LOWER TRENT CONSERVATION
714 Murray Street, R.R. 1, Trenton, Ontario K8V 0N1
Tel: 613-394-4829 Fax: 613-394-5226 Website: www.ltc.on.ca Email: information@ltc.on.ca
Registered Charitable Organization No. 107646598RR0001

NOTICE OF HEARING BOARD MEETING
LOWER TRENT CONSERVATION

TO BE HELD AT

Administration Office, 714 Murray Street, Trenton, ON / Virtually Join Meeting HERE

Thursday April 10, 2025, at 1:00 PM

FOR

O. Reg. 41/24 Permit Application #RP-25-011

APPLICANT: **James Brouwer - Property Owner**

LOCATION: 1225 Shelter Valley Road
Township of Alnwick/Haldimand, Northumberland County
Geographic Township of Haldimand, Concession A, Part of Lot 18-19

AGENDA

1. Meeting called to order by the Chair
2. Motion for the Board of Directors to sit as the Hearing Board
3. Opening Remarks by Chair for **RP-25-011**
4. Disclosure of pecuniary interests
5. Staff Report and Presentation Page # 2
6. Applicant Presentation Page # 193
7. Additional Information Sharing
   a. Additional Questions from the Board
   b. Comments or Questions from the Applicant
   c. Comments or Questions from Staff
8. Deliberation (In-Camera if required)
9. Motion on the Hearing Board Decision for RP-25-011
10. Motion to adjourn the Hearing Board

PLEASE CONTACT THE OFFICE IF YOU WILL BE UNABLE TO ATTEND THIS MEETING
Chitra Gowda 613-394-3915 ext. #215 | chitra.gowda@ltc.on.ca

Hearing Board Agenda Item #5.

LOWER TRENT CONSERVATION

STAFF REPORT

Date: March 31, 2025
To: Lower Trent Conservation Hearing Board
Re: Ontario Regulation 41/24 application for permission RP-25-011 to develop within the Shelter Valley Creek floodplain and within 30-metres from a wetland feature
Prepared by: Gage Comeau, Manager, Watershed Management, Planning and Regulations

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DATE

March 31, 2025

DATE RECEIVED

Permit application received January 20, 2025
Permit application submission deemed complete – February 18, 2025
Request for Hearing received March 3, 2025

APPLICANT

Property Owner: James Brouwer

(Copy of application, construction drawings, topographic survey plan, site plan, floodplain assessment report and grading plan from Jewell Engineering by Elliott Fledderus and Environmental Impact Study by Cambium Inc., ***Appendices 1-7***)

LOCATION

1225 Shelter Valley Road (ARN: 145011602007600000)
Township of Alnwick/Haldimand, Northumberland County
Geographic Township of Haldimand, Concession A, Part of Lot 18-19
(Map attached, see **Appendix 8**)

OVERVIEW

Lower Trent Region Conservation Authority (LTC) received an application to undergo the construction of a two-storey habitable 2500ft2 clubhouse structure with deck. The proposed structure will include a restaurant, 3 stay and play rooms, a pro shop and a golf simulator. The proposed development is considered major development within the floodplain and does not comply with LTC's Ontario Regulation 41/24 Policy Document (June 2024) and therefore, a permit cannot be issued by staff.

PROPOSAL

The proponent is seeking approval from LTC for the construction of a two-storey habitable 2500ft2 clubhouse structure with deck. The proposed works would take place within the Shelter Valley Creek floodplain, and within 30-metres from a wetland as identified in their submitted plans,

engineering report and LTC map (**Appendix 2-6 and 8**).

SUMMARY

LTC is responsible for the administration of the Conservation Authorities Act and Ontario Regulation 41/24. In order to guide the implementation of Ontario Regulation 41/24 made pursuant to Section 28.5 of the *Conservation Authorities Act*, the LTC Board of Directors has approved policies, most recently updated in June 2024. Where a proposal for development or alteration follows the approved policies or is not a significant deviation from the approved policies, designated authority staff may grant permission.

The subject property is located within the Shelter Valley Creek floodplain and within 30-metres from a field verified wetland feature. Further, the permit submission is to undergo the construction of a two-storey habitable 2500ft2 clubhouse structure with deck. The proposed development activity triggers the below noted policies with respect to development in the One Zone Regulatory Floodplain. Designated staff are not in a position to grant approval of the Ontario Regulation 41/24 permit application as it does not conform with the policies. It is important to note that other policies associated with other key features such as the field verified wetland area are in compliance with the Board Approved Regulatory policies.

Key issue: A permit from LTC is required for the proposed development as they are to take place within a regulated area as described in subparagraph 2 i of subsection 28 (1) of the *Conservation Authorities Act*, specifically, hazardous lands (i.e., floodplain), and Section 2 (3) of Ontario Regulation 41/24 pursuant to the Act (i.e., 30-metre wetland setback from a field verified wetland). The primary issue with the proposal is that it is a significant deviation from the Board Approved Regulatory policies associated with new development within the floodplain.

Pursuant to Ontario Regulation 41/24, “hazardous land” means land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.

Lower Trent Region Conservation Authority
Ontario Regulation 41/24 Policy Document (June 2024)

Below are the applicable policies that are relevant to this permit application:

2.0 General Policies

3) In addition to specific conditions outlined through this document, development activities, interference and/or alteration within a regulated area may be permitted only where:

a) risk to public safety is not increased;

b) there is no increase in habitation in the hazard area with the exception of allowable flood fringes or wave uprush hazard areas;

c) susceptibility to natural hazards is not increased nor new hazards created (e.g., there will be no impacts on adjacent properties with respect to natural hazards); and,

k) the control of flooding, erosion, dynamic beaches and unstable soils and bedrock is not adversely affected during and post development.

5.3.1.1 Development within One-Zone Regulatory Floodplain of River or Stream Valleys (including inland lakes)

1) Development within the Regulatory floodplain shall not be permitted.
2) Placement of fill, flood hazard protection and/or bank stabilization works to allow for future/proposed development or an increase in development envelope within the Regulatory floodplain shall not be permitted.
4) Major development within the Regulatory floodplain shall not be permitted.

(LTC's 2024 Policies attached, see ***Appendix 9***– Relevant sections only).

The applicant was notified that staff could not approve the permit application and of their right to a Hearing before the Authority's Board of Directors (see LTC Permit Status Letter, February 25, 2025– ***Appendix 10***).

The proponent requested LTC staff to proceed with the necessary arrangements for a Hearing (March 13, 2025 Notice of Hearing scheduled for April 10, 2025 – ***Appendix 11***).

The proponent was provided the Hearing Guidelines.
(LTC's 2024 Hearing Guidelines attached, see ***Appendix 12***).

FLOODPLAIN MAPPING

The available floodplain mapping at LTC for Shelter Valley Creek was produced by Crysler and Lathem Limited in 1978. The engineered floodplain mapping at the time included the 100-year floodplain limit and Timmins floodplain limit. Although, the hydrology and hydraulic assessments conducted at the time were accepted, newer techniques and procedures are implemented today for identifying floodplain limits.

As part of this permit submission Jewell Engineering conducted a review and assessment of the floodplain and how the development will impact the control of flooding. Additionally, this assessment and report produced an updated floodplain map for the project area. An assessment of the hydrology and hydraulics was completed in order to produce the revised floodplain mapping, and the historic hydrology from the Crysler and Lathem Ltd. report was not used.

Although, the Shelter Valley Creek floodplain mapping is the approved floodplain mapping, the Flood Hazard limit delineation produced by Jewell Engineering was completed using newer software, specifically, HEC-RAS. The previous mapping was produced using HEC-2 and while at the time, this was the ideal approach, HEC-RAS is a significant improvement to the previous software.

At this time, there are no plans to update the existing floodplain mapping for Shelter Valley Creek.

BACKGROUND

On January 23, 2024, LTC staff were contacted by James Brouwer to discuss a proposed development on the subject lands, and regulatory comments and information related to the Shelter Valley Creek floodplain and wetland features were provided to the owner by staff.

A site visit to the property was scheduled for February 15, 2024 as part of the initial correspondence to review the existing site conditions and provide additional comments. Specifically, staff requested a topographic base plan be obtained through an Ontario Land Surveyor and recommended that the Township be contacted to ensure Municipal requirements can be met. The topographic base plan was requested by staff for review and to compare existing ground elevations to the known floodplain contour elevation. Based on the information available from the 1978 Crysler and Latham Ltd. mapping, the floodplain varied from 101.97 metres to 102.97 metres CGVD1928 throughout the property.

On April 24, 2024, LTC staff attended a pre-consultation meeting with Alnwick/Haldimand and Northumberland County staff to discuss the proposal. All agencies provided comments in relation to the proposal and it was confirmed by all agencies that the first step would be to obtain a topographic base plan. It is important to note that the proposal also

requires various planning approvals from the Township.

Through the months of July to December 2024, LTC staff provided additional comments and feedback in relation to conceptual drawings and draft submissions. Through discussions, it was suggested that a meeting take place to discuss the development proposal, and a complete checklist of permit requirements could be provided. On December 9, 2024, staff met with the applicant to discuss the development proposal and a complete permit checklist for a permit application was provided.

On January 20, 2025, a permit application submission was received and acknowledged by staff. Upon review of the file on February 2, 2025, the permit was deemed incomplete as the submission did not contain all of the required technical documents that was requested during the December 9, 2024 meeting. It was noted to staff at the time that the reporting was being finished, and we would receive the required documentation shortly.

Additional documentation for the permit application was submitted to our office on February 14, 2025. Staff reviewed the submission, and the permit application was deemed complete on February 18, 2025. As noted above, a letter providing notice regarding staff's inability to approve the permit was issued on February 25, 2025 and possible options were provided for the next steps (see **Appendix 10**).

LTC staff received a request for a hearing before the Hearing Board on March 3, 2025. Following receipt of this request, the hearing was registered, and a Notice of Hearing letter was issued for a hearing on April 10, 2025 (see **Appendix 11**).

Engineering review comments were received from Quinte Conservation on March 31, 2025 (see **Appendix 13**). The comments noted several items that require additional information or were not provided as part of the floodplain assessment.

DEVELOPMENT WITHIN HAZARD LANDS

The proposed works would involve the placement of fill within 30-metres from an identified wetland feature and within hazard lands, specifically the Shelter Valley Creek floodplain. This development activity is considered as a "development activity" pursuant to Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits made under the *Conservation Authorities Act*. Subsection 28 (1) of *Conservation Authorities Act* states that no person shall undertake development or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are hazard lands. Pursuant to subsection 28.1 (1), the Authority may grant permission for development in or on the areas that would otherwise be prohibited by section 28, if, in the opinion of the Authority,

(a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock

(b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; and

(c) any other requirements that may be prescribed by the regulations are met.

The applicant has submitted the requested documentation for a complete application and the submission has been deemed complete. As noted previously, this development is to undergo the construction of a two-storey habitable 2500ft2 clubhouse structure with deck. The proposed structure will include a restaurant, 3 stay and play rooms, a pro shop and a golf simulator.

Based on a review of the relevant policies that are applicable to this proposal, staff are not in a position to support the application as it does not conform with the policies.

STAFF CONCLUSION

Hazard land management was delegated by the Province to LTC through the administration of the *Conservation Authorities Act* and Ontario Regulation 41/24. Through the administration of the Act and Regulation, LTC staff review development proposals in an effort to limit development and protect people and property in flood susceptible areas. Overall, it is the goal of the Regulation Policy document and staff to minimize or prevent the impact of flooding. Deviation from the policies represents a risk that requires careful consideration.

The proposal requires a permit from LTC pursuant to the Conservation Authorities Act and O.Reg. 41/24, and does not conform to LTC's Ontario Regulation 41/24 Regulation Policy Document (see ***Appendix 9***). Limiting development proposals such as this is intended to minimize the risk of property damage/loss and investment in an area that is susceptible to natural hazards. As such, staff are not in a position to issue the permit as presented.

LOWER TRENT CONSERVATION

FOR OFFICE USE ONLY			
FILE #		PERMIT #:	
Watershed:		Fee Received:	
Date Received:		Date Deemed Complete:	
Expiry Date:		Pre-consultation Date:	

714 Murray Street
Trenton, Ontario
K8V0N1
(613)394-4829
permits@ltc.on.ca

APPLICATION

FOR DEVELOPMENT ACTIVITIES / INTERFERENCE WITH A WATERCOURSE / WETLAND (CONSERVATION AUTHORITIES ACT, PART VI AND ONTARIO REGULATION 41/24)

Owner's Name:	James Brouwer	Telephone:		Cell: [redacted]
Address:	1225 Shelter Valley Road Grafton, ON	Postal Code:	K0K 2G0	
		Email	admin@graftoncreeksidegolf.ca	
Applicant's Name:	James Brouwer	Telephone:		Cell: [redacted]
Address:	[redacted]	Postal Code:	[redacted]	
		Email	[redacted]	
Contractor & Site Contact:	Brad Graham	Telephone:		Cell: [redacted]

Pre-Consultation: Please indicate if you have conducted any pre-application consultation with a LTC Staff Member.

NO	YES (check method below)				
☐	by phone ☑	by meeting ☑	by email ☑	by site visit ☑	by other method ☐

Location/Address where Development Activity / Interference with a Watercourse or Wetland is proposed (provide Registered Plan and lot number, if known):

Lot:	Concession:	Municipality:	ARN:
18/19	A	Alnwick/Haldiman	14-50-116-020-07600-0000

Description of Proposed Works:	Construct 2500 sqare foot, 2 story clubhouse with deck. Purpose is to have a restaurant with 40 seats and 3 stay and play rooms upstairs. Including a pro shop and golf simulator. Year round operation.
Type and Approximate Quantity of Fill:	TBD with grading plan - submitted ASAP 225 m^3 of fill (92 m^3 of fill within the floodplain, 133 m^3 of fill will be above the floodplain) SR
Existing Site Conditions or Use:	Golf course
Previous Applications to LTC for this Property:	UNKNOWN - Prior to new ownership

Are there any violations on this Property under Ontario Regulation 163/06 or 41/24?	☑ **No**	☐ **Yes** (provide details)	☐ **Unknown**
Are Planning Act approvals in place? (e.g. Zoning, Minor Variance, Site Plan, etc.)	☐ **No**	☐ **Yes** (provide details and attach confirmation documents)	☑ **Unknown**
Has this project been through an Environmental Assessment review?	☐ **No**	☑ **Yes** (provide details)	☐ **Unknown**
Are there any other required approvals? (e.g. MNRF, Fisheries and Oceans Canada, Health Unit)	☑ **No**	☐ **Yes** (provide details)	☐ **Unknown**

Dates when work is to be carried out:	**Proposed commencement of work:**	2025/04/01	**Proposed completion of work:**	2025/12/30

Application is hereby made, to (check appropriate boxes):

☐ Site Grading, Place, Dump or Remove Fill	☑ Place, Dump or Remove Fill in Flood Plain	☐ Interference with Wetland
☑ Alter, Add to, Reconstruct, Renovate Building	☐ Development within Hazardous Land	☐ Alteration to Shorelines
☑ Demolish, Erect, Place, Construct a New Building/Structure	☐ Alter an Existing Watercourse	☐ Large Fill Site

I James Brouwer declare that the above information is correct to the best of my knowledge, and I agree to abide by the provisions of the *Conservation Authorities Act* and *Ontario Regulation 41/24*. By signing this application, I agree to allow Lower Trent Region Conservation Authority (LTC) staff to enter onto the subject property as part of the review process. I also acknowledge and agree to abide by conditions of any permit issued pursuant to this application. Further, any permit issued pursuant to this application may be cancelled if it is issued on the basis of false, inaccurate or misleading information. The personal information on this form is collected under the authority of the *Conservation Authorities Act*, R.S.O. 1990, c 27, as amended. The personal information will be used for the purposes of administering Parts VI and VII of the *Conservation Authorities Act* and *Ontario Regulation 41/24*. Specifically, the information will be used to:

- Evaluate the development proposal
- Liaise with other regulatory agencies having jurisdiction
- Make a decision on the application or report to the LTC Board of Directors for a decision

I understand that this information is part of the public record and is available to the general public.

Date: 2025/01/20 **Signature:** [redacted]

☑ **Owner** ☑ **Authorized Applicant Agent**

LANDOWNER AUTHORIZATION

Subject Property	**Lot:**	18/19	**Concession:**	A
	Street Address:	1225 Shelter Valley Road Grafton, ON		
	Municipality:	Alnwick/Haldimand		

If this application is to be submitted by a solicitor or agent on behalf of the owner(s), this Landowner Authorization must be completed and signed by the owner(s). If the owner is a corporation acting without agent or solicitor, the application must be signed by an officer of the corporation and the corporation's seal (if any) must be affixed.

NOTE TO THE OWNER(S):

If the application is to be prepared by a solicitor or agent, authorization should not be given until the application and its attachments have been examined and approved by you, the owner(s).

I/WE _____ HEREBY AUTHORIZE _____ TO PROVIDE AS MY AGENT ANY REQUIRED AUTHORIZATIONS, TO SUBMIT THE ENCLOSED APPLICATION TO THE LOWER TRENT REGION CONSERVATION AUTHORITY, AND TO APPEAR ON MY BEHALF AT ANY HEARING(S) OF THE APPLICATION AND TO PROVIDE ANY INFORMATION OR MATERIAL REQUIRED BY THE BOARD RELEVANT TO THE APPLICATION FOR PURPOSES OF OBTAINING A PERMIT FOR DEVELOPMENT ACTIVITY/INTERFERE WITH A WATERCOURSE/WETLAND, IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSERVATION AUTHORITIES ACT AND ONTARIO REGULATION 41/24.

