	E	Note 1
Site Plan Application and Agreement - Standard	Flat Fee	$20,600.00	**$21,012.00**	$0.00	$21,012.00	2%	E	Note 2
Telecommunication Tower Proposals	Flat Fee	$532.00	**$2,293.00**	$0.00	$2,293.00	331%	E	Report FIN-2019-031 Township Administration Fee - $543 Canadian Radiocommunications Information and Notification Services - $1,750
Zoning By-law - Copy	Flat Fee	$40.00	**$40.80**	$5.30	$46.10	2%	T	
Zoning By-Law Amendment - Aggregate *	Administration fee	$15,000.00	**$15,300.00**	$0.00	$15,300.00	2%	E	
Zoning By-Law Amendment - Minor	Flat Fee	$5,000.00	**N//A - see below**			0%	E	
Zoning By-Law Amendment - Standard	Flat Fee	$11,200.00	**N//A - see below**			0%	E	

SCHEDULE G: PLANNING AND DEVELOPMENT REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Zoning By-Law Amendment	Flat Fee	N/A	**$14,842.00**	$0.00	$14,842.00	100%	E	Report FIN-2019-034

INTERPRETATION

* the fees denoted with an asterisk are also subject to the Township's disbursements and third party consultant fees incurred for the processing of the application.

Note 1: Minor Site Plan
A Minor Site Plan may include, but is not limited, to the following:

- Site works associated with the change of use of an existing building;
- Parking lot modifications, outdoor patios, landscape works and the placement of accessory buildings and structures;
- Minor revisions or building additions to existing commercial, industrial or residential developments

Township staff have the discretion to determine whether a site plan application is classified as minor.

Note 2: Standard Site Plan
A Standard Site Plan may include, but is not limited, to the following:

- Requirement of technical studies (ie. storm water management, geotechnical, hydrological, environmental impact assessment, etc.)
- Relates to a new development or major additions/alterations to an existing development or site design

Note 3: Minor Variance - Type 1
Any minor variance application to permit any of the following on residential properties:

- Lot line setbacks for single family dwellings and accessory structures
- Height variances for single family dwellings and accessory structures
- Maximum size of accessory structure variances
- Maximum size of accessory unit variances

Note 4: Minor Variance - Type 2
All other minor variance applications not listed under Type 1.

Refund of Application Fees
In the case of a withdrawal or abandonment of an application, staff shall determine the amount of paid fees that may be refunded to the applicant, if any, in accordance with the following:
a.) 80 percent (80%) if administrative functions have only been performed;
b.) 70 percent (70%) if administrative and zoning functions have only been performed;
c.) 45 percent (45%) if administrative, zoning, and a completed application has been circulated with comments;
d.) 35 percent (35%) if application has been sent for second submission and comments have been received;
e.) no refund shall be made if the application has been approved by Committee and/or Council