SIGNATURE OF OWNER [redacted] **DATE** 2025/01/20

FOR OFFICE USE ONLY	
Application File Number:	Permit File Number:
Subwatershed:	Regulated Feature:
Permit application rec'd:	Application complete:
Deposit Required: Ontario Land Surveyor ($500) ☐ Yes ☐ No	Coastal Engineer ($1,000) ☐ Yes ☐ No
Amendment request rec'd:	Amended application complete:

Fee Required:

☐ Routine	$100
☐ Minor	$220
☐ Standard	$550
☐ Complex (require review of 1 technical study)	$825
☐ Complex (require review of 2 or more technical studies)	$1,100
☐ Permit amendment (administrative)	$100
☐ Permit amendment (significant) - 1/2 original application fee	_____
☐ Compliance permit - double the application fee	_____
☐ Restoration agreement - double the application Fee	_____
☐ Deposit	_____

Amount Received: _____ Date Received: _____

Method of Payment: ☐ Cheque ☐ Credit Card ☐ Cash

Deposit Returned: _____ Date Returned: _____

☐ **Permission for Minor Works:**

☐ Undertake minor landscaping involving the placement, removal or re-grading of material up to 20m³ (minor fill)

☐ Minor shoreline protection up to 20m³

☐ Undertake watercourse or shoreline alteration involving less than 20m² (minor alteration)

☐ Construct a non-habitable accessory structure up to 10m²

☐ Construct a habitable addition up to 10m²

☐ Construct a deck up to 23m²

☐ Install a pool up to 10m²

☐ **Permission for Standard or Complex Permit:**

☐ Construct, reconstruct, erect or place a building or structure (greater than 10m²)

☐ Change building/structure so that it increases its size by 10m² or more, or increases the number of dwelling units

☐ Temporary or permanent placing, dumping or removal of any material originating on the site or elsewhere greater than 20m³

☐ Change or interfere with a wetland

☐ Change or interfere with a watercourse

☐ Shoreline protection work

☐ Construct a deck greater than 23m²

☐ Install a pool greater than 10m²

Permit Approval:

Amendment:

Shelter Valley Creek Golfcourse

COMPLETE APPLICATION REQUIREMENTS *(pursuant to subsection 7(1) of* Ontario Regulation 41/24)

Following the required pre-submission consultation process with LTC staff, in order for the application to be deemed complete, the application must be completely filled out, the required fee must be submitted and all technical information requirements must be submitted. *The owner/applicant must contact LTC prior to making an application* so that detailed information requirements can be determined. *This application must be accompanied by detailed plans for the proposed works and the LTC-determined fee*. The detailed plans must include the following, where applicable:

- ☑ A **Plan of the Area** showing the **Type** and **Location** of the *Development Activity*
- ☐ A **Plan of the Area** showing **Plan View** and **Cross-Section Details** of an *Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☑ A **Description** of the **Proposed Use of Any Buildings and Structures** following completion of the *Development Activity*
- ☐ A **Statement of Purpose** of an *Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☑ The **Start and Completion Dates** of the *Development Activity* or *Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☐ A **Description of the Methods to be Used** in carrying out an *Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☑ The **Elevations of Existing Buildings**, if any, and **Existing Grades and Proposed Elevations of Any Buildings** and **Post-Activity Grades** after the *Development Activity* or *Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☑ ***Pre- and Post-Drainage Details*** *for the Development Activity or Activity to Straighten, Change, Divert or Interfere with the Existing Channel of a Watercourse or Change or Interfere with a Wetland*
- ☐ A **Complete Description of Any Type of Fill** proposed to be placed or dumped
- ☐ A **Confirmation of Authorization** (see previous section) for the proposed activity given by the Owner if the applicant is not the Owner
- ☐ Any **Other Technical Information, Studies or Plans** (see below)

Drawings/Plans:

- ☑ Legal Survey showing the property boundary(ies) and the parcel(s) within the work(s) are to take place
- ☑ Geodetic elevations of the lowest opening(s) in any new building or additions to buildings
- ☑ Structural Elevations and Construction Details
- ☐ Erosion and Sediment Control Plans
- ☑ Grading Plans
- ☐ Landscaping/Site Rehabilitation Plan
- ☐ Topsoil Stripping Details
- ☐ Wetlands/Hydrologic Features Plan

Reports/Studies (including corresponding Plans):

- ☐ Functional Servicing Report
- ☐ Geotechnical/Slope Stability Study
- ☐ Coastal Hazards Assessment/Coastal Engineering Report
- ☐ Hydrogeological Assessment
- ☐ Karst Evaluation Phase 1
- ☐ Karst Evaluation Phase 2
- ☐ Hydrologic Features Assessment (Headwater Feature/Watercourse Evaluation)
- ☑ Hydraulic Assessment/Flood Line Mapping Study/ Floodplain assessment & analysis
- ☐ Hydrostatic Pressure Engineering Assessment Report
- ☐ Scoped or Full Environmental Impact and Enhancement Study
- ☐ Stormwater Management Study/Facility Design Report
- ☐ Fluvial Geomorphological Assessment/Watercourse Erosion Assessment
- ☐ Channel Crossing Assessment

Dropbox Sign

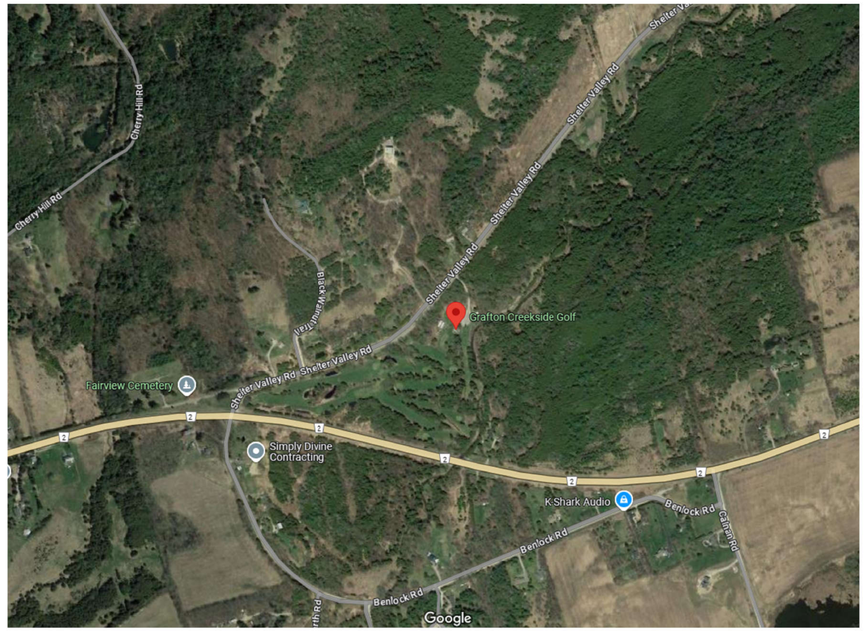
Audit trail

Title	OntReg-41-24-PermitApplication-2024(filled)
File name	OntReg-41-24-Perm...-2024(filled).pdf
Document ID	1dfc223dbb1443298aa2ee91a327f635352a1a41
Audit trail date format	MM / DD / YYYY
Status	Signed

Document History

SENT	**01 / 20 / 2025** 15:10:35 UTC	Sent for signature to James Brouwer ([redacted]) from [redacted] IP: [redacted]
VIEWED	**01 / 20 / 2025** 15:10:51 UTC	Viewed by James Brouwer ([redacted]) IP: [redacted]
SIGNED	**01 / 20 / 2025** 15:11:27 UTC	Signed by James Brouwer [redacted] IP: [redacted]
COMPLETED	**01 / 20 / 2025** 15:11:27 UTC	The document has been completed.

GRAFTON CREEKSIDE GOLF CLUBHOUSE



PRELIMINARY SET.
NOT FOR ISSUANCE OF PERMIT

MH
DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

TITLE PAGE

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB

A00

Scale

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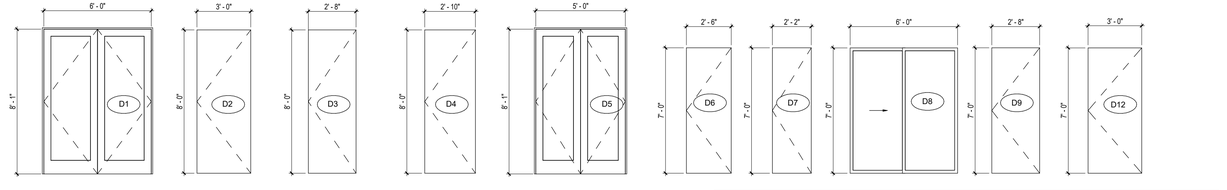
Door Schedule

Type Mark	Description	Width	Height	Rough Width	Rough Height	Level	Count
1	EXTERIOR DOUBLE GLASS DOOR	6' - 0"	8' - 1"	6' - 2"	8' - 2"	GROUND FLOOR	1
2	EXTERIOR SINGLE DOOR	3' - 0"	8' - 0"	3' - 2"	8' - 2"	GROUND FLOOR	2
3	INTERIOR SINGLE DOOR	2' - 8"	8' - 0"	2' - 10"	8' - 2"	GROUND FLOOR	2
4	INTERIOR SINGLE DOOR	2' - 10"	8' - 0"	3' - 0"	8' - 2"	GROUND FLOOR	1
5	2- 30" DOUBLE SWINGING DOORS	5' - 0"	8' - 1"	5' - 2"	8' - 2"	GROUND FLOOR	1
6	INTERIOR SINGLE DOOR	2' - 6"	7' - 0"	2' - 8"	7' - 2"	PROPOSED T/O SECOND FLOOR	4
7	INTERIOR SINGLE DOOR	2' - 2"	7' - 0"	2' - 4"	7' - 2"	PROPOSED T/O SECOND FLOOR	2
8	EXTERIOR SLIDING GLASS DOOR	6' - 0"	7' - 0"	6' - 2"	7' - 2"	PROPOSED T/O SECOND FLOOR	3
9	45 MIN. FIRE RATED INT DOOR	2' - 8"	7' - 0"	2' - 10"	7' - 2"	PROPOSED T/O SECOND FLOOR	5
10	23'-0" NANA WALL SYSTEM W/ 6'-0" SLIDING DOOR	5' - 10"	8' - 0 1/4"	23' - 2"	8' - 2"	GROUND FLOOR	1
11	34' NANA WALL SYSTEM	34' - 0"	8' - 0"	34' - 2"	8' - 2"	GROUND FLOOR	1
12	INTERIOR SINGLE DOOR	3' - 0"	7' - 0"	3' - 2"	7' - 2"	PROPOSED T/O SECOND FLOOR	1
G1	EXTERIOR GARAGE DOOR	11' - 0"	8' - 0"	11' - 0"	8' - 0"	GROUND FLOOR	1



DOOR SCHEDULE
1/4" = 1'-0"

PRELIMINARY SET.
NOT FOR ISSUANCE OF PERMIT

DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

SCHEDULES

Project number	0050
Date	25.04.2024
Drawn by	Author
Checked by	Checker

A01

Scale 1/4" = 1'-0"

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PRELIMINARY SET.
NOT FOR ISSUANCE OF PERMIT

MH
DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

SITE PLAN

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JS/ML

A100

Scale

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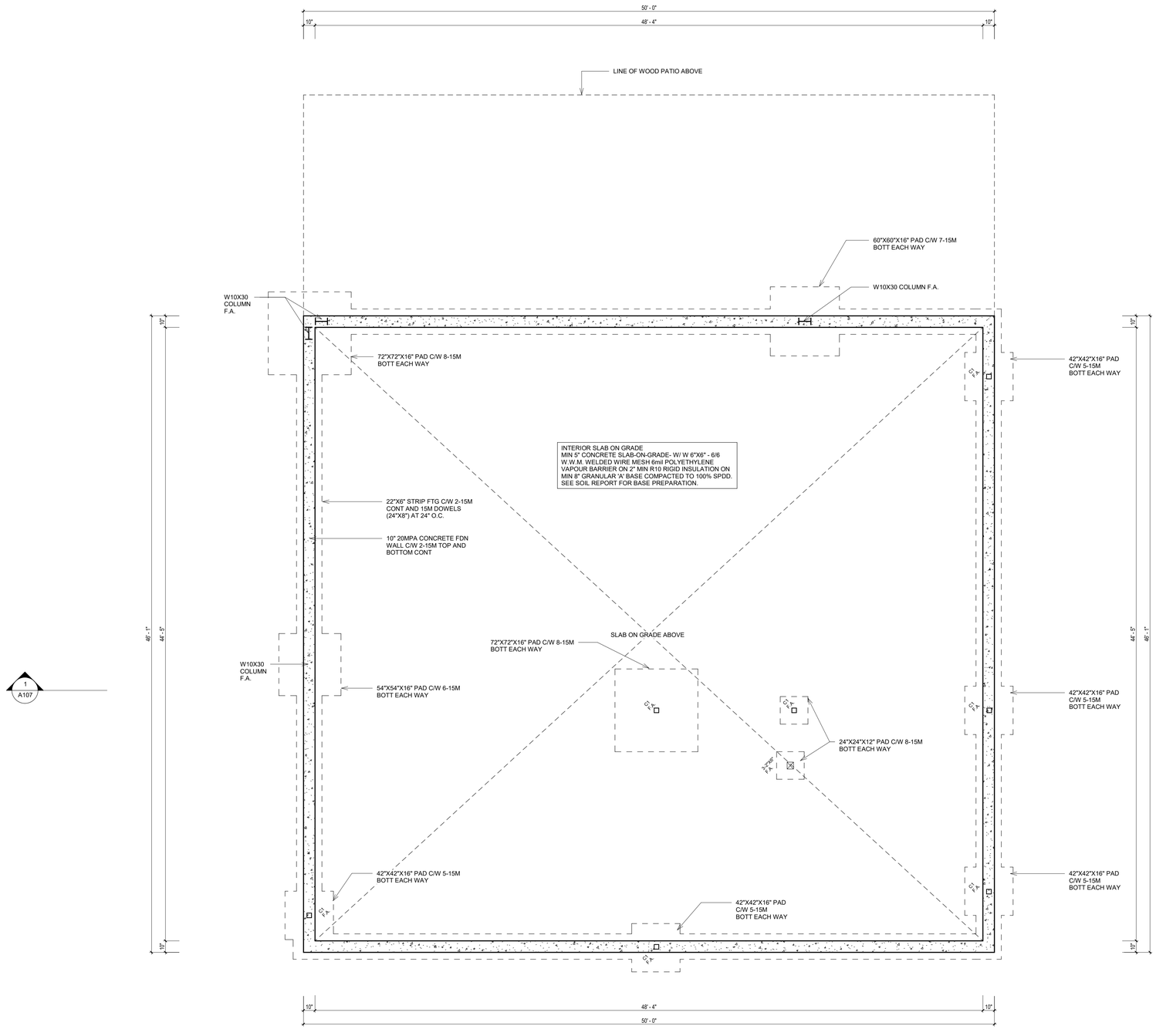

1
A107

1 FOUNDATION PLAN
1/4" = 1'-0"

ALL FOOTINGS SIZED BASED ON 120 KPA SLS BEARING CAPACITY
OWNER TO VERIFY PRIOR TO CONSTRUCTION AND NOTIFY STRUCTURAL ENGINEER OF ANY DISCREPANCY IMMEDIATELY

PRELIMINARY SET.
NOT FOR ISSUANCE OF PERMIT

DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

FOUNDATION PLAN

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB

A101

Scale 1/4" = 1'-0"

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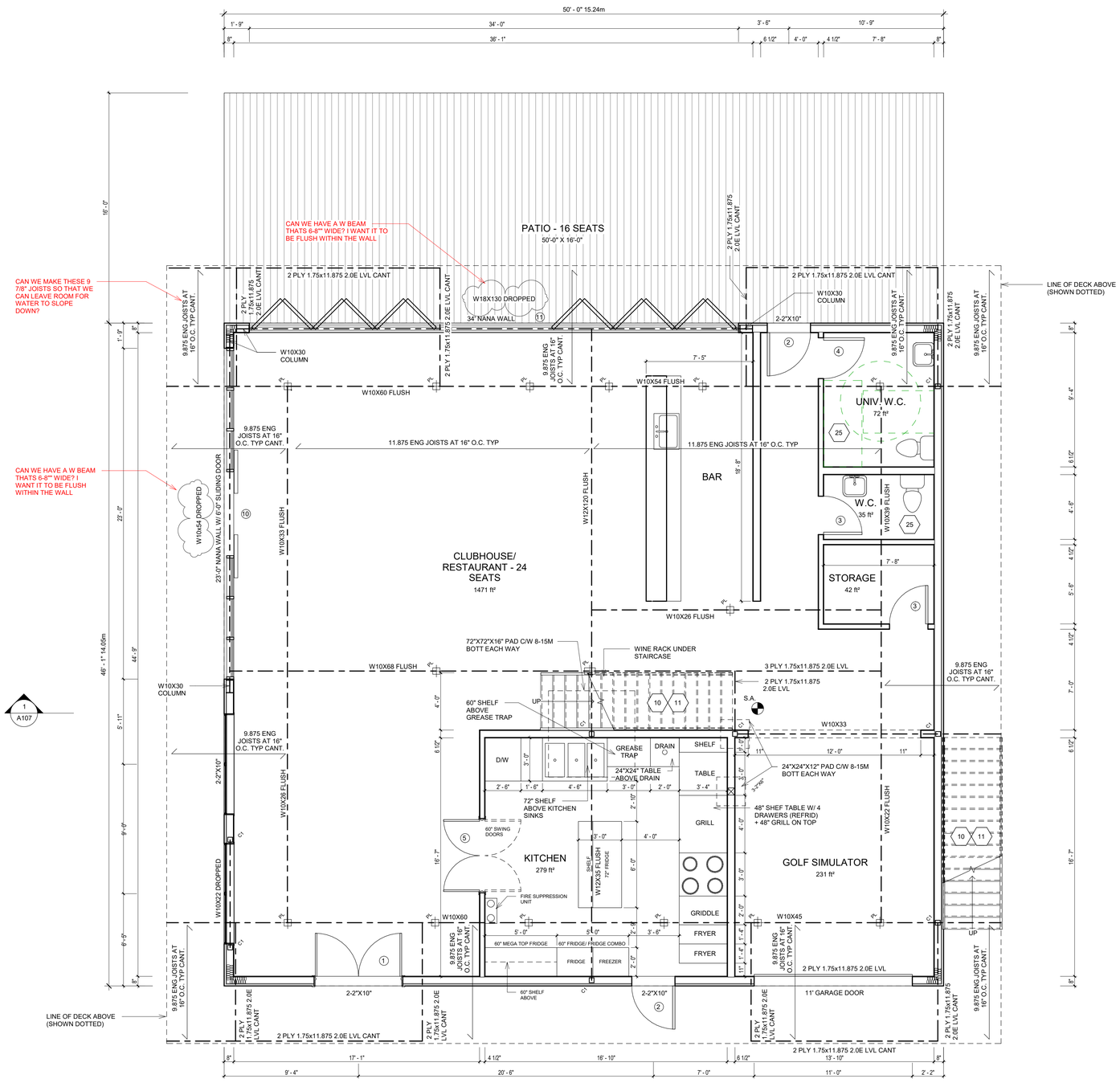

1 A107

1 GROUND FLOOR PLAN - WD
1/4" = 1'-0"

COLUMN SCHEDULE

C1: HSS 3.5X3.5X1/4 C/W 10X5.5X5/8 BOTTOM PL AND 2-5/8" X12" LONG ANCHOR BOLTS W/ 3" HOOK

C2: HSS 5X5X1/4 C/W 10X6X3/4 BOTTOM PL AND 2-5/8" X12" LONG ANCHOR BOLTS W/ 3" HOOK

SB:
MINIMUM 3-2"X6" OR 3-2"X4" BUILT UP COLUMN TO MATCHWALL THICKNESS. SQUASH BLOCKS TO BE PROVIDED TO TRANSFER POINT LOADS THROUGH FLOOR SYSTEM

SOLID BEARING TO BE NO LESS THAN WIDTH OF BEAM SUPPORTED

BUILT UP COLUMNS TO BE NAILED WITH 1 ROW FOR 2"X4" COLUMNS AND 2 ROWS, STAGGERED FOR 2"X6" COLUMNS, AT 8 1/2" O/C. NAIL LENGTH TO MATCH BUILT UP COLUMNWIDTH.

columns
3/16" = 1'-0"

PRELIMINARY SET. NOT FOR ISSUANCE OF PERMIT

MH DESIGN + STUDIO

No.	Description	Date
1	Revision 1	Date 1

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD, GRAFTON ON K0K 2G0

GROUND FLOOR

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB
Scale	As indicated

A102

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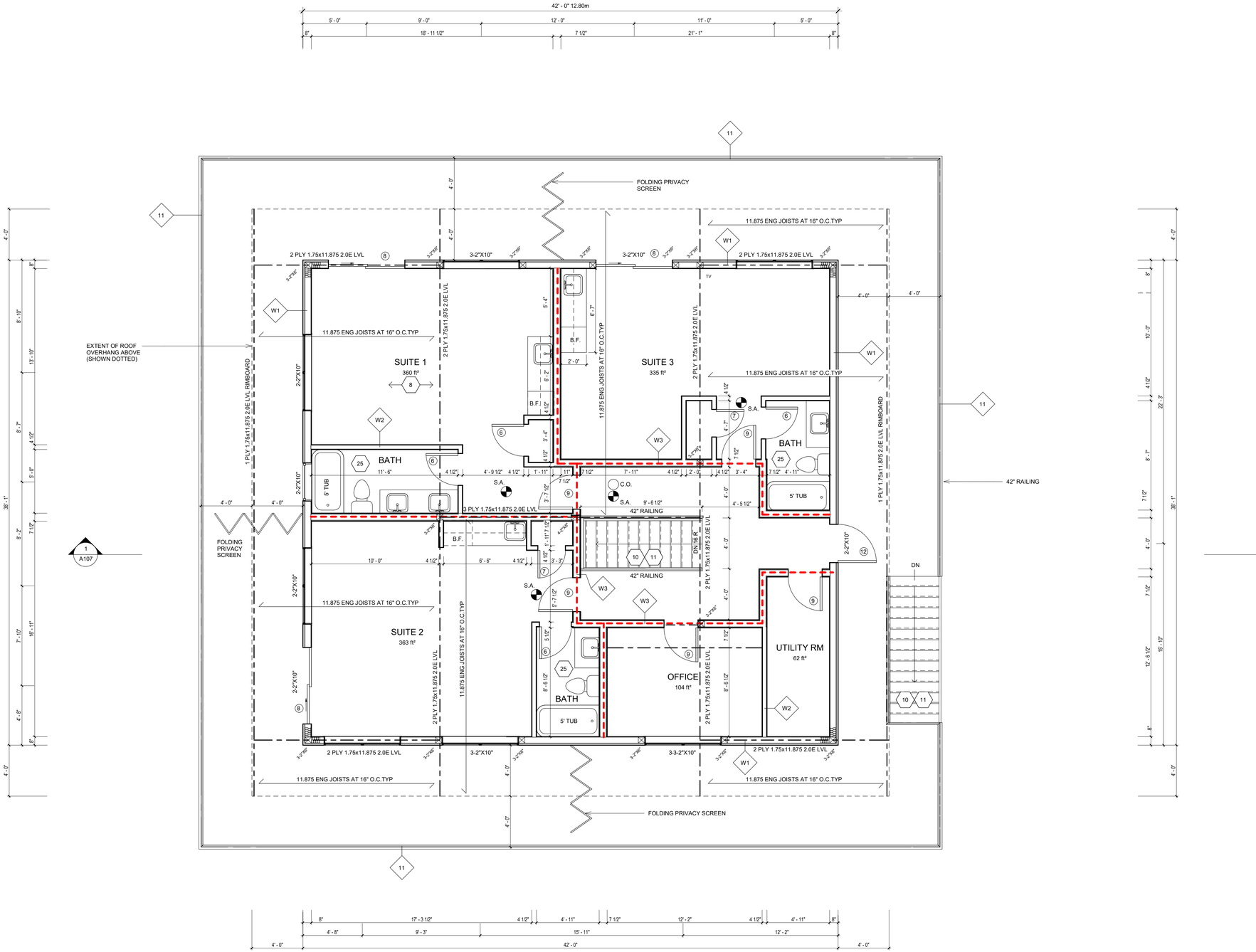

1 PROPOSED T/O SECOND FLOOR - WD
1/4" = 1'-0"

PRELIMINARY SET. NOT FOR ISSUANCE OF PERMIT

MH DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

SECOND FLOOR

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB

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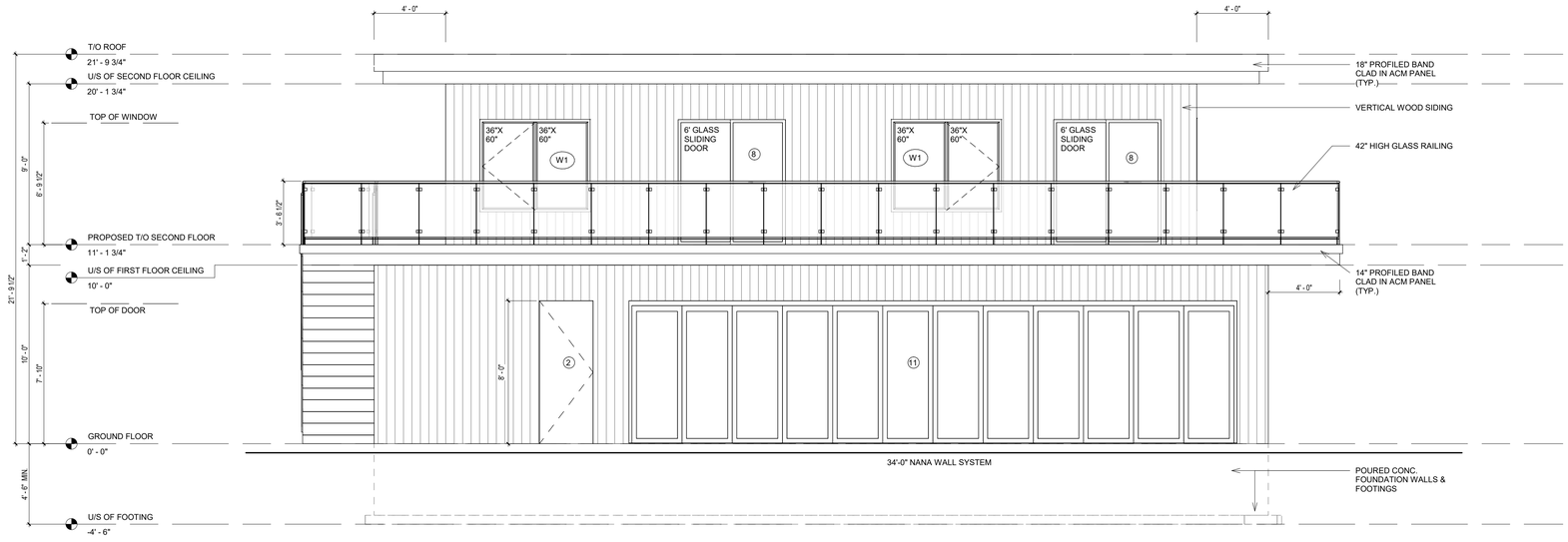

1 FRONT ELEVATION - WD

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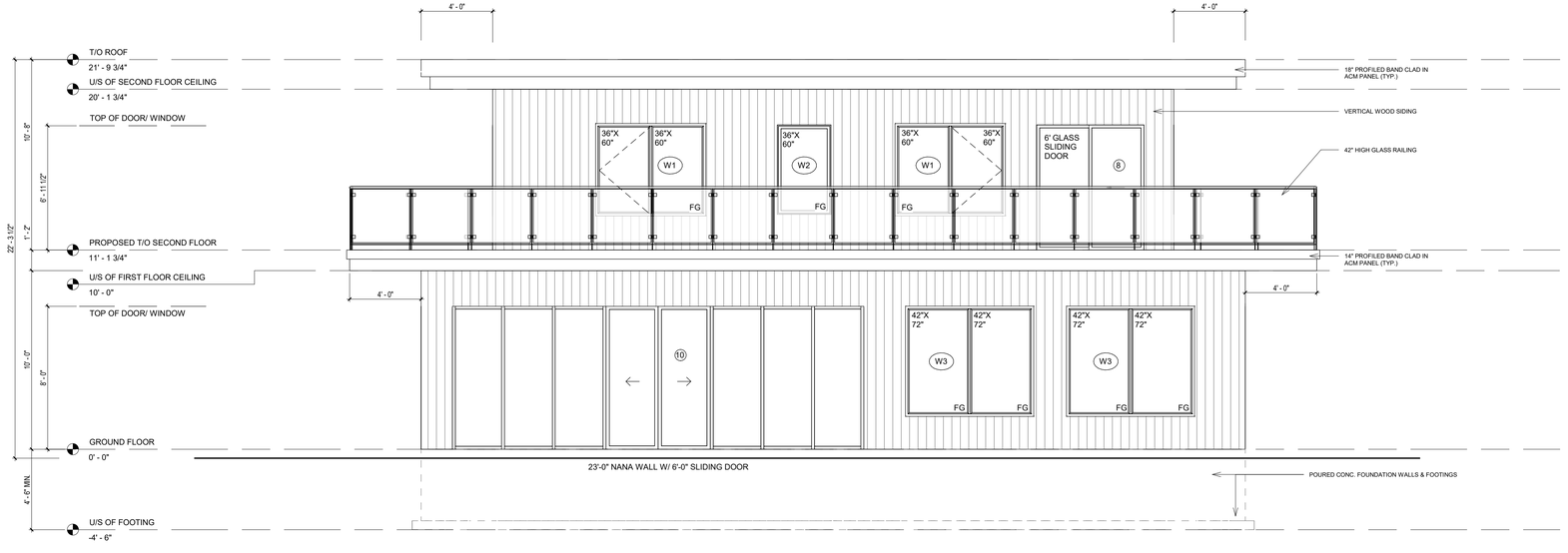

2 LEFT ELEVATION - WD

1/4" = 1'-0"

PRELIMINARY SET. NOT FOR ISSUANCE OF PERMIT

DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD, GRAFTON ON K0K 2G0

FRONT & LEFT SIDE ELEVATION

Project number	0050
Date	25.04.2024
Drawn by	Author
Checked by	Checker

A104

Scale	1/4" = 1'-0"

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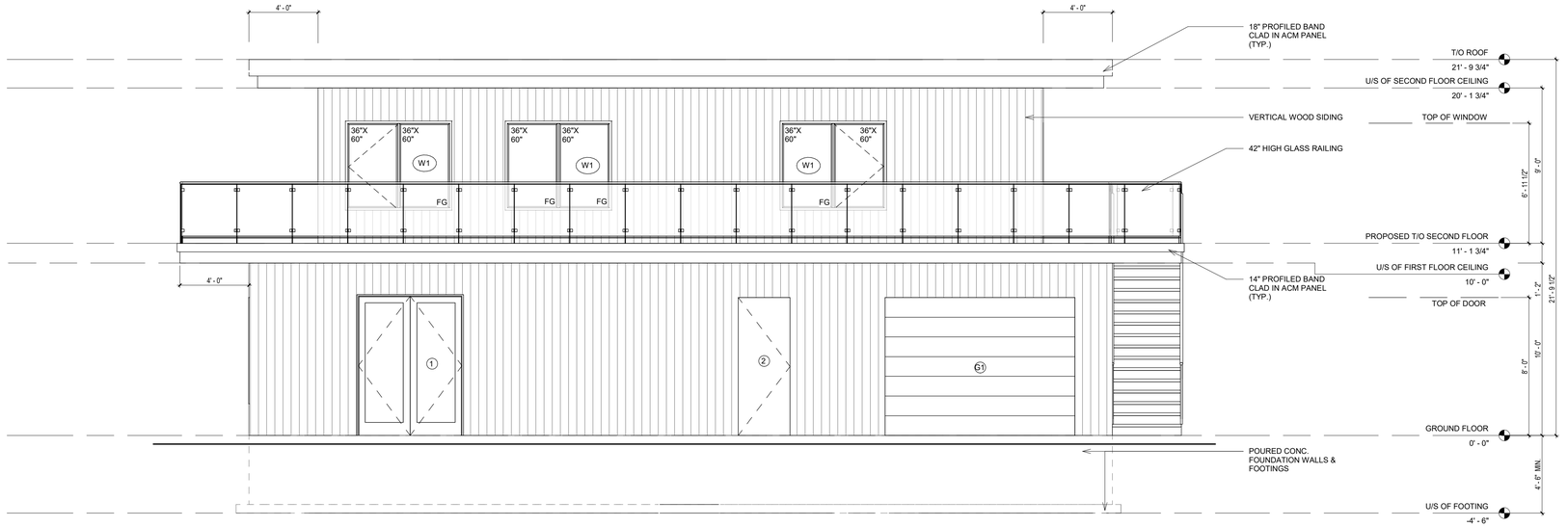

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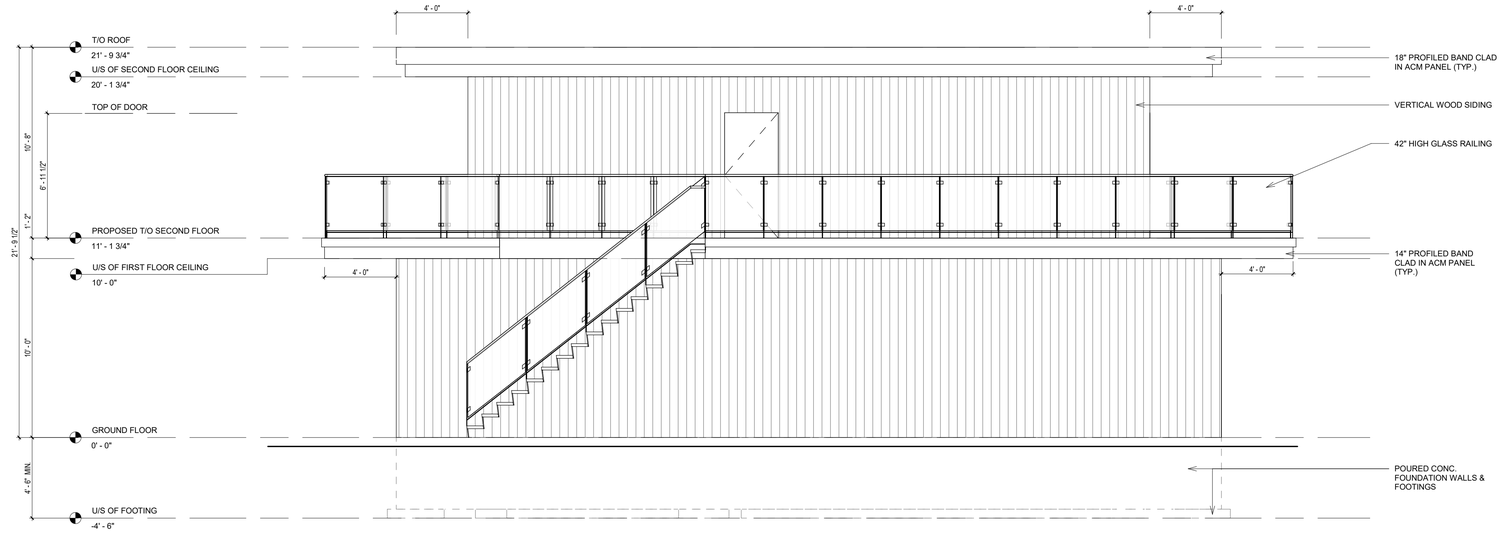

2 RIGHT ELEVATION - WD

1/4" = 1'-0"

PRELIMINARY SET. NOT FOR ISSUANCE OF PERMIT

DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD, GRAFTON ON K0K 2G0

REAR & RIGHT SIDE ELEVAITON

Project number	0050
Date	25.04.2024
Drawn by	Author
Checked by	Checker

A105

Scale 1/4" = 1'-0"

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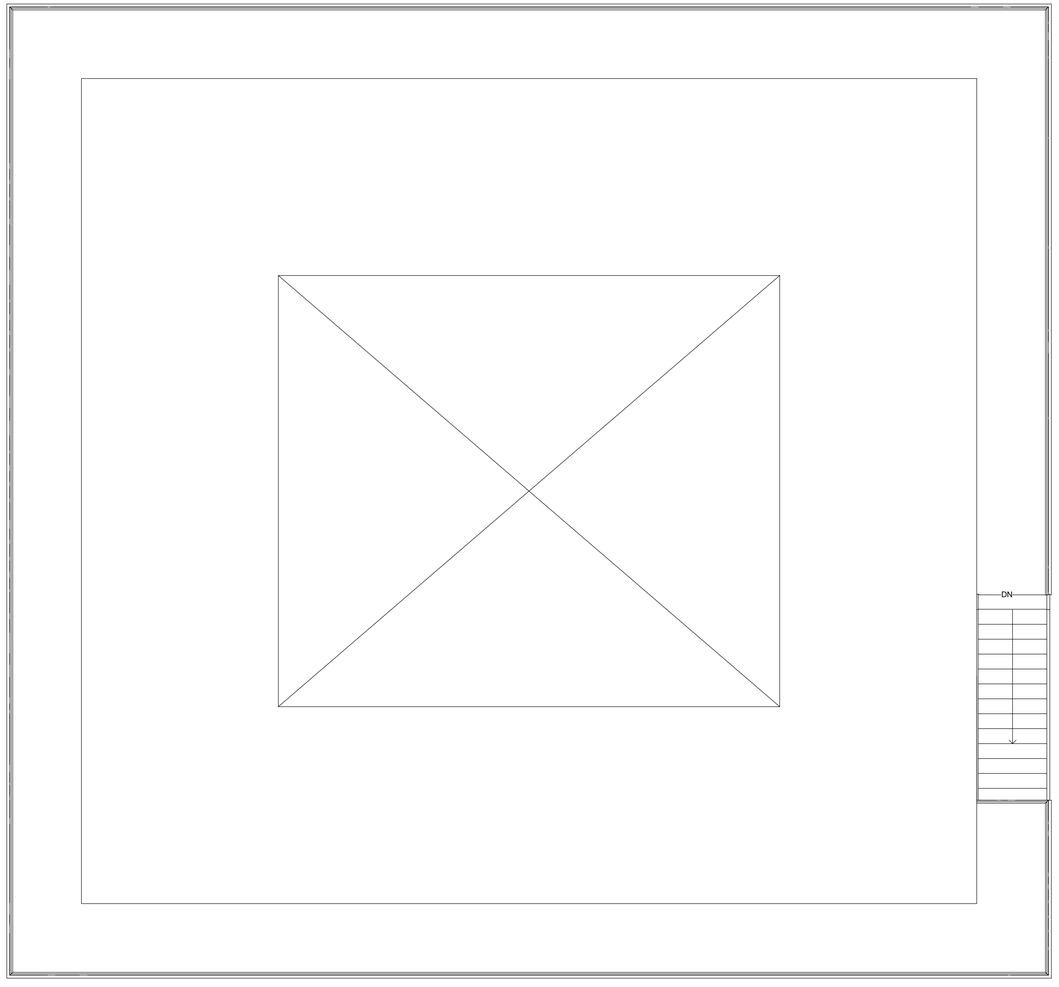

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A107

1 T/O ROOF - WD
1/4" = 1'-0"

PRELIMINARY SET.
NOT FOR ISSUANCE OF PERMIT

MH
DESIGN + STUDIO

No.	Description	Date

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD,
GRAFTON ON K0K 2G0

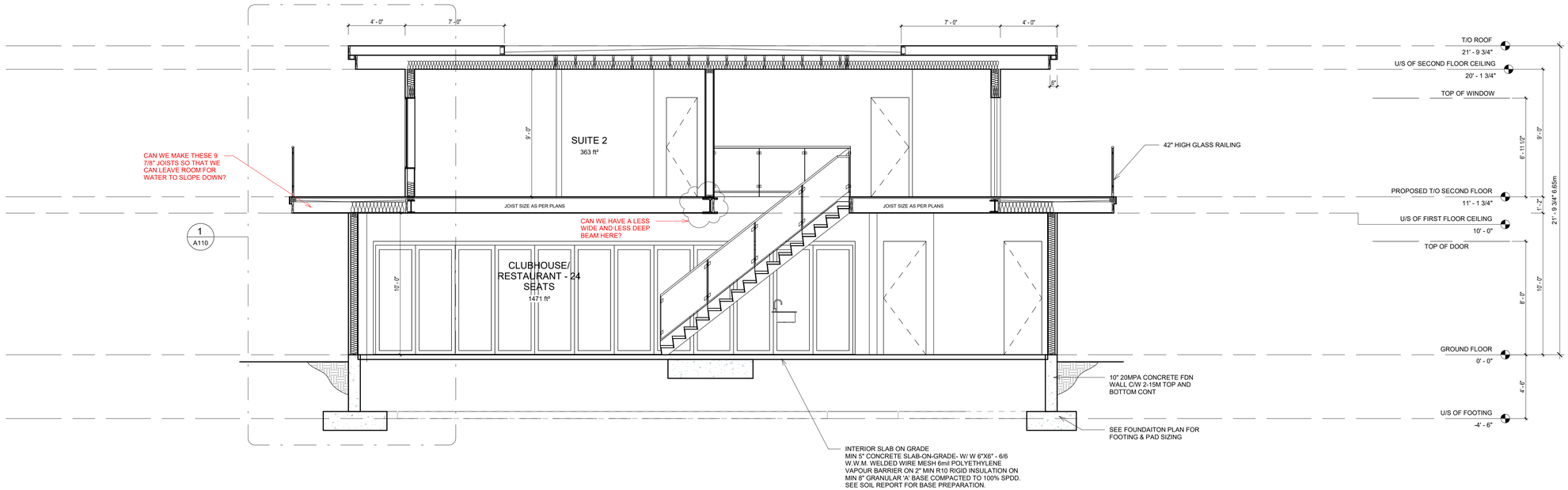
ROOF PLAN

Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB

A106

Scale 1/4" = 1'-0"

2025-01-12 7:33:12 PM



1 SECTION A
1/4" = 1'-0"

PRELIMINARY SET. NOT FOR ISSUANCE OF PERMIT

DESIGN + STUDIO

No.	Description	Date
1	Revision 1	Date 1

JAMES BROUWER & BRAD GRAHAM

1225 SHELTER VALLEY RD, GRAFTON ON K0K 2G0

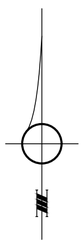
SECTION A

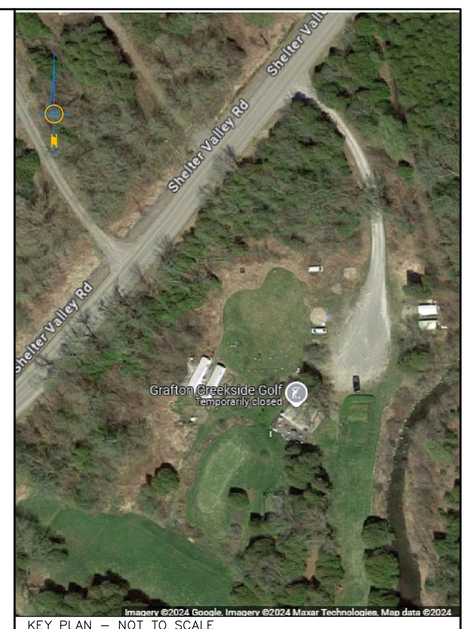
Project number	0050
Date	25.04.2024
Drawn by	MH
Checked by	JB

A107

Scale 1/4" = 1'-0"

2025-01-12 7:33:12 PM





KEY PLAN – NOT TO SCALE

IMAGERY

AERIAL IMAGERY SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT DEPICT CURRENT FEATURES.