SCHEDULE H: BY-LAW REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Dog Tags	Per Tag	$25.00	**$25.50**	$0.00	$25.50	2%	E	Maximum of 3 dogs
Fence Viewer's Application	Per Application	$300.00	**$306.00**	$0.00	$306.00	2%	E	
Filming Permit Fee	Flat Fee	$500.00	**$510.00**	$0.00	$510.00	2%	E	Filming of special events on Township lands/roads.
Kennel Licence	Per Licence	$187.00	**$190.00**	$0.00	$190.00	2%	E	More than 3 dogs
Liquor License Letter	Per Inspection	$156.00	**$159.00**	$0.00	$159.00	2%	E	Requested or required inspection of licensed sales establishments (as defined by the Liquor Licence Establishment Board of Ontario) that requires an inspection and/or a letter.
Lottery Licence	3% of prize value	3% of prize value	**3% of prize value**	$0.00	3% of prize value	0%	E	Fee regulated by AGCO (Nevada, Raffle, Bazaar, etc.).
Municipal Addressing Sign	Flat Fee	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Municipal Addressing Post	Flat Fee	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Property Standards Appeal Fee	Flat Fee	$0.00	**$260.00**	$0.00	$260.00	100%	E	Report FIN-2019-031
Septic Compliance Letter	Flat Fee	$75.00	**$76.50**	$0.00	$76.50	2%	E	Fee charged is consistent for all Township departments.
Sign Permits	Flat Fee	$100.00	**$102.00**	$0.00	$102.00	2%	E	Without building permit.
Site Alteration Permit Application *	Administration fee	$1,800 plus $75 per hectare (rounded to the greater whole aggregate).	**$1,800 plus $75 per hectare (rounded to the greater whole aggregate).**	$0.00	$1,800 plus $75 per hectare (rounded to the greater whole aggregate).	0%	E	
Site Alteration Permit Service Fee	Per m^3	$0.06	**$0.06**	$0.00	$0.06	0%	E	Paid at time of application.
Special Occasion Permit	Per Letter	$75.00	**$76.50**	$0.00	$76.50	2%	E	
Swimming Pool Enclosure Permit	Flat Fee	$215.00	**$219.00**	$0.00	$219.00	2%	E	

* the fees denoted with an asterisk are also subject to the Township's disbursements and third party consultant fees incurred for the processing of the application.

SCHEDULE I: PARKS REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Ball Diamonds - No Lights	Per Hour	$20.85	**$21.27**	$2.77	$24.04	2%	T	
75% Reduced Rate - Ball Diamonds - No Lights	Per Hour	$5.20	**$5.31**	$0.69	$6.00	2%	T	
Ball Diamonds - Lights	Per Hour	$31.25	**$31.88**	$4.14	$36.02	2%	T	after 8:30 p.m.
75% Reduced Rate - Ball Diamonds - Lights	Per Hour	$7.80	**$7.96**	$1.03	$8.99	2%	T	after 8:30 p.m.
All Ball Diamonds	Per Day	$156.35	**$159.48**	$20.73	$180.21	2%	T	
75% Reduced Rate - All Ball Diamonds	Per Day	$39.10	**$39.88**	$5.18	$45.06	2%	T	
Ball Diamonds - Dragging	Per Occurrence	$40.00	**$40.80**	$5.30	$46.10	2%	T	Upon request and approval - June 15, 2016 Special Council Meeting.
Soccer Field	Per Hour	$26.55	**$27.09**	$3.52	$30.61	2%	T	Development of a fee - Report FIN-2017-012
75% Reduced Rate - Soccer Field	Per Hour	$6.65	**$6.79**	$0.88	$7.67	2%		
Soccer Field	Per Day	$269.80	**$275.20**	$35.78	$310.98	2%	T	Development of a fee - Report FIN-2017-012
75% Reduced Rate - Soccer Field	Per Day	$67.45	**$68.80**	$8.94	$77.74	2%		
Ball Diamond Advertising	Per Season	$175.00	**$178.50**	$23.21	$201.71	2%	T	Available from May to October
75% Reduced Rate - Ball Diamond Advertising	Per Season	$43.75	**$44.63**	$5.80	$50.43	2%	T	
Horse Paddock	Per Day	$200.00	**$204.00**	$26.52	$230.52	2%	T	Rental restricted to horse paddock and tractor pull area.
75% Reduced Rate - Horse Paddock	Per Day	$50.00	**$51.00**	$6.63	$57.63	2%	T	
Picnic Shelter	Per Hour	$20.00	**$20.40**	$2.65	$23.05	2%	T	
Picnic Shelter	Per Day	$80.00	**$81.60**	$10.61	$92.21	2%	T	
Sports Facility User Fees - Tennis	Per Resident	$10.00	**$10.00**	$0.00	$10.00	0%	E	Staff to bring forward a use/cost sharing agreement with the Puslinch Tennis Club in 2019.
Sports Facility User Fees - Tennis	Per Non-Resident	$25.00	**$25.00**	$0.00	$25.00	0%	E	Staff to bring forward a use/cost sharing agreement with the Puslinch Tennis Club in 2019.
Fireworks Security Deposit	Per Display	$500.00	**$500.00**	$0.00	$500.00	0%	E	Clean up of Township lands after fireworks display.
Baseball Equipment and Lights Security Deposit	Per Season	$50.00	**$50.00**	$0.00	$50.00	0%	E	Lights key provided to ball diamond rentals with light use. Equipment key provided to leagues with a minimum of an eight week rental commitment.
Picnic Shelter Washroom Key Security Deposit	Per Rental	$50.00	**$50.00**	$0.00	$50.00	0%	E	
Horse Paddock Security Deposit	Per Rental	$300.00	**$300.00**	$0.00	$300.00	0%	E	