TOPOGRAPHIC BASE PLAN OF

1225 SHELTER VALLEY ROAD

(GEOGRAPHIC TOWNSHIP OF HALDIMAND)
TOWNSHIP OF ALNWICK & HALDIMAND

SCALE 1 : 300 METRES

0 1 2 3 4 5 10 25

COORDINATES

COORDINATE VALUES AND DIGITAL FILE ARE IN GRID SYSTEM, UTM ZONE 18 (75° WEST LONGITUDE), NAD83(CSRS)v7(2010). COMBINED SCALE FACTOR = 1.000301

CONTOURS

CONTOURS SHOWN HEREON ARE DRAWN AT 0.20 METRE INTERVALS AND ARE SUPPLEMENTED WITH WITH LIDAR DTM DATA DERIVED FROM PROVINCIAL DATA PACKAGE: Lidar DTM Peterborough 2016–18 Package C.

ELEVATIONS

ELEVATIONS ARE GEODETIC AND REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD28:78) BY DIRECT MEASUREMENT TO A REAL TIME NETWORK.

CAUTION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK. THE WORK AND DRAWINGS HEREIN WERE COMPLETED FOR THE EXCLUSIVE USE OF OUR CLIENT AND NO LIABILITY IS ASSUMED TO ANY THIRD PARTIES OR SUBSEQUENT OWNERS.

IBW SURVEYORS
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PARTY CHIEF: ZP/TC	DRAWN: AAC	CHECKED: *	PLOT DATE: OCT. 24, 2024	A–046694
FILE: A–046694–TopoV1				

1 SITE PLAN
SCALE: 1:300

No.	DESCRIPTION	DATE
	REVISIONS	
	ISSUED FOR CONSTRUCTION	
	ISSUED FOR BID	
	ISSUED FOR BUILDING PERMIT	
	ISSUED FOR SITE PLAN APPROVAL	
	SUBMITTALS	

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE COMMENCING WORK OR FABRICATION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.

DO NOT SCALE DRAWINGS.

DRAWING:
NEW 2 STOREY BUILDING
ON
1225 SHELTER VALLEY RD
TOWNSHIP OF HALDIMAND

DRAWING: SITE PLAN

PLOTTED: N/A

DATE: 11-01-2025

PROJECT No: 029-2022

SCALE: AS NOTED

DRAWN BY: M.H.

REVIEWED BY: J.B.

DRAWING No: A1.0

Floodplain Assessment

Grafton Creekside Golf

For the

Proposed Clubhouse Replacement

February 28, 2025

Prepared by:

Elliott Fledderus, P. Eng.

elliott@jewelleng.ca

JEWELL ENGINEERING

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Belleville, ON, K8N 4Z5

Phone: (613) 969-1111

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1 Objective & Background

Grafton Creekside Golf is located along Shelter Valley Road in Grafton, ON. It is immediately northeast of the intersection of Shelter Valley Road and County Road 2 (see **Figure 1-1**).

The Owner is seeking to replace the existing clubhouse building in approximately the same location. We understand that Lower Trent Region Conservation Authority (LTC) has requested a *Floodplain Assessment* to determine the potential flood hazard imposed by the Shelter Valley Creek floodplain. The creek runs along the east side of the golf course in a general north-south direction.

From a local perspective, Shelter Valley Creek is a large and historic natural channel. It is considered the major creek that flows through the Grafton area. It has a catchment area of **61 km^2** at the location of the subject property. The watershed is of sufficient size and interest that it hosts a Water Survey of Canada flow gauge a short distance downstream at Benlock Road.

Our assessment was completed with the following objectives:

1. Identify the flood hazard limits in the vicinity of the clubhouse,

2. Review and analyze the flow gauge record to establish reasonable 100-yr and Timmins peak flow values, and

3. Recommend a final floor elevation for the building. The building must have final floor elevation ≥ 0.3m above the peak water level in the regulatory storm event.

The above conditions were established based on the 2002 MNR *Technical Guide: River & Stream Systems: Flooding Hazard Limit* and the current version of the LTC Policy Document.

Jewell's scope of work includes the Floodplain Assessment for the subject property. Other engineering items (geotechnical, structural, slope stability, meander belt, erosion, etc.) are assumed to either not be applicable or completed by others.

It is assumed the proposed clubhouse building is in the same location as the existing building.

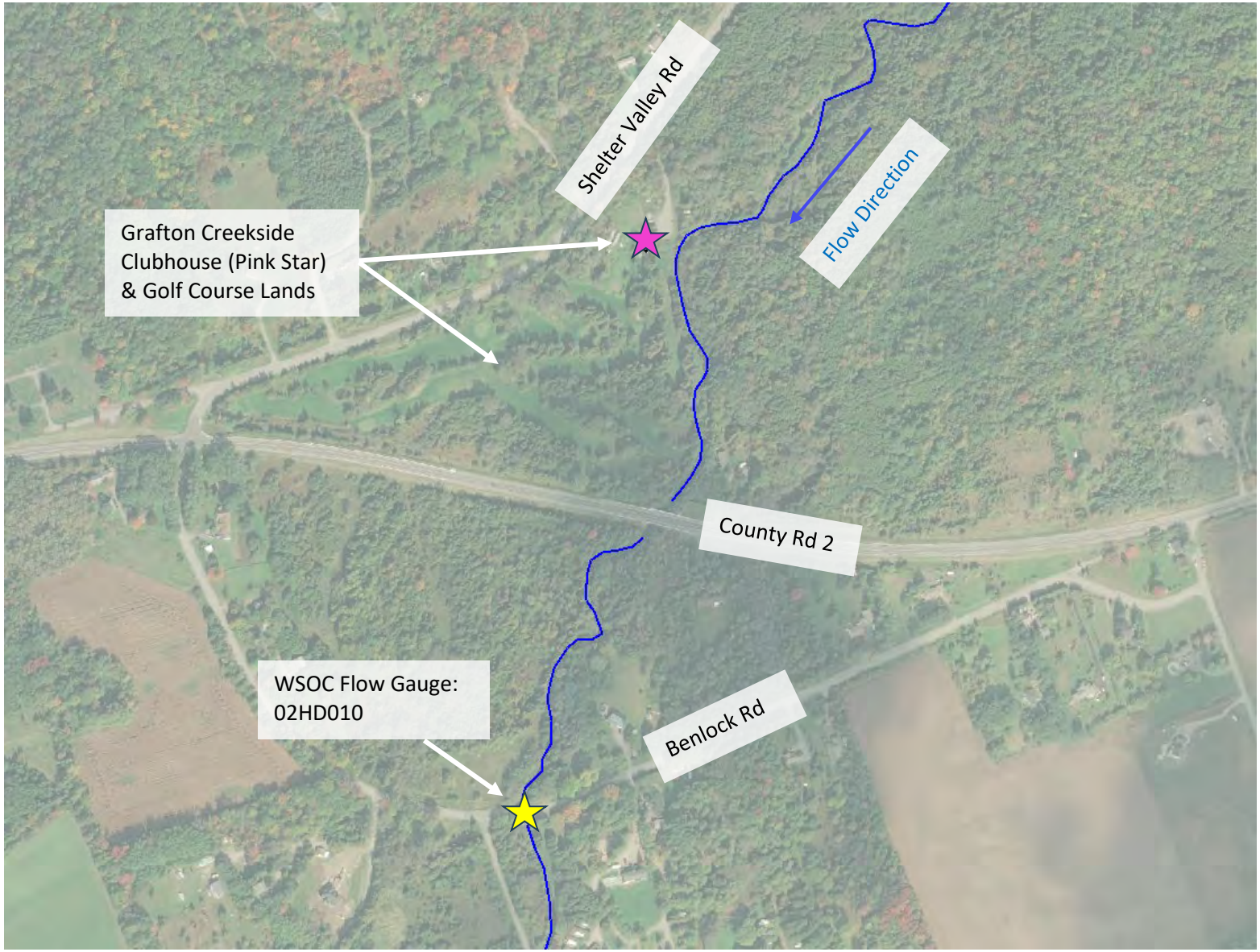


Figure 1-1: Grafton Creekside Clubhouse Location

2 Hydrology

An assessment of the hydrology characteristics was completed to ultimately identify a regulatory peak flow for use in the hydraulic model. Considerations in the hydrology assessment include catchment area, rainfall, flow gauge data, statistical analysis, and extrapolation where appropriate. A discussion of each is provided below.

Note that historic hydrology results were not applied in this analysis since application of the current flow gauge data record would yield a more reliable result than historic theoretical peak flow outputs.

2.1 Catchment Area

Figure 2-1 shows the **61 km^2** watershed contributing to the flood hazard limits at the subject property. The catchment was delineated using the Ontario Watershed Information Tool (OWIT) published by the Ontario MNR. The catchment area is slightly overestimated since the flow gauge to be discussed in **Section 2.3** was selected as the node of interest, which is located a short distance downstream of the site.

2.2 Precipitation

The subject catchment is located within LTC jurisdiction and Zone 3 of the *Flood Hazard Criteria Zones of Ontario and Conservation Authorities*. For Zone 3, the regulatory event is the Timmins or 100-yr storm, whichever is greater.

For return period rainfall data, the Environment Canada (EC) published IDF data at the Trenton Airport station was selected based on its proximity and long record of reliable data (see **Appendix A**).

The standard Timmins rainfall intensities, consistent with *MTO Design Chart 1.04,* were applied for the regulatory event. A 94 percent rainfall volume was then applied to account for the size of the catchment, resulting in a total rainfall depth of 181.4mm.

2.3 WSOC Flow Gauge

There is a Water Survey of Canada (WSOC) flow gauge conveniently located a short distance downstream of the clubhouse. It is located next to Benlock Road, 380m south of County Road 2 as shown previously in Figure 1-1.

The WSOC flow gauge station is **02HD010 Shelter Valley Brook near Grafton.** Due to its proximity to the site, the values shown at the flow gauge do not need to be transposed for use at the subject property (a slightly conservative assumption).

The flow gauge has a long period of record, from 1967 to present. This length of record supports the statistical analysis in **Section 2.4**.

2.4 General Frequency Analysis

A general frequency analysis (GFA) was completed for the peak flow records.

The GFA was completed using the Consolidated Frequency Analysis (CFA) program and a three parameter log normal distribution. This is the preferred distribution as identified in the 2002 MNR Technical Guide. The CFA program was selected rather than HEC-SSP since the CFA software allows for the three parameter option, whereas SSP is limited to the two parameter log normal distribution.

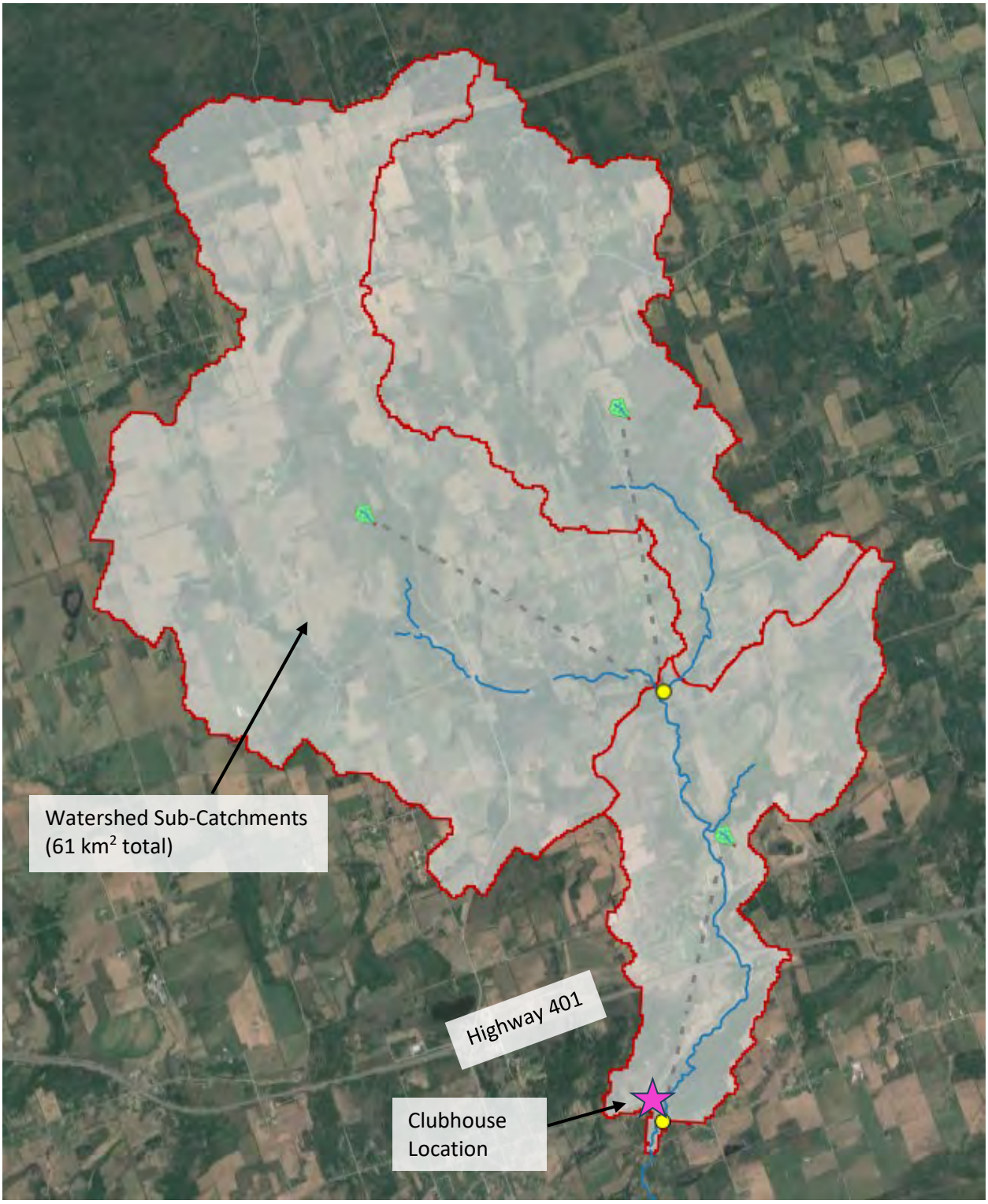


Figure 2-1: Three (3) Primary Sub-Catchments to WSOC Flow Gauge 02HD010

A review of the flow gauge results suggests that the snowmelt influenced condition produces the largest peak flow readings. The data in **Appendix B** summarizes the probability of a snowmelt event or rainfall event producing the largest peak flow in any given year based on historical results. It suggests a 77% probability the annual peak will occur during the snowmelt plus rain event, compared to a 23% probability for rainfall only events. This suggests that the watershed is more resilient to rainfall events than snowmelt driven events.

We received flow gauge records at 15-minute intervals from 1969 to 2011 from ECCC staff. This detailed record allows us to idenfity the instantaneous peak flow for each year for the full dataset but also for the rainfall only setting.

The rainfall only setting is important because it allows us to separate the rainfall events from the snowmelt period. The Timmins event is a historical storm that has an extreme rainfall and is intended to be applied under an average antecedent moisture condition (AMC). The Timmins storm is not intended to be assessed in a spring melt or frozen ground condition for the purposes of identifying the regulatory peak flow. Therefore, to understand the watershed response to rainfall only events, the period between May 15 to December 31st was given its own 'bin' of data.

A discussion of the GFA results for the full and rainfall only datasets is provided in the following subsections. For ease of reference, the CFA return period peak flows for each dataset is summarized below in **Table 2-1**.

Table 2-1: CFA Peak Flow Results for Shelter Valley Creek WSOC Flow Gauge

Return Period	Rain Only	Combined	Combined (1980 Removed)
	m^3/s		
2	6.6	13.6	12.5
5	10.1	23.6	19.1
10	12.7	31.7	24.1
20	15.3	40.6	29.4
50	18.9	53.6	36.8
100	21.7	64.6	42.9

2.4.1 Full Dataset

We assume the snowmelt plus rain season is from January 1 to May 15th of each year.

Figure 2-2 provides a scatter plot with the instantaneous peak flows for the potential snowmelt period in each year of the records. There was an exceptionally large peak flow value for the 1980 season. This peak flow is designated in the WSOC data as "E" for "Estimated", meaning the flow gauge did not record the data and it was estimated based on the water level reading.

It is unclear whether there was a blockage that caused the high-water level at the flow gauge or if the peak flow was actually as high as shown. In a formal Shelter Valley Creek study, we would recommend that local residents, Township and CA staff (past or present), and ECCC be requested to provide input on

possible background information to verify the likelihood of this flow result. In the absence of clarification, we conservatively assume this peak flow occurred and we have included it in the data set.

In our own background investigation of the 1980 event, we noticed that the exceptionally high 1980 peak flow occurred on March 21st. There was a stretch of cold weather spanning from end of January up to a few days prior to the flood event with limited opportunity for intermittent snowmelt. Further, the month of February had nearly double the average monthly snowfall, and there was also significant snowfall earlier in the month of March. Then, several consecutive days of warming just prior to March 21st occurred *in addition to* 70mm of rainfall measured at the Cobourg STP weather station (a rainfall volume that is a 5 to 10-yr event on its own). With saturated ground conditions and a combined runoff volume from the heavy snowmelt and rainfall, the superposition of these factors could explain why the 1980 event of 74.9 m^3/s was so dramatically larger than the next largest peak flow in the station's history of 39.7 m^3/s.

Figure 2-3 shows the scatter plot with the 1980 event removed.

The impact of the 1980 event on the statistical flow results is summarized in Table 2-1. With the full dataset, the 100-yr peak flow is 64.6 m^3/s. If the 1980 event were not included, the 100-yr peak flow would be 42.9 m^3/s.

2.4.2 Rainfall Events

For the purpose of this investigation, we assume the rainfall only period is from May 15 to December 31st of each year.

Figure 2-4 provides a scatter plot with the instantaneous peak flows for each year (between May 15 – Dec. 31) in the records.

Table 2-1 includes the peak flow results for the rainfall only events.

Figure 2-5 matches up the rainfall only return period peak flows from Table 2-1 with the return period rainfall totals at the 'Trenton A' station. The relationship between the flows and rainfall is reasonably linear, indicating that it is reasonable dataset for extrapolation.

There is no event close to the 181.4mm Timmins event at this location. Therefore, extrapolation is the next best option for a reasonable approximation of the Timmins storm. The Timmins event is applied as a 12-hr storm and therefore a 12-hr duration was selected from the Trenton IDF rainfall data. A Timmins peak flow of 55 m^3/s was selected for application in the hydraulic model discussed in **Section 3**.

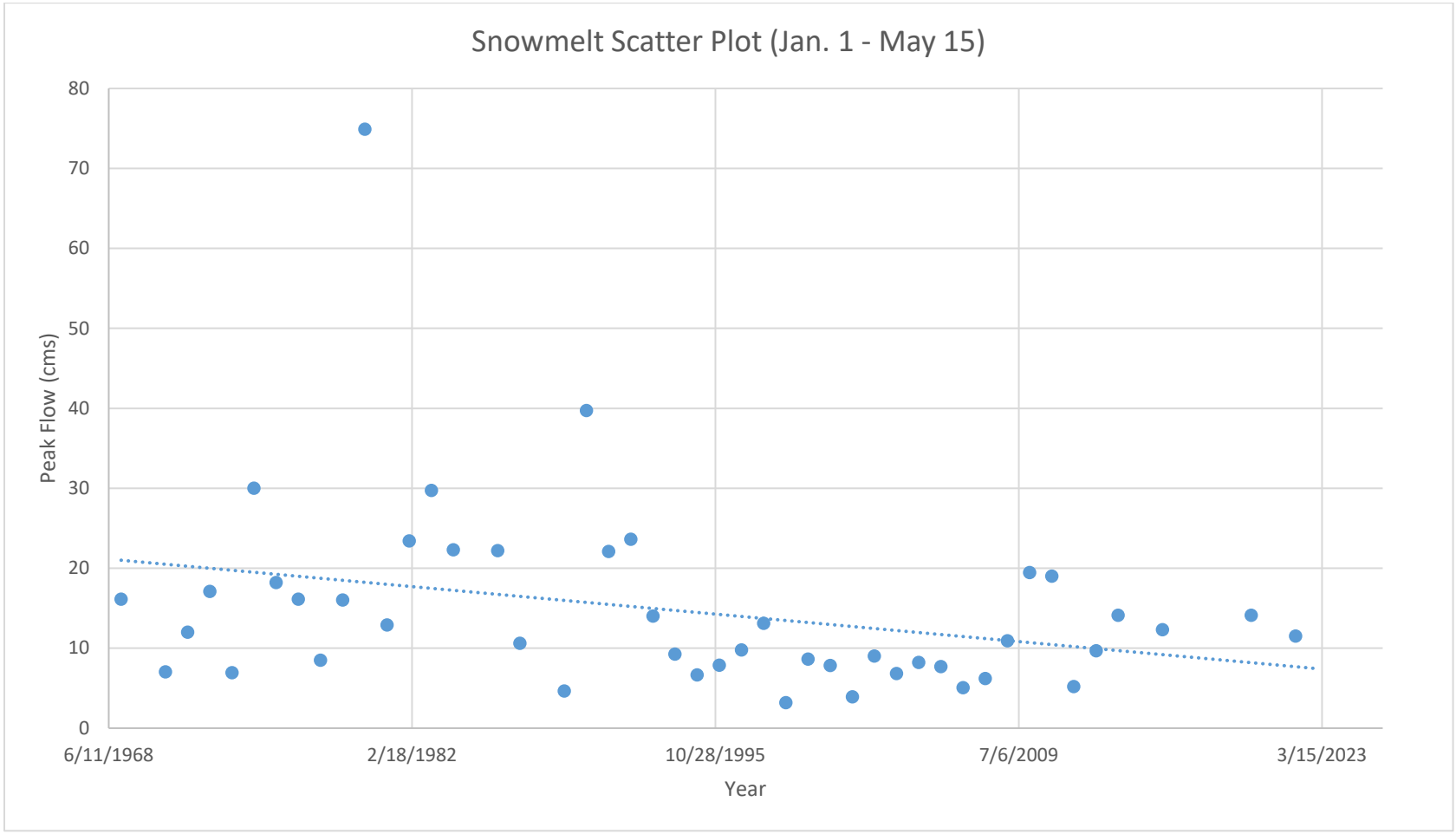


Figure 2-2: Snowmelt Scatter Plot Representing Annual Instantaneous Peaks Between January 1 – May 15

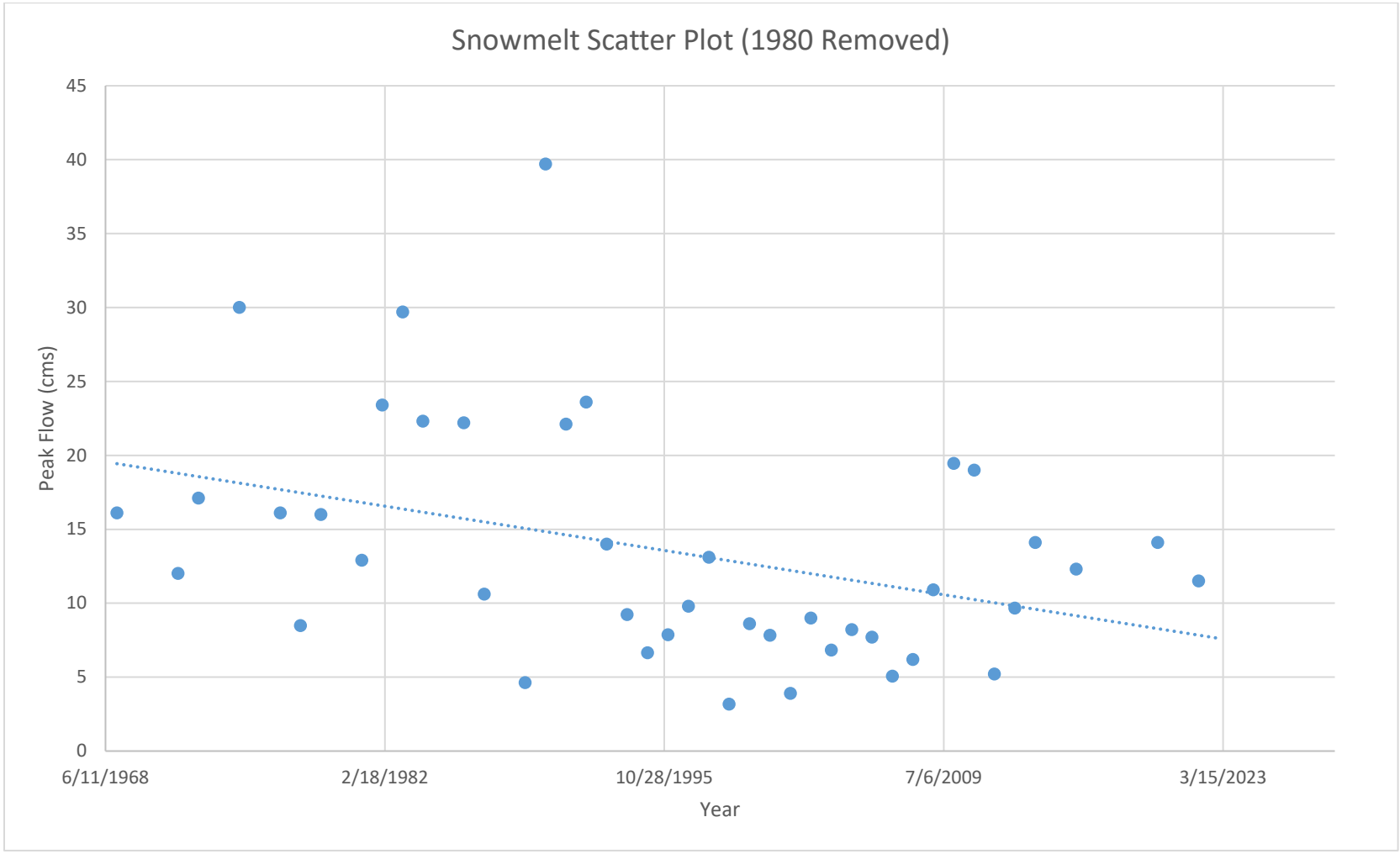


Figure 2-3: Snowmelt Scatter Plot with 1980 Event Removed

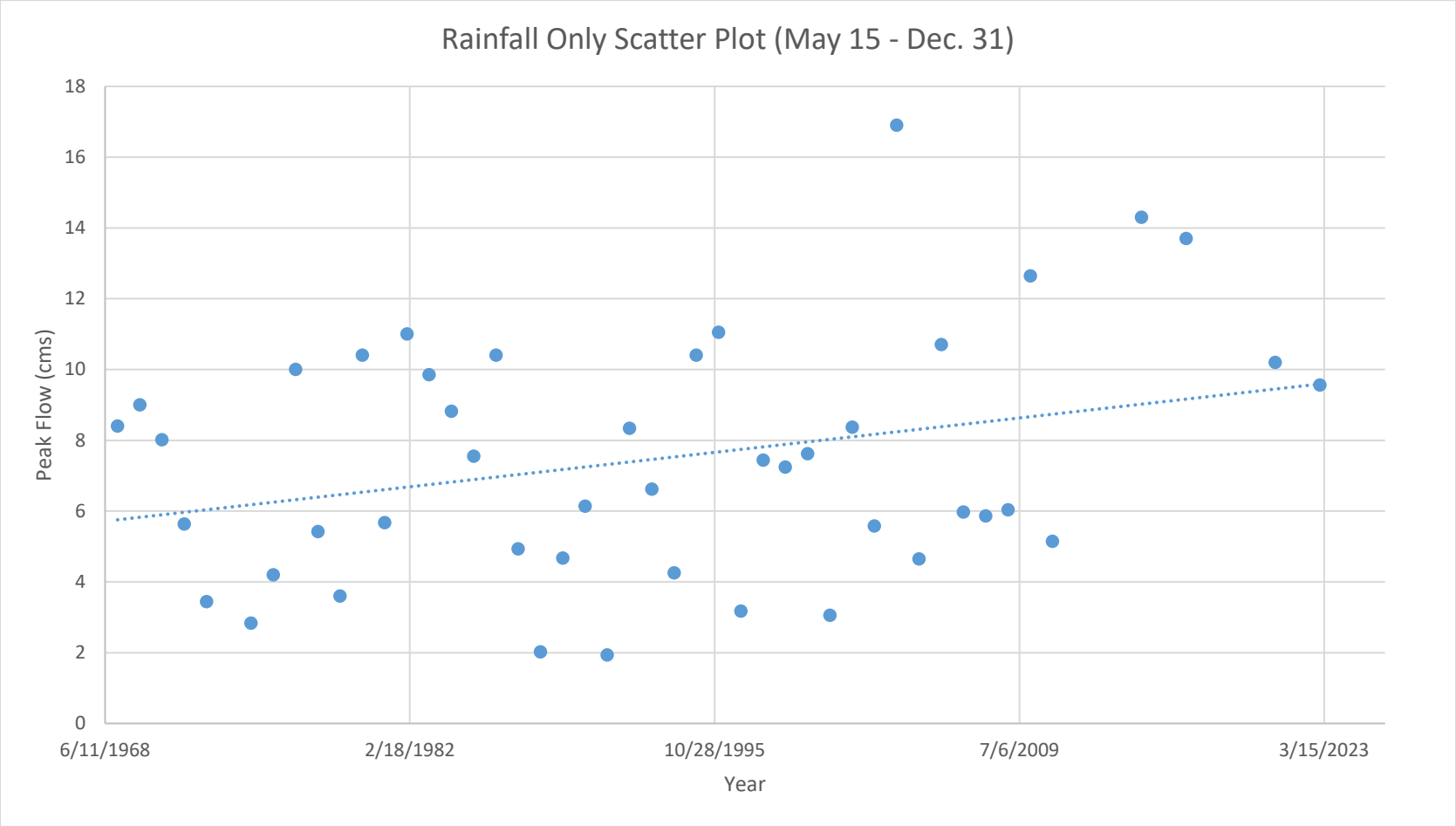


Figure 2-4: Rainfall Scatter Plot Representing Annual Instantaneous Peaks Between May 15 – December 31

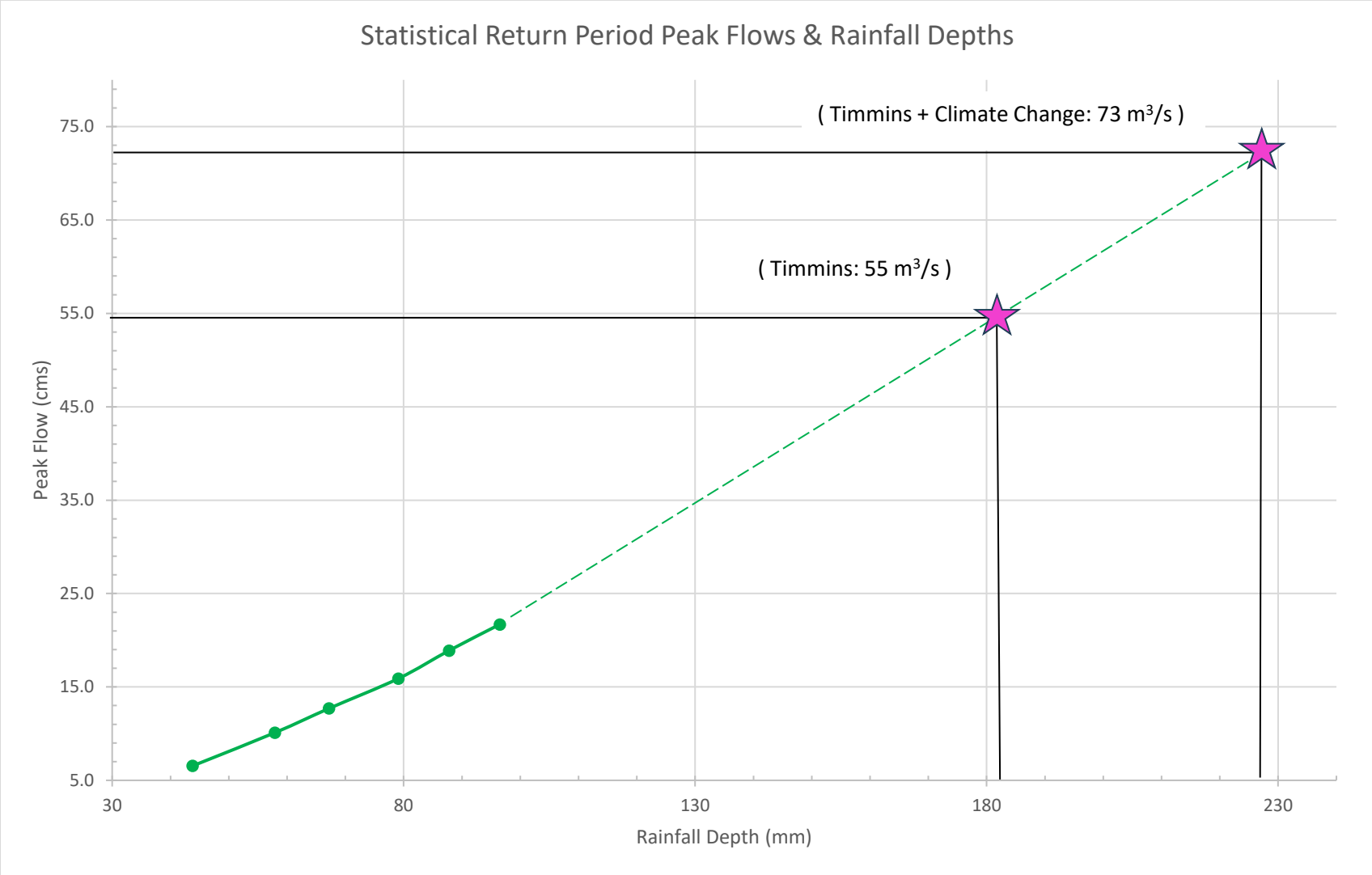


Figure 2-5: Extrapolation for Timmins Event with Pairing of Statistical Flows and Rainfall Depths

2.5 Calibration Opportunities

Ideally, the Timmins 181.4mm rainfall event would be calibrated using a known large rainfall event of similar magnitude. The next best calibration event would be rainfalls with depths similar to that of the statistical 100-yr rainfall.

For nearby local flow gauge stations, the 2004 Frances storm provides excellent opportunity for calibration. The 2004 Hurricane Frances event produced high rainfall and peak flow recordings at Shelter Valley Creek as well as several other local stations including Trenton, Brighton, and Belleville.

The nearest ECCC weather station for the subject property is the Cobourg station. A rainfall total of 93.8mm was observed at this station during the Frances event.

For the Shelter Valley Creek gauge, its measured hydrograph in the 2004 event is shown in **Figure 2-6**. This hydrograph is unusual, as it displays a large, sharp peak that is inconsistent with the remainder of the hydrograph shape. A sharp peak would be expected if there was an adjacent large development area, or a reservoir that experienced overtopping, but neither of these characteristics are apparent in the subject watershed. Further, this sharp peak is not evident in the other rainfall events that produced high flows (see **Figure 2-7**). The sharp peak is also not apparent in a review of spring melt hydrographs that produced larger flows than the Frances event.

In model calibration, the objective is to iteratively dial the inputs to match the shape, peak flow, and time to peak as much as feasible until a realistic and repeatable output result is achieved when validating the calibrated parameters against several additional events.

As shown in Figure 2-6, the slope of the rising and falling limb, time to peak, and peak value are reasonably matched in our calibration effort. However, with no explanation for the “one-off” sharp peak, a lack of consistency of the 2004 hydrograph with other measured hydrographs, and no indication that a sharp peak would occur based on the watershed characteristics, the inputs applied are not recommended for use in a model of the Timmins event. Therefore, the extrapolation identified in previous Subsection 2.4 is recommended as the more reliable alternative.

The WSOC flow gauge results are considered a reliable data source. The sharp-peak may have been a result of higher water level readings due to beaver activity or a blockage of an upstream culvert. With the wide valley across much of the main channel upstream of the flow gauge, it could contain significant storage if a blockage occurred and this could theoretically create a breach similar to an overtopping of a reservoir and result in the sharp-peak. We reiterate that this sharp peak is not observable in the other hydrographs.

In a formal Shelter Valley Creek study, we would obtain the remaining flow gauge data from ECCC at 15-minute intervals (2011 to present) along with best available precipitation records from ECCC and/or LTC. We would then test several events for calibration and validation purposes for *both* the snowmelt plus rain and rainfall only scenarios given their different characteristics. This would be a robust and detailed investigation that we would also pair with a watershed-wide hydraulic model since *hydrologic* model channel routing options may not adequately reflect the channel and valley routing impacts on the local hydrograph readings.

For this project, at the site level, the above detail and effort is outside of a reasonable scope for the proponent. However, the long record of data and relationship between rainfall and flow datasets provides confidence in the peak flows applied to the hydraulic model described in **Section 3**.

The Timmins rainfall has a lesser peak flow than the 100-yr statistical event. This is because all past rainfall only events (1969 – present), including the Frances storm, have been unable to generate a peak flow greater than the statistical 5-yr return period from **Table 2-1** for the full dataset. Evidently, the flow gauge is more prone to high flows in the snowmelt season, and the 100-yr peak flow from the flow gauge (when including 1980) is expected to produce a higher peak flow than the Timmins storm.