Note 1: Booking availability of Township fields are dependent on field conditions.

SCHEDULE J: OPTIMIST RECREATION CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Arena Floor	Per Hour	$67.45	**$68.81**	$8.95	$77.76	2%	T	Includes use of change rooms
75% Reduced Rate - Arena Floor	Per Hour	$16.85	**$17.20**	$2.24	$19.44	2%	T	
Ice - Non - Prime	Per Hour	$56.20	**$57.33**	$7.45	$64.78	2%	T	
75% Reduced Rate - Ice - Non-Prime	Per Hour	$14.05	**$14.34**	$1.86	$16.20	2%	T	
Ice - Prime	Per Hour	$161.50	**$164.73**	$21.41	$186.14	2%	T	
Gymnasium	Per Hour	$30.65	**$31.27**	$4.07	$35.34	2%	T	
75% Reduced Rate - Gymnasium	Per Hour	$7.65	**$7.81**	$1.02	$8.83	2%	T	
90% Reduced Rate - Gymnasium	Per Hour	$3.05	**$3.11**	$0.40	$3.51	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Rink Board Advertising	Per Year	$350.00	**$357.00**	$46.41	$403.41	2%	T	
75% Reduced Rate - Rink Board Advertising	Per Year	$87.50	**$89.25**	$11.60	$100.85	2%	T	

Note 1:

- Ice - Non-Prime: Weekdays from 9:00 am to 5:00 pm
- Ice - Prime: Weekdays from 5:00 pm to 10:00 pm, Saturdays, Sundays