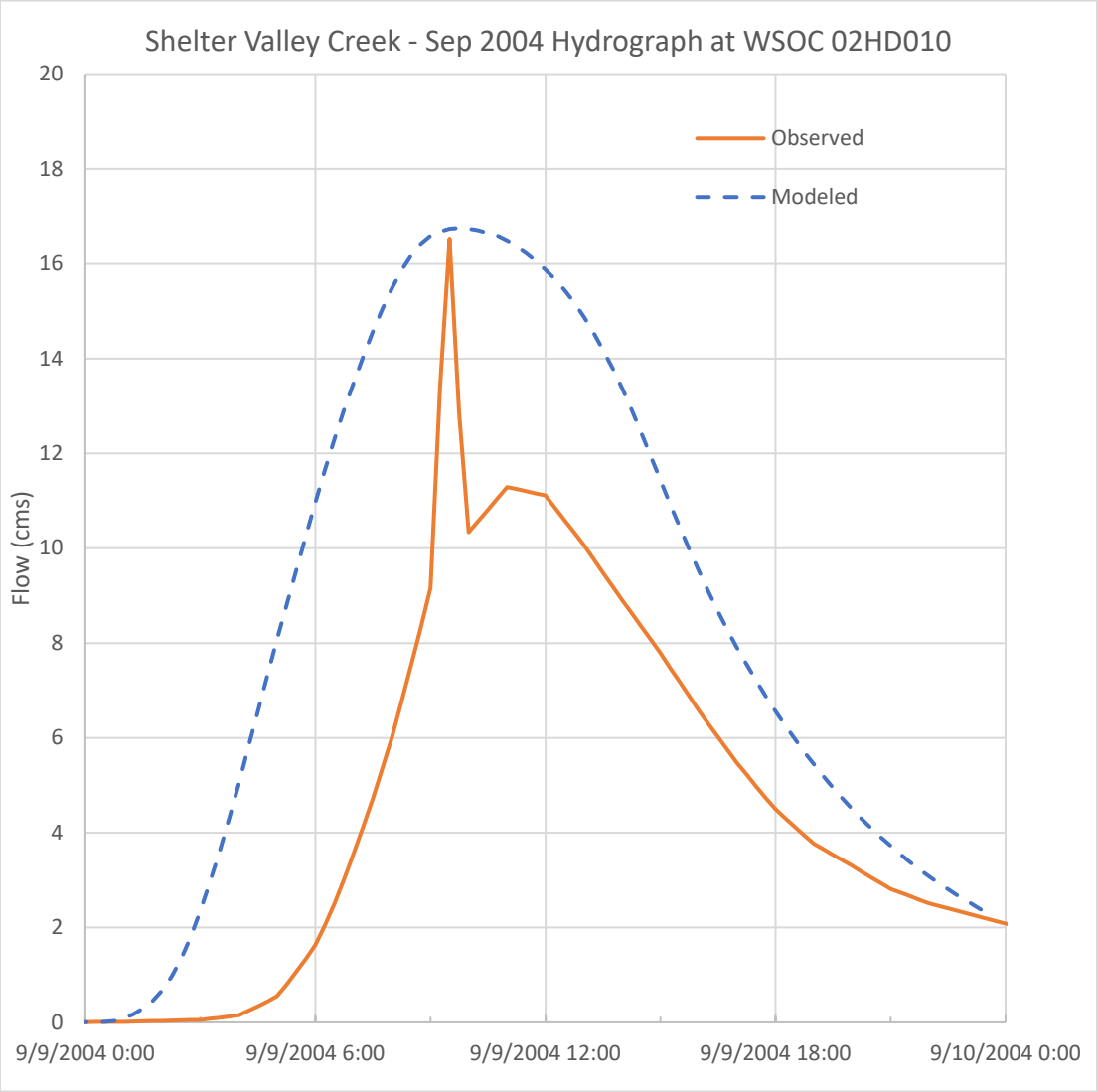


Figure 2-6: Observed Hydrograph (Orange) in 2004 Frances Event

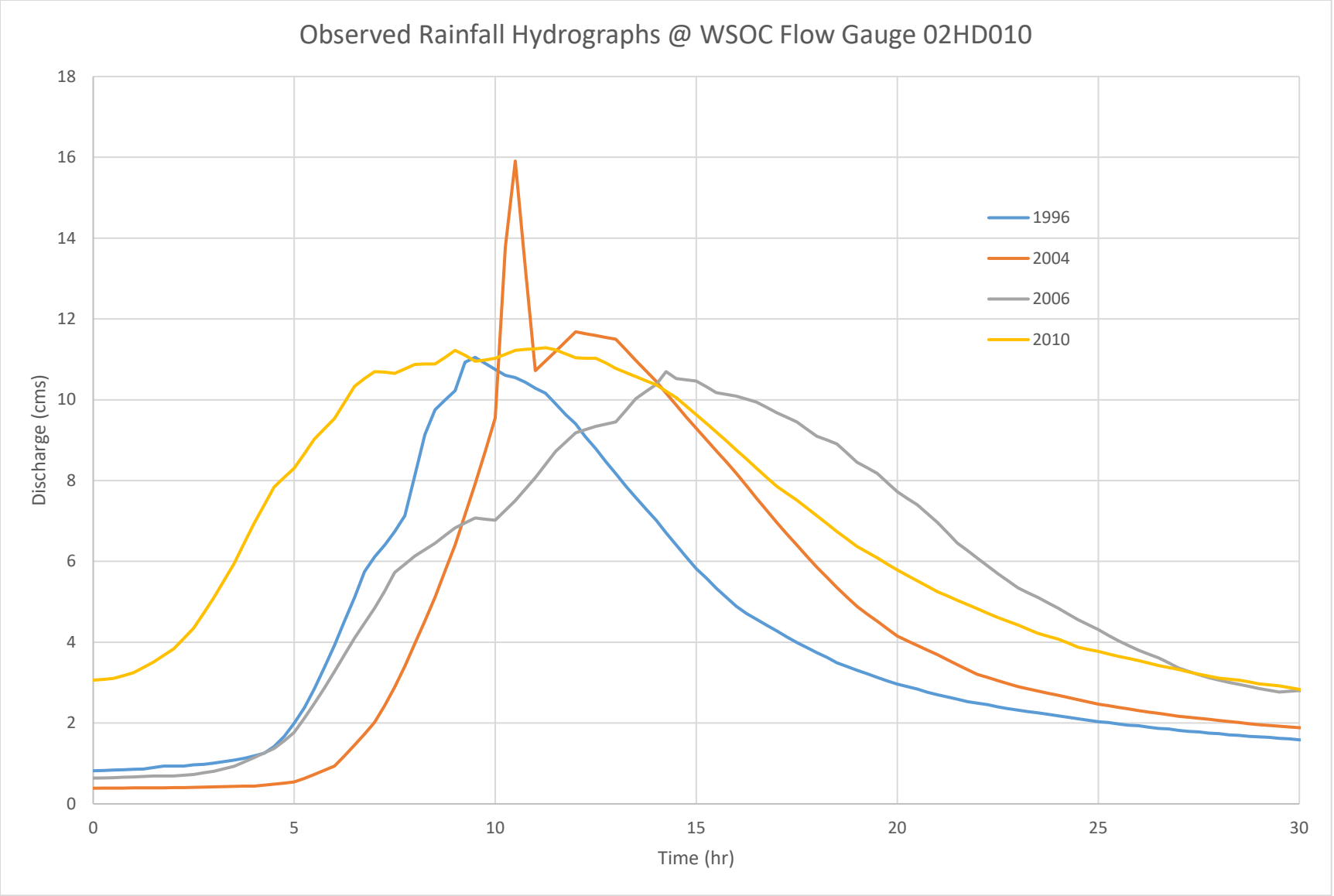


Figure 2-7: Comparison of 2004 Hydrograph Shape to Hydrographs of Other Significant Rainfall Events

2.6 Climate Change

Climate change impacts can be accommodated by applying peak flows in the floodplain model that are higher than current IDF data. In recent federally funded floodplain mapping updates, ECCC directives indicate the preferred method to accommodate climate change impacts was to use projected increases in temperature to forecast subsequent increases in rainfall intensities. Jewell selected this approach as part of this analysis.

The Federal Climate Data Portal was used to obtain the mean annual temperate change. The value for the 50th percentile of the mean annual temperature change based on the *CMIP5, RCP 4.5* scenario was followed.

The year 2071 was selected since this is the furthest projected date in the Excel download from the federal climate data portal. The mean annual temperature change for the year 2071 is an increase of 3.3 degrees Celsius. The equation below was received from past correspondence with ECCC representatives, and was applied to the Timmins rainfall depth for use in the Timmins plus climate change flow estimate. The table below shows that the impacts with this methodology are significant; the total rainfall increases by 25%.

Estimation of Future Rainfall Intensity (Environment and Climate Change Canada):

$$R_P = R_C \times 1.07^{\Delta T}$$

Where:

R_P = Future estimated rainfall intensity (mm/h)
R_C = Historic estimated rainfall intensity (mm/h)
T = Temperature (°C)

Table 2-2: Rainfall Intensities for Timmins Event in Historic & Climate Change Adjusted Scenarios

Time	Timmins Historic Intensity	Timmins 0.94 Reduction	Percent of 12 hour	Future Estimated Intensity (R_p)	Increase in Intensity
Hour	mm/hr		%	mm/hr	%
1	15	14.1	8	17.6	25%
2	20	18.8	10	23.5	25%
3	10	9.4	6	11.8	25%
4	3	2.82	1	3.5	25%
5	5	4.7	3	5.9	25%
6	20	18.8	10	23.5	25%
7	43	40.42	23	50.5	25%
8	20	18.8	10	23.5	25%
9	23	21.62	12	27.0	25%
10	13	12.22	6	15.3	25%
11	13	12.22	7	15.3	25%
12	8	7.52	4	9.4	25%
Total	**193**	**181**	**100**	**227**	**25%**

The above rainfall increase was applied to the extrapolation chart from Figure 2-5. It is expected that the climate change peak flow for the Timmins (i.e. rainfall only) event would be 73 m^3/s.

For the snowmelt period that governs the return period peak flows at the flow gauge, the 200-yr peak flow from the GFA analysis is applied to account for potential impacts due to climate change. The 200-yr peak flow from the GFA is 76.6 m^3/s. This peak flow was therefore applied as the 'All Data' climate change peak flow presented in the following subsection.

In a hydraulic model run with the 76.6 m^3/s for climate change the water level increases 4cm. Rounded up to the nearest 0.1m, the regulatory flood elevation that will be stated in **Section 4** is the same as the climate change elevation at the location of the clubhouse building. Therefore, a 0.3m (30cm) vertical distance of the first floor elevation above the flood hazard limit is sufficient to accommodate potential impacts due to climate change.

2.7 Peak Flow Summary

Peak flows for the 100-yr and Timmins storms are summarized in **Table 2-3**. This table shows that the 100-yr peak flow is greater than the Timmins storm. Therefore, the 100-yr event was selected as the regulatory storm event.

The peak flows selected for the hydraulic analysis were obtained from the statistical analysis described in **Section 2.4**.

Table 2-3 provides a comparison of the three datasets including the extrapolation applied for the Timmins event. The 100-yr peak flow of 64.6 m^3/s is the regulatory event since it is greater than the peak flow expected in the Timmins storm.

Table 2-3: Peak Flow Summary

Dataset		Peak Flow (m^3/s)		
		100	Timmins	Climate Change
1:	All Data	64.6	N_A	76.6
2:	All Data Except 1980	42.9	N_A	49.4
3:	Rainfall Only	21.7	55	73

**Yellow shade indicates peak flow applied in hydraulic model.*

2.8 Representative Hydrographs

Since the peak flows are derived from the flow gauge results, there is no hydrologic model supplying the hydrographs to the hydraulic model. Rather, representative hydrographs based on the flow gauge recordings were selected for both the 100-yr and Timmins event.

The 100-yr storm is likely to occur within the snowmelt period. A review of several large spring runoff events suggests that the 1975 snowmelt event is a representative distribution. This hydrograph is shown

below in **Figure 2-8**. The hydrograph was increased by the appropriate factor to bring the peak up to the 100-yr return period flow of 64.6 m^3/s.

Similarly, for the Timmins event, the 1996 rainfall event was selected as a representative hydrograph for the Timmins hydrograph shape (see blue line in **Figure 2-7**). The hydrograph was increased by the appropriate factor to bring the peak up to the Timmins peak flow of 55 m^3/s.

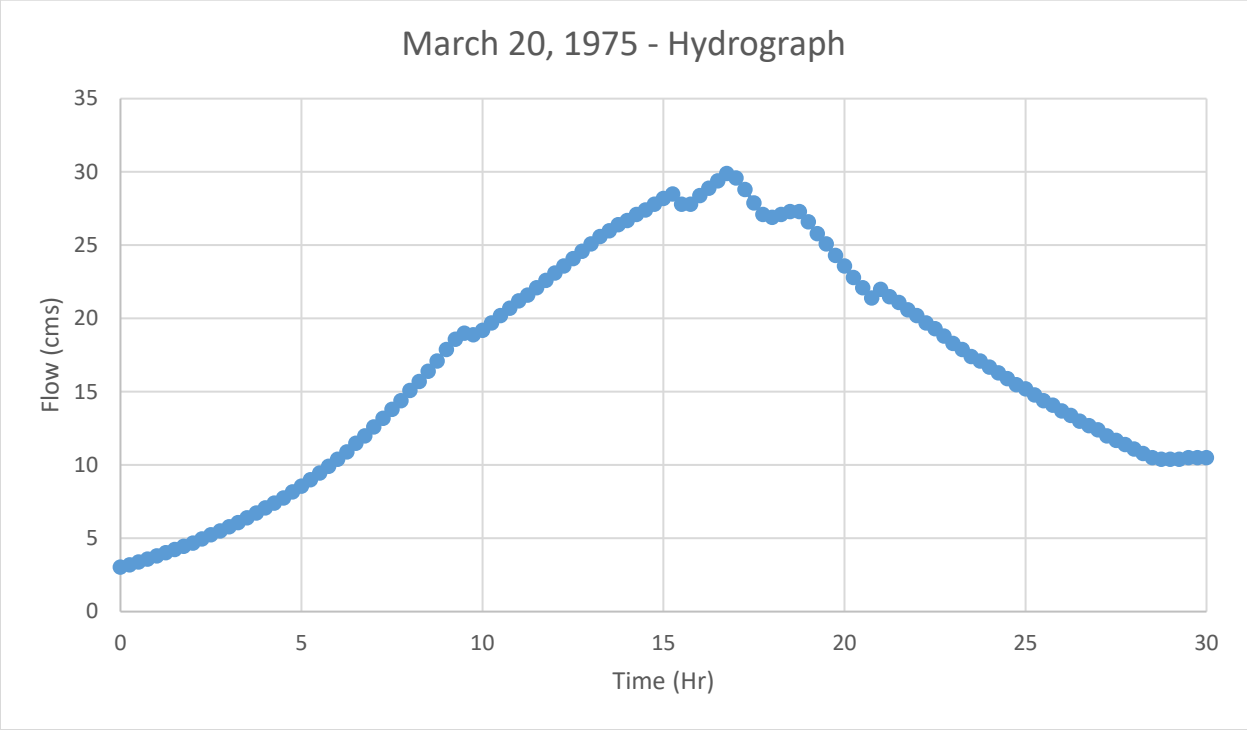


Figure 2-8: Representative Snowmelt Plus Rain Hydrograph Shape Based on 1975 Flood Event

3 Hydraulics

The hydraulic analysis was prepared using **HEC-RAS version 6.6**. The peak flows from the hydrology analysis were applied in the RAS model to delineate the flood hazard limits.

The hydraulic model extends 1.6km upstream (northeast) of the clubhouse building to 200m downstream of County Road 2. The extents were selected to allow sufficient space for the model to establish representative flow patterns upstream and downstream of the site location.

The flood hazard delineation for the 100-yr and Timmins events is discussed in **Section 4**. The 100-yr flood limit represents the regulatory flood limit for the subject site.

The hydraulic model is saved in a "TO SEND" folder and available upon request.

3.1 Topography & Land Cover

Survey data was obtained by Jewell survey crew using GPS and a total station for the representative cross sections of the creek, the grades immediately surrounding the existing clubhouse, and the existing bridge structure at County Road 2. The Jewell survey was supplemented by LiDAR data obtained from *Land Information Ontario*. The LiDAR data has a detailed 1.0m resolution and compared well with the Jewell survey at several spot elevation locations.

The hydraulic model requires inputs for Manning's n values. The *HEC-RAS User's Manual* and *MTO Drainage Manual* provide ranges of roughness coefficient values for varying surface cover such as crop overbank areas, treed areas, and channel bottoms. A Manning's roughness value of 0.06 was conservatively applied throughout the surface contact area of the model due to uncertainties in the amount of summer brush and the varying vegetative surfaces of the golf course in the overbank area.

The detailed LiDAR applied in the hydraulic model was imported from the Government of Canada preferred datum of CGVD 2013. Therefore, the hydraulic model outputs are also in datum CGVD 2013. Section 4 will provide a conversion to the local datum and identify the regulatory water level corresponding to the local datum of CGVD 28.

3.2 Model Selection

Given the relatively straight flow path of the channel across the site, a one-dimensional model would typically be appropriate. However, after the initial run of the 1D model and a review of the upstream terrain data, we had suspicions that the 1D model was inadequate since it does not account for potential spills outside of the main channel. The 1D model only sees the peak flow at individual cross sections, meaning it does not account for the potential uneven distribution of flow that may occur from flow that was previously diverted to the overbank area.

In this particular instance, the 100-yr floodplain widens approximately 750m upstream of the clubhouse and a portion of that floodplain reaches the east side of Shelter Valley Road. Due to the natural topography, the water in this right overbank area (looking downstream) does not have opportunity to spill back into the main channel until downstream of the clubhouse location.

To account for flow patterns in a major flood event, a 2D model was selected. Of note, the 2D and 1D models produced the same flood level (rounded to 0.1m) in the Shelter Valley Creek main channel adjacent to the clubhouse, however the 2D model shows floodplain in the right overbank by accounting for the upstream flow pattern whereas the 1D model shows no floodplain at the location of the clubhouse.

The 2D model is the more realistic and safer representation of the flood hazard for the purposes of this Floodplain Assessment. It was therefore selected for the flood hazard limits discussed in **Section 4.**

3.3 Internal and External Boundary Conditions

There are two (2) boundary conditions (BCs). One BC represents the inflow (**Inflow BC #1**) and the other represents the outflow (**Outflow BC #1**).

The BC locations are shown in **Figure 3-1**.

The 2D unsteady flow model received its flow data from an inflow hydrograph where the incoming flows change with time. The inflow hydrograph was obtained by the representative 100-yr and Timmins hydrograph shapes presented in **Section 2.8**.

The outflow BC is established by a normal depth setting. There is another crossing downstream, although a review of the terrain data indicates the crossing would be too low to impact the flood levels at the clubhouse location.

3.4 County Road 2 Crossing

There is a 15.5m span bridge that crosses County Road 2 approximately 290m downstream of the clubhouse. Due to the size of the opening and the depth between the creek invert and centerline of road, there is no overtopping of County Road 2 anticipated in either the 100-yr or Timmins events.

A bridge data sheet is shown in **Appendix C**.

The County Road 2 crossing was surveyed and included in the hydraulic model to assess its potential impact to the flood hazard limits on the subject property. As expected, there is some backwater impact that inundates a large portion of the golf course, however the clubhouse location is far enough upstream that its flood elevation is higher than the immediate upstream water level at the crossing.

3.5 Impacts to Control of Flooding

The proposed building will replace an existing structure. Although the new structure is larger, it is insignificant with respect to the cross-sectional area of the floodplain. The new structure would have no appreciable impact on the ability of the Shelter Valley Creek floodplain to convey runoff and there would subsequently be no appreciable impact on water levels. We conclude no negative impacts to upstream or downstream properties.

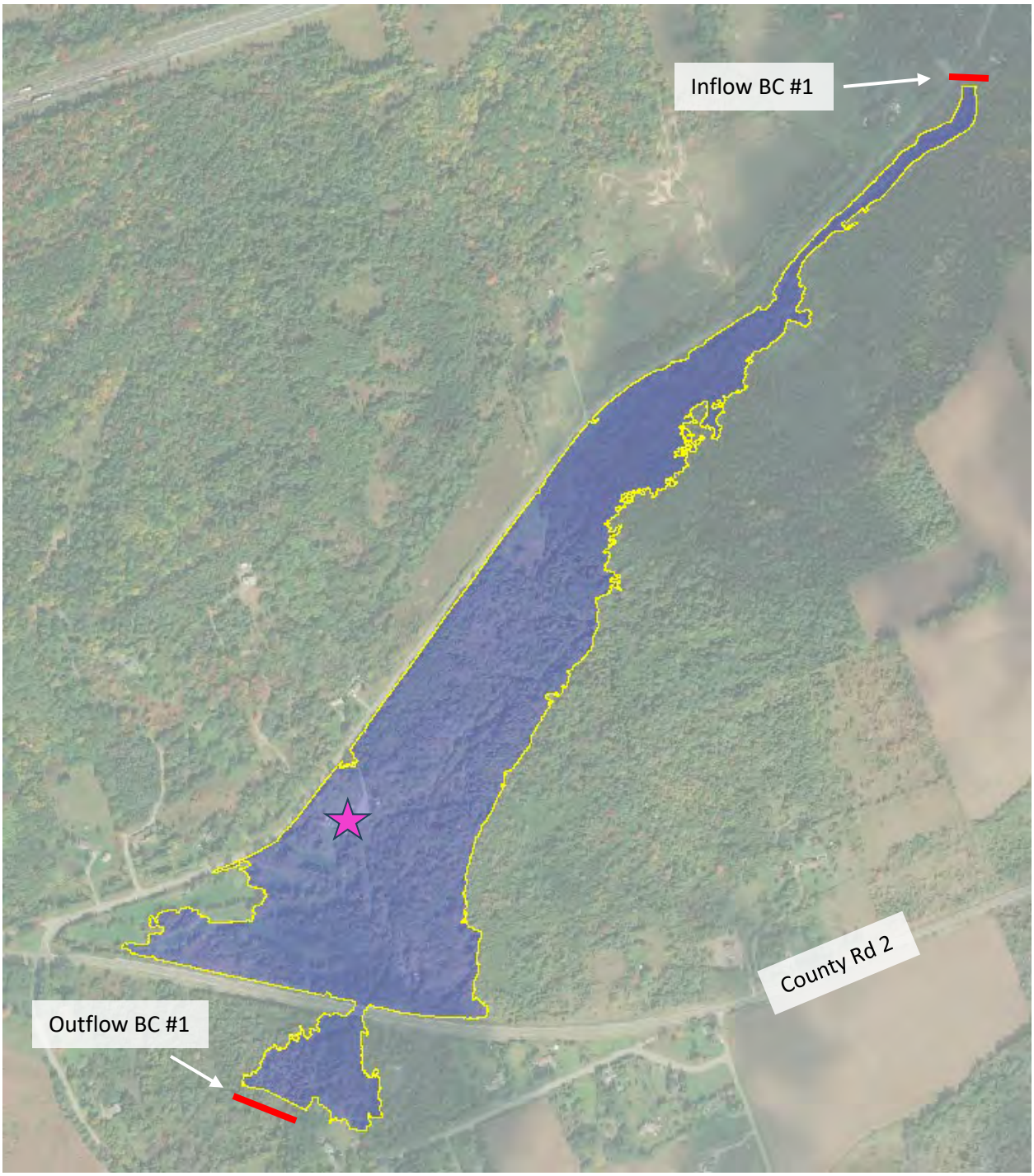


Figure 3-1: Inflow and Outflow Boundary Condition Locations to Establish Model Extents

4 Flood Hazard Limit Delineation

The flood hazard limit delineation for both the 100-yr and Timmins events is presented in **Appendix D**.

The water levels are higher in the 100-yr event due to the larger peak flow. Representative cross sections are included on the maps with corresponding water levels.

The 2D model does not utilize the cross sections, they are simply shown to provide the reviewer with a simplified and more traditional view of the floodplain results.

It is important to note the red dividing line between the main channel and the right overbank. The large flow creates a divide in flow path, resulting in a higher local water level in the right overbank due to the flow pattern of the floodplain upstream of the clubhouse location. Therefore, two values are shown for each cross section location in Appendix D: one for the main channel, and one for the right overbank.

The clubhouse is located on the west side of the dividing line, meaning it is within the right overbank. Therefore, the higher water level applies at Cross Section 586. Cross Section 586 was intentionally cut at the location of the clubhouse building to obtain the water level at the building location.

Recall the hydraulic model was prepared in datum CGVD 2013. In this datum, the regulatory water level at the building is 102.1m.

Note:

A conversion of 0.39m is applied to adjust from CGVD 2013 to local datum CGVD 28 based on the *Natural Resources Canada* website for vertical datum transformations.

For the local datum, the regulatory water level at the clubhouse building is **102.5m** (102.1 + 0.39).

Floodproofing measures are not included within the scope of this assessment. However, we note that under the *LTC Regulations Policy Document*, specifically *Appendix E – Floodproofing Standards*, there is guidance related to floodproofing. It is recommended that the building first floor elevation be raised a minimum of 0.3m above the regulatory water level for consistency with standard practices and the LTC Policy Document. Therefore, the minimum recommended first floor elevation is **102.8m** in local datum CGVD 28. It is assumed that the improved clubhouse structure will not include a basement.

The regulatory depth surrounding the building is a maximum of 20cm.

The peak velocity at the original ground surrounding the building in the regulatory event is 0.5 m/s.

The maximum depth*velocity product surrounding the original ground building in the regulatory event is 0.1 m^2/s.

5 Conclusions

Jewell has prepared this *Floodplain Assessment* to meet the objectives established in **Section 1**. These objectives are re-iterated below, along with a respective concluding statement.

1. Identify the flood hazard limits in the vicinity of the clubhouse.

   Appendix D summarizes the flood hazard limits delineated for the 100-yr and Timmins events. The flood hazard limits are greater in the 100-yr event, which is considered the regulatory event for this location.

2. Review and analyze the flow gauge record to establish reasonable 100-yr and Timmins peak flows.

   Section 2 provides an in-depth analysis of the flow gauge record to identify the peak flows summarized in **Table 2-2**. The regulatory (100-yr) peak flow is 64.6 m^3/s.

3. Recommend a final floor elevation for the building. The building must have final floor elevation ≥ 0.3m above the peak water level in the regulatory storm event.

   After a conversion to local datum CGVD 28, the minimum recommended first floor elevation for the clubhouse building is 102.8m; this corresponds to a minimum vertical distance of 0.3m above the regulatory water level of 102.5m.

Prepared by:

Elliott Fledderus, P.Eng.

Jewell Engineering Inc.

6 References

(Ministry of Natural Resources). *Floodplain Management in Ontario Technical Guidelines.*

Ministry of Natural Resources and Forestry. (2020). *User Guide for Ontario Flow Assessment Tool (OFAT).*

Ministry of Transportation Ontario. (1997). *Drainage Management Manual.*

Appendix A:
Environment Canda 'Trenton A' IDF Data

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Short Duration Rainfall Intensity-Duration-Frequency Data
Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

Gumbel - Method of moments/Méthode des moments

2022/10/31

TRENTON A ON 6158875

Latitude: 44 7'N Longitude: 77 32'W Elevation/Altitude: 86 m

Years/Années : 1965 - 2017 # Years/Années : 46

Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

Year / Année	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1965	7.4	10.9	14.7	17.3	18.3	19.0	26.9	29.5	43.9
1966	8.1	10.9	11.7	16.5	20.1	22.4	35.8	44.7	45.7
1967	9.1	10.9	11.7	14.2	15.5	16.3	29.7	47.2	69.6
1968	4.1	6.1	7.4	9.7	13.5	16.5	33.0	40.1	40.9
1969	5.8	9.7	13.5	18.8	21.6	24.6	34.0	39.1	54.9
1970	6.1	7.9	10.2	13.7	15.0	20.6	28.2	40.4	48.0
1971	7.1	10.9	11.2	12.2	12.7	17.5	22.1	29.0	35.1
1972	11.2	13.2	13.7	15.5	16.0	20.8	27.7	31.5	47.2
1973	6.6	10.4	10.4	15.0	15.5	22.4	43.2	52.1	53.6
1975	6.9	7.6	10.7	13.7	15.5	25.4	32.3	33.5	34.3
1976	6.9	11.2	11.7	12.7	14.0	14.5	27.9	29.2	30.2
1977	6.9	11.2	11.7	21.8	37.1	45.5	67.3	72.1	72.1
1978	7.1	9.9	11.2	15.0	15.9	19.9	31.7	34.1	36.6
1979	6.5	9.3	11.5	11.5	11.5	17.0	37.7	54.8	55.8
1980	9.3	14.0	16.3	22.9	31.1	37.6	46.6	46.6	60.0
1981	11.4	20.2	25.0	25.0	25.0	25.0	32.9	46.8	48.2
1982	14.2	18.4	22.2	22.4	23.2	30.7	39.0	39.0	39.0
1983	5.9	10.3	14.0	15.0	21.8	34.0	36.4	42.0	63.3
1984	4.4	7.2	7.8	10.1	11.8	13.0	27.7	41.7	42.2
1985	12.2	15.2	18.3	24.3	24.4	37.1	37.1	39.3	39.7
1986	24.3	24.8	26.0	27.1	27.1	32.8	63.2	65.0	65.6
1987	12.2	13.6	14.7	17.3	18.3	20.3	30.4	39.1	42.4
1988	4.7	8.1	8.8	9.9	15.1	15.2	20.2	28.0	28.0
1989	7.3	10.5	10.5	16.8	25.3	25.3	29.8	29.8	34.7
1990	6.6	7.5	9.0	11.0	12.7	16.7	32.9	46.1	50.0
1991	10.6	11.6	12.6	12.8	14.0	15.8	25.7	26.2	32.8

1992	4.7	8.1	9.6	12.1	14.9	20.2	30.1	38.0	42.8
1993	4.2	6.8	9.3	11.7	21.1	23.6	25.5	41.7	56.0
1994	5.6	8.8	10.5	14.6	17.8	19.6	31.3	32.5	34.8
1995	10.6	14.6	18.0	22.2	28.3	41.4	50.4	56.8	64.9
1996	3.4	6.2	7.3	9.5	14.2	19.8	30.0	33.8	42.8
1997	5.0	9.1	11.7	19.8	34.8	43.1	48.7	48.7	53.9
2000	11.4	17.6	22.3	33.5	59.6	68.2	69.8	69.8	71.6
2001	4.7	5.2	7.0	9.2	17.4	19.5	22.3	32.9	40.4
2002	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	78.8	78.8
2003	6.1	11.8	14.0	21.3	26.8	34.0	42.1	45.1	50.2
2004	7.1	10.0	14.9	18.9	31.7	48.9	88.9	109.6	123.7
2005	5.0	7.0	7.2	7.9	13.6	19.1	40.8	50.3	54.1
2006	5.0	8.1	9.6	15.6	20.4	25.0	42.9	55.1	69.9
2007	10.3	11.4	14.2	21.2	26.3	30.5	44.3	60.9	62.1
2008	6.1	12.1	14.0	21.2	23.1	32.5	32.7	40.4	47.6
2009	4.6	8.6	9.0	11.8	12.6	18.7	-99.9	58.0	75.8
2010	5.0	5.3	6.9	8.4	9.6	11.8	24.7	48.3	59.1
2012	5.5	8.0	10.5	21.1	35.7	44.5	60.5	79.9	80.6
2013	5.4	9.5	13.8	20.5	20.8	25.0	30.7	33.5	42.8
2014	7.8	10.7	11.3	13.7	23.9	33.6	43.3	47.1	79.4
2016	7.1	10.9	16.1	23.7	24.8	27.2	34.9	46.2	46.2
2017	5.5	10.3	12.6	13.8	20.3	27.8	33.8	52.0	66.3
# Yrs. Années	47	47	47	47	47	47	46	48	48
Mean Moyenne	7.5	10.7	12.7	16.5	21.1	26.4	37.5	46.4	53.3
Std. Dev. Écart-type	3.6	3.8	4.5	5.6	8.9	11.2	13.8	16.0	17.5
Skew. Dissymétrie	2.55	1.57	1.32	0.70	1.99	1.50	1.80	1.71	1.49
Kurtosis	12.61	6.57	4.92	3.48	9.40	6.09	6.82	7.30	7.19

*-99.9 Indicates Missing Data/Données manquantes

Warning: annual maximum amount greater than 100-yr return period amount
Avertissement : la quantité maximale annuelle excède la quantité pour une période de retour de 100 ans

Year/Année	Duration/Durée	Data/Données	100-yr/ans
1986	5 min	24.3	18.7
1986	10 min	24.8	22.7
2000	1 h	59.6	49.0
2000	2 h	68.2	61.4
2004	6 h	88.9	80.8
2004	12 h	109.6	96.5
2004	24 h	123.7	108.1

****

Table 2a : Return Period Rainfall Amounts (mm)
Quantité de pluie (mm) par période de retour

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	6.9	10.1	12.2	14.8	16.8	18.7	47
10 min	10.0	13.4	15.7	18.5	20.6	22.7	47
15 min	12.0	15.9	18.5	21.8	24.2	26.7	47
30 min	15.5	20.5	23.8	27.9	31.0	34.0	47
1 h	19.6	27.5	32.7	39.3	44.2	49.0	47
2 h	24.5	34.4	41.0	49.2	55.4	61.4	47
6 h	35.3	47.5	55.5	65.7	73.3	80.8	46
12 h	43.8	57.9	67.2	79.1	87.8	96.5	48
24 h	50.4	65.9	76.1	89.0	98.6	108.1	48

****

Table 2b :

Return Period Rainfall Rates (mm/h) - 95% Confidence limits
Intensité de la pluie (mm/h) par période de retour - Limites de confiance de 95%

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	83.1	120.9	146.0	177.7	201.2	224.5	47
	+/- 11.2	+/- 18.9	+/- 25.6	+/- 34.5	+/- 41.3	+/- 48.1	47
10 min	60.3	80.6	94.0	111.0	123.7	136.2	47
	+/- 6.0	+/- 10.2	+/- 13.7	+/- 18.5	+/- 22.1	+/- 25.8	47
15 min	47.8	63.6	74.0	87.1	96.9	106.6	47
	+/- 4.7	+/- 7.9	+/- 10.6	+/- 14.3	+/- 17.1	+/- 20.0	47
30 min	31.1	41.0	47.5	55.8	61.9	68.0	47
	+/- 2.9	+/- 4.9	+/- 6.7	+/- 9.0	+/- 10.8	+/- 12.5	47
1 h	19.6	27.5	32.7	39.3	44.2	49.0	47
	+/- 2.3	+/- 3.9	+/- 5.3	+/- 7.2	+/- 8.6	+/- 10.0	47
2 h	12.3	17.2	20.5	24.6	27.7	30.7	47
	+/- 1.5	+/- 2.5	+/- 3.3	+/- 4.5	+/- 5.4	+/- 6.3	47
6 h	5.9	7.9	9.3	11.0	12.2	13.5	46
	+/- 0.6	+/- 1.0	+/- 1.4	+/- 1.9	+/- 2.2	+/- 2.6	46
12 h	3.6	4.8	5.6	6.6	7.3	8.0	48
	+/- 0.3	+/- 0.6	+/- 0.8	+/- 1.1	+/- 1.3	+/- 1.5	48
24 h	2.1	2.7	3.2	3.7	4.1	4.5	48
	+/- 0.2	+/- 0.3	+/- 0.4	+/- 0.6	+/- 0.7	+/- 0.8	48

****

Table 3 : Interpolation Equation / Équation d'interpolation: R = A*T^B

R = Interpolated Rainfall rate (mm/h)/Intensité interpolée de la pluie (mm/h)
RR = Rainfall rate (mm/h) / Intensité de la pluie (mm/h)
T = Rainfall duration (h) / Durée de la pluie (h)

****

Statistics/Statistiques	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans
Mean of RR/Moyenne de RR	29.5	40.7	48.1	57.4	64.4	71.2
Std. Dev. /Écart-type (RR)	28.6	40.4	48.3	58.4	65.8	73.2
Std. Error/Erreur-type	4.5	4.2	4.2	4.5	4.9	5.3
Coefficient (A)	18.6	25.2	29.6	35.2	39.3	43.4
Exponent/Exposant (B)	-0.656	-0.664	-0.668	-0.671	-0.673	-0.674
Mean % Error/% erreur moyenne	5.1	5.0	5.2	5.6	6.0	6.2

Appendix B:
Snowmelt vs. Rainfall Only Events

Date	Annual Inst. Q_{peak} (m^3/s)	Winter/Spring (Jan. 1 - May 14)	Rainfall Only (May 15 - Dec. 31)	Date	Annual Inst. Q_{peak} (m^3/s)	Winter/Spring (Jan. 1 - May 14)	Rainfall Only (May 15 - Dec. 31)
				Continued:			
April 3, 1967	11.6	✓		November 11, 1995	10.4		✓
February 2, 1968	15.5	✓		February 22, 1997	9.8	✓	
Marhch 24, 1969	16.1	✓		March 9, 1998	13.1	✓	
April 13, 1971	8.0	✓		November 2, 1999	7.2		✓
April 14, 1972	12.0	✓		April 8, 2001	7.8	✓	
March 20, 1973	17.1	✓		July 22, 2002	8.4		✓
March 20, 1975	30.0	✓		March 22, 2003	9.0	✓	
March 21, 1976	18.5	✓		September 9, 2004	16.9		✓
March 13, 1977	16.1	✓		October 17, 2006	10.7		✓
April 21, 1978	8.5	✓		December 23, 2007	6.0		✓
March 14, 1979	16.0	✓		April 12, 2008	6.2	✓	
March 21, 1980	74.9	✓		April 4, 2009	10.9	✓	
April 3, 1982	23.4	✓		February 1, 2012	5.2	✓	
February 3, 1983	29.7	✓		April 12, 2013	9.7	✓	
April 5, 1984	22.3	✓		April 8, 2014	14.1	✓	
March 12, 1985	15.4	✓		October 28, 2015	14.3		✓
March 19, 1986	22.2	✓		January 10, 2016	12.3	✓	
April 4, 1987	10.6	✓		June 23, 2017	13.7		✓
March 12, 1990	39.7	✓		January 11, 2020	14.1	✓	
March 7, 1991	22.1	✓		September 23, 2021	10.2		✓
March 10, 1992	23.6	✓		March 6, 2022	11.5	✓	
January 5, 1993	14.0	✓		June 12, 2023	9.6		✓
					Sum:	34	10
					Total # of Events:	44	
					Probability:	34/44	10/44
					Probability:	**77%**	**23%**

Appendix C:
County Road 2 Bridge Data Sheet

Existing:

Vertical Datum: CGVD 28

Note: *All distances and elevations shown in meters.*

Name of Crossing:	County Road 2
Name of Road:	County Road 2
Coordinates:	43.994815, -77.999231
Road width:	8
Span:	15.45
Rise (Sofft to CL Crk):	2.9

Parameter	Unit	Storm:	
		100-Yr	Timmins
Q_{peak}	m^3/s	63.6	37.0
Peak Water Level	m	101.07	100.46
Relief Flow Depth		0.00	0.00
D*V Product	m^2/s	0.00	0.00

Low Point of Road	101.65
CL Road @ Culvert	101.65
Upstream Soffit	100.41
Creek Invert (US Side)	97.51
Creek Invert (DS Side)	97.82