SCHEDULE K: PUSLINCH COMMUNITY CENTRE REVIEW OF MUNICIPAL RATES AND SERVICE CHARGES
EFFECTIVE 2020

TYPE OF REVENUE/USER	Unit/Descr	2019 RATE (NO TAX)	2020 RATE (NO TAX)	13% HST	RATE INCL HST	% CHANGE	HST STATUS	COMMENTS
Meeting Room	Per Hour	$26.05	**$26.58**	$3.46	$30.04	2%	T	
75% Reduced Rate - Meeting Room	Per Hour	$6.50	**$6.64**	$0.86	$7.50	2%	T	
90% Reduced Rate - Meeting Room	Per Hour	$2.60	**$2.65**	$0.34	$2.99	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Per Hour	$55.95	**$57.08**	$7.42	$64.50	2%	T	Minimum of a 3 hour booking required.
75% Reduced Rate - Hall - Non-Prime	Per Hour	$14.00	**$14.28**	$1.86	$16.14	2%	T	Minimum of a 3 hour booking required.
90% Reduced Rate - Hall - Non-Prime	Per Hour	$5.60	**$5.71**	$0.74	$6.45	2%	T	Minimum of a 3 hour booking required. Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Non-Prime	Full Day Rental	$380.20	**$387.81**	$50.42	$438.23	2%	T	
75% Reduced Rate - Hall - Non-Prime	Full Day Rental	$95.05	**$96.96**	$12.60	$109.56	2%	T	
90% Reduced Rate - Hall - Non-Prime	Full Day Rental	$38.00	**$38.77**	$5.04	$43.81	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).
Hall - Prime	Full Day Rental	$498.75	**$508.73**	$66.13	$574.86	2%	T	
Commercial Rental	Surcharge	$781.85	**25% Surcharge**				T	Example - Auctions, Sale of Merchandise See Report FIN-2019-031
Non Resident Rental	Surcharge	N/A	**25% Surcharge**				T	See Report FIN-2019-031
Hall - Set-up Fee	Per Hour	$55.95	**$57.08**	$7.42	$64.50	2%	T	Set-up is after 5:00 p.m. on Friday only and must include a Saturday rental. This service is only available if the hall is not booked 7 days prior to the event date.
Use of Kitchen Facilities - Non Prime	Per Hour	$27.35	**$27.90**	$3.63	$31.53	2%	T	Minimum of a 3 hour booking required.
Licenced Events Using Patio	Flat Rate	$57.25	**$58.40**	$7.59	$65.99	2%	T	Patio Fencing
Microphone	Flat Rate	$25.00	**$25.50**	$3.32	$28.82	2%	T	See Report FIN-2018-030
Projector	Flat Rate	$25.00	**$25.50**	$3.32	$28.82	2%	T	See Report FIN-2016-029
Facility Rental Security Deposit	Per Booking	$365.00	**$365.00**	$0.00	$365.00	0%	E	Deposit is fully refundable after function if there are no damages and key is returned.
Bartenders	Per Bartender	$130.00	**$132.60**	$17.24	$149.84	2%	T	Smart Serve Certified
Electronic Sign Advertising	Per Week	$33.35	**$34.02**	$4.42	$38.44	2%	T	No charge for Puslinch Community Centre rentals.
75% Reduced Rate - Electronic Sign Advertising	Per Week	$8.35	**$8.52**	$1.11	$9.63	2%	T	
90% Reduced Rate - Electronic Sign Advertising	Per Week	$3.33	**$3.41**	$0.44	$3.85	2%	T	Applicable for Seniors' Events/Programs, Whistle Stop Co-operative Pre-school and Guelph Community Health Centre (Playgroup).

Note 1: Hall rentals include the use of the kitchen facility (dishes, silverware, cooking utensils, dishwasher, coffee maker, etc. included)
Note 2: **Hall - Non-Prime:** Monday to Thursday and Sunday Rentals; **Hall - Prime:** Friday and Saturday

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 070-2019

Being a by-law to confirm the proceedings of the Council of the Corporation of the Township of Puslinch at its Regular Council meeting held on December 4, 2019.

WHEREAS by Section 5 of the *Municipal Act, 2001, S.O. 2001, c.25* the powers of a municipal corporation are to be exercised by its Council;

AND WHEREAS by Section 5, Subsection (3) of the *Municipal Act,* a municipal power including a municipality's capacity, rights, powers and privileges under section 8, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise;

AND WHEREAS it is deemed expedient that the proceedings of the Council of the Corporation of the Township of Puslinch at its Regular Council meeting held on December 4, 2019 be confirmed and adopted by By-law;

NOW THEREFORE the Council of the Corporation of the Township of Puslinch hereby enacts as follows:

1) The action of the Council of the Corporation of the Township of Puslinch, in respect of each recommendation contained in the reports of the Committees and each motion and resolution passed and other action taken by the Council at said meeting are hereby adopted and confirmed.

2) The Head of Council and proper official of the Corporation are hereby authorized and directed to do all things necessary to give effect to the said action of the Council.

3) The Head of Council and the Clerk are hereby authorized and directed to execute all documents required by statute to be executed by them, as may be necessary in that behalf and the Clerk authorized and directed to affix the seal of the said Corporation to all such documents.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 4th DAY OF DECEMBER, 2019.

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James Seeley, Mayor

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Patrick Moyle, Clerk/CAO