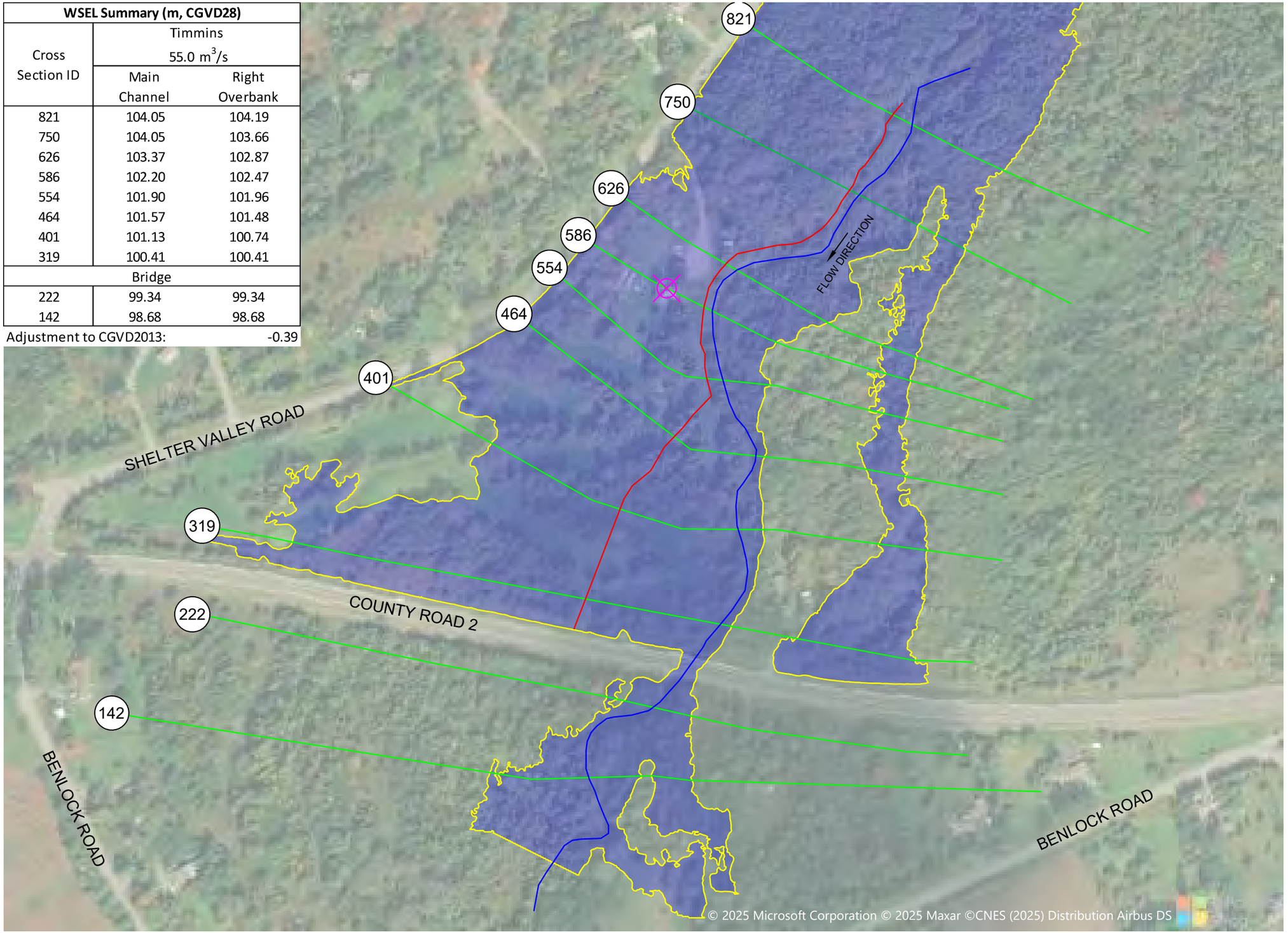
Site Photo(s):

Appendix D:
Flood Hazard Limit Delineations

03/03/2025

WSEL Summary (m, CGVD28)		
Cross Section ID	Timmins 55.0 m^3/s	
	Main Channel	Right Overbank
821	104.05	104.19
750	104.05	103.66
626	103.37	102.87
586	102.20	102.47
554	101.90	101.96
464	101.57	101.48
401	101.13	100.74
319	100.41	100.41
Bridge		
222	99.34	99.34
142	98.68	98.68

Adjustment to CGVD2013: -0.39



GENERAL NOTES:

- ALL INFORMATION TO BE VERIFIED ON SITE PRIOR TO COMMENCING ANY WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT IMMEDIATELY.
- ALL UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL CONFIRM THE LOCATION ON SITE AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES.
- EXCLUDING THE BENCHMARK AND DESCRIPTION PROVIDED FOR THIS PROJECT, NO OTHER ELEVATIONS ARE TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

METRIC NOTE:

- ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES, UNLESS OTHERWISE NOTED.

GEOMETRIC NOTE:

- ALL SURVEY DATA SHOWN ON THIS DRAWING WAS RECORDED USING REAL-TIME KINETIC (RTK) GPS OBSERVATIONS IN REFERENCE TO UTM 18 NORTH COORDINATE SYSTEM.
- ALL ELEVATIONS ARE IN REFERENCE TO LOCAL DATUM NAD83 - GEODETIC MODEL HT2_0, UNLESS DESCRIBED OTHERWISE.

** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS			
NO.	DATE	DESCRIPTION	BY

LEGEND

- TIMMINS FLOOD LIMITS
- CROSS-SECTIONS
- RIGHT OVERBANK DIVIDING LINE
- CLUBHOUSE LOCATION
- 192 CROSS-SECTION ID

N W E S

JEWELL ENGINEERING

GRAFTON CREEKSIDE GOLF

TOWNSHIP OF ALNWICK-HALDIMAND

TIMMINS FLOOD LIMITS

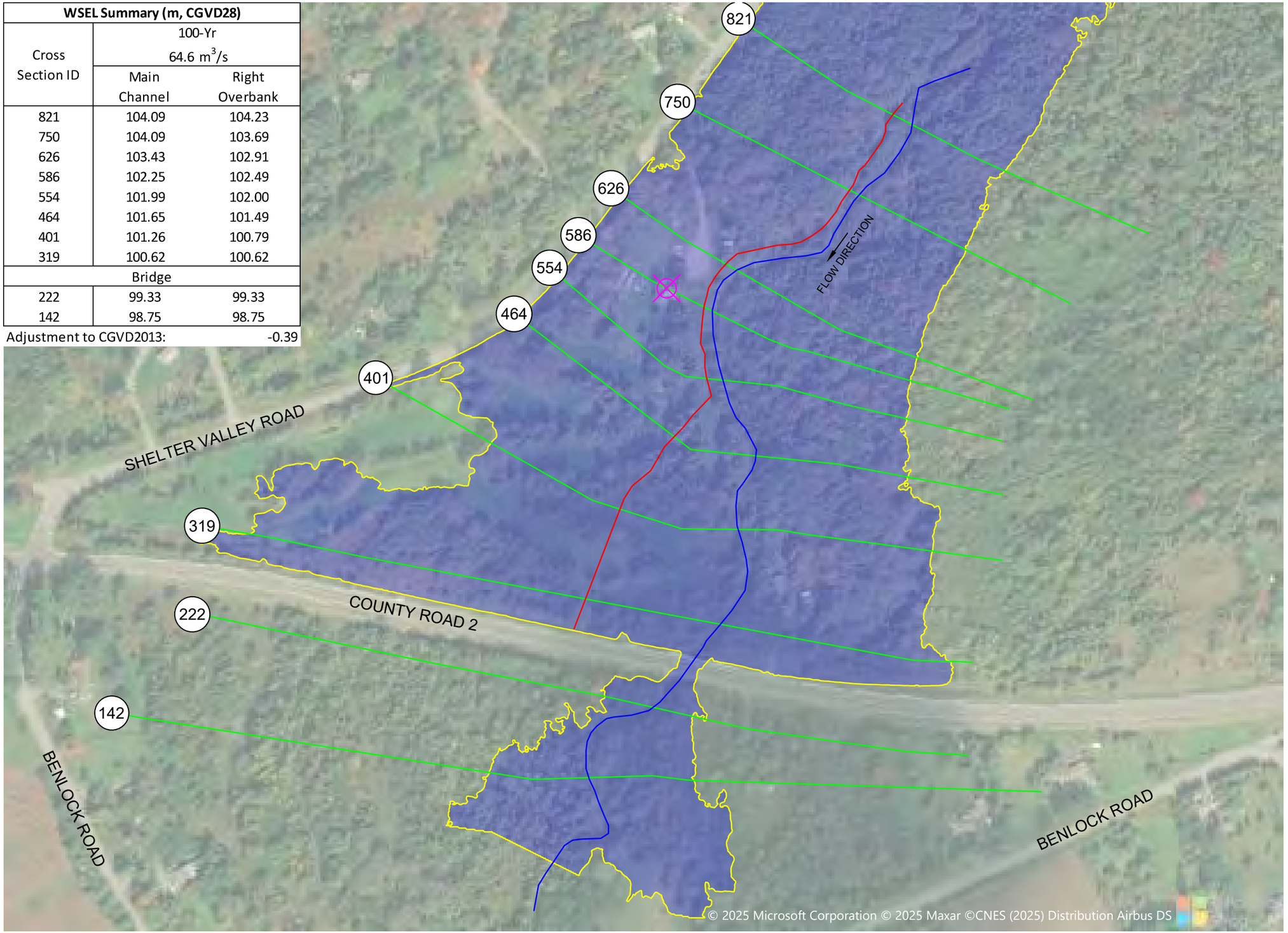
DRAWN BY: JH	PROJECT NO: 240-5639
DESIGNED BY:	DATE: Feb 2025
CHECKED BY: EF	SCALE: HORIZONTAL -1:3000 VERTICAL -N/A
APPROVED BY:	CONTRACT NO:
	DRAWING NO: 1

F:\FTP\PROJECT FILES\GRAFTON CREEKSIDE GOLF\CAD\3 SHEETS\GRAFTON CREEKSIDE GOLF - FLOOD LIMITS

03/03/2025

WSEL Summary (m, CGVD28)		
Cross Section ID	100-Yr 64.6 m^3/s	
	Main Channel	Right Overbank
821	104.09	104.23
750	104.09	103.69
626	103.43	102.91
586	102.25	102.49
554	101.99	102.00
464	101.65	101.49
401	101.26	100.79
319	100.62	100.62
Bridge		
222	99.33	99.33
142	98.75	98.75

Adjustment to CGVD2013: -0.39



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- ALL ELEVATIONS ARE IN REFERENCE TO LOCAL DATUM NAD83 - GEODETIC MODEL HT2_0, UNLESS DESCRIBED OTHERWISE.

** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS

NO.	DATE	DESCRIPTION	BY

LEGEND

- 100-YR FLOOD LIMITS
- CROSS-SECTIONS
- RIGHT OVERBANK DIVIDING LINE
- CLUBHOUSE LOCATION
- 192 CROSS-SECTION ID

N W E S

JEWELL ENGINEERING

GRAFTON CREEKSIDE GOLF

TOWNSHIP OF ALNWICK-HALDIMAND

100-YR FLOOD LIMITS

DRAWN BY: JH	PROJECT NO: 240-5639	
DESIGNED BY:	DATE: Feb 2025	
CHECKED BY: EF	SCALE: HORIZONTAL -1:3000 VERTICAL -N/A	
APPROVED BY:	CONTRACT NO:	DRAWING NO: 2

F:\FTP\PROJECT FILES\GRAFTON CREEKSIDE GOLF\CAD\3 SHEETS\GRAFTON CREEKSIDE GOLF - FLOOD LIMITS

METRIC NOTE:

ALL DIMENSIONS SHOWN ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE NOTED.

** DRAWINGS ARE NOT TO BE SCALED **

REVISIONS

No.	Date	Description	By

LEGEND

EXISTING		PROPOSED
	UTILITY POLE	
	HYDRANT ASSEMBLY	
	WATER VALVE	
	STORM SEWER	
	SANITARY SEWER	
	WATERMAIN	
	SANITARY MAINTENANCE HOLE	
	CATCH BASIN	
	DITCH INLET	
	CATCH BASIN MAINTENANCE HOLE	
	STORM MAINTENANCE HOLE	
	WATER SERVICE WITH SHUT OFF	
	SANITARY SERVICE WITH CLEANOUT	
	TREE	
	GARDEN	
	PROPERTY LINE	
	FENCE	
	BELL BOX	
	UNDERGROUND BELL LINE	
	UNDERGROUND POWER LINE	
	NATURAL GAS LINE	
	IRON BAR	
	UTILITY POLE WITH LIGHT FIXTURE	
	LIGHT POST	

JEWELL ENGINEERING

GRAFTON CREEKSIDE GOLF COURSE

GRAFTON, ON

CLUBHOUSE GRADING PLAN

Drawn by: J.E.	Project No: 2409901		
Designed by: M.G.	Date: 10/02/2025		
Checked by: M.G.	Scale – Hor: 1:100 Vert: N/A		
Approved by:	Contract No:	Drawing No: 1/1	

Environmental Impact Study – 1225 Shelter Valley Road, Township of Alnwick/Haldimand, Northumberland County, Ontario

February 14, 2025

Prepared for:
James Brouwer, Grafton Creekside Golf

Cambium Reference: 21143-001

CAMBIUM INC.

866.217.7900

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1.0 Introduction

Cambium Inc. (Cambium) was retained by James Brouwer, Grafton Creekside Golf (the Client) to conduct an Environmental Impact Study (EIS; the Study) at Grafton Creekside Golf – 1225 Shelter Valley Road, Township of Alnwick/Haldimand, Northumberland County, Ontario (Figure 1). The property is currently developed as a golf course with an existing clubhouse and accessory/storage structures. The proposed development includes re-construction of the existing clubhouse in the same area as the existing clubhouse but occupying a larger footprint. The development is subject to a Zoning By-law Amendment and Site Plan Application, and given the proximity to natural heritage features, must also be accompanied by an EIS.

Based on the proposed development, the area immediately surrounding the existing clubhouse will be considered the Site for this report.

The following Study serves to address potential impacts to natural heritage features as revealed through background review and field assessments, identify potential impacts and outline mitigation measures, as required by the Provincial Planning Statement (PPS) and the Township of Alnwick/Haldimand's Official Plan (2015). The Site contains or is adjacent to (within 120 m of) the following mapped natural heritage and hydrologic features: Shelter Valley Creek, an unnamed watercourse (tributary to Shelter Valley Creek), unevaluated wetlands, woodlands, and deer wintering (Stratum II) significant wildlife habitat (SWH). The Site is within Ecoregion 6E of Ontario (Crins, Gray, Uhlig, & Wester, 2009). The Site is located just outside of the Grafton settlement area boundaries.

1.1 Terms of Reference

The Terms of Reference (TOR) were circulated to Lower Trent Conservation (LTC) and the Township of Alnwick/Haldimand. A response was received from Kim Stevens at LTC, on September 5, 2024, indicating that the proposed EIS scope was sufficient. A response was received from the Township's Senior Planner, Tracey Webster, on September 13, 2024, requesting the EIS demonstrate development occurs outside of the wetlands and the Shelter Valley Creek floodplain. Further communication from LTC indicated the need for a Floodplain

Assessment to be completed by a qualified engineer. Relevant correspondence and documentation are included in Appendix A.

1.2 Summary of Proposed Development

The Site is actively used as a golf course. It includes a gravel laneway and parking areas accessed off Shelter Valley Road to the north. The existing clubhouse is located at the southwest end of the parking area. Several storage structures are located around the periphery of the parking and clubhouse areas. Two septic beds are currently present. An older, smaller septic bed that is no longer in use is located directly west of the existing clubhouse. A newer, larger septic bed located northwest of the existing clubhouse is currently in use and has been designed to accommodate the proposed clubhouse expansion; no further septic construction is currently proposed.

The existing clubhouse is approximately 7.92 m (26 feet) by 7.92 m and located approximately 32.55 m from the edge of Shelter Valley Creek to the east. The proposed new clubhouse is approximately 12.19 m (40 feet) by 12.19 m, with a wrap around deck that extends approximately 3.05 m (10 feet) out on all sides. The existing and proposed structures are located within the floodplain, as delineated by IBW Surveyors for the Client.

The Concept Plan showing the existing clubhouse, and the proposed clubhouse are provided in Appendix B. This Concept Plan is sufficient for the purpose of this EIS, understanding that a future, detailed Site Plan will incorporate the recommendations provided herein.

2.0 Natural Heritage Policy Context

The evaluation of the form and function of natural heritage features present on, and adjacent to, the Site was undertaken to meet the requirements of the following legislation, plans and policies:

- County of Northumberland Official Plan, 2016
- Township of Alnwick/Haldimand Official Plan, 2015
- Township of Alnwick/Haldimand Zoning By-law 19-2019
- Provincial Planning Statement (PPS), 2024
- *Endangered Species Act* (ESA), 2007
- *Fisheries Act,* 2019
- *Species at Risk Act* (SARA), 2002
- *Migratory Birds Convention Act* (MBCA), 1994

This Study includes an assessment of conformity of the proposed development with relevant natural heritage policies. A summary of policy conformity is included in Section 7.0.

2.1 Municipal Official Plans and Zoning By-Law

The land use designations and zoning of the Site are summarized in Table 1.

Table 1 Summary of Municipal Official Plan Designations and Zoning

Source	Designation / Zoning
Official Plan – County of Northumberland 2016	Rural Area
Official Plan – Township of Alnwick/Haldimand 2015	Environmental Protection Special Policy Areas
Zoning By-law – Township of Alnwick/Haldimand Zoning By-Law 2019	Environmental Protection (EP-2)

2.2 Provincial Planning Statement, 2024

The PPS provides direction on matters of provincial interest related to land use planning and development. Section 4.1 of the PPS (Ministry of Municipal Affairs and Housing, 2024) protects the form and function of eight types of significant natural heritage features, which include:

- significant wetlands in Ecoregions 5E, 6E, and 7E
- significant coastal wetlands
- significant woodlands in Ecoregions 6E and 7E
- significant valleylands in Ecoregions 6E and 7E
- significant wildlife habitat (SWH)
- significant areas of natural and scientific interest (ANSI)
- fish habitat
- habitat of endangered and threatened species
- coastal wetlands in Ecoregions 5E, 6E, and 7E

Given their significance, development and site alteration are prohibited within provincially significant wetlands (PSW) in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development and site alteration in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development and site alteration within other natural heritage features and on lands adjacent to all natural heritage features may be permitted if it is demonstrated that there will be no negative impacts on the feature or its ecological function. The PPS defines "development" as the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act. "Site alteration" means activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site.

Section 4.2 of the PPS protects the quality and quantity of water, including the form and hydrologic function of sensitive surface water features and sensitive ground water features. Focus is given to maintaining hydrologic linkages and functions at the watershed scale to minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts of development. Mitigative measures and/or alternative development approaches should be considered for development near water features.

2.3 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list, and their habitats, are protected under the provincial *Endangered Species Act, 2007* (ESA) (Government of Ontario, 2007). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Habitat for special concern species is afforded protection as SWH in the PPS. Species at risk (SAR) are discussed throughout this report, as applicable.

2.4 Conservation Authorities Act

The purpose of the *Conservation Authorities Act* "is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario" (Government of Ontario, 2024). Part VI, Section 28(1) of the *Conservation Authorities Act* indicates that the local Conservation Authority in an area will regulate:

- activities to straighten, change, divert, or interfere in any way with the existing channel of a watercourse or interfere with a wetland
- development activities in hazardous lands, wetlands, valleys, and shorelines, etc.

LTC is the local conservation authority in and adjacent to the Site. LTC regulates the above-mentioned features under Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits under the Conservation Authorities Act.

2.5 Species at Risk Act

The federal *Species at Risk Act* (SARA) was adopted in 2002 to prevent endangered or threatened species from becoming extinct or extirpated, to help in the recovery of endangered, threatened, and extirpated species, and to manage species of special concern to help prevent them from becoming endangered or threatened. Habitat which is deemed necessary for the survival/recovery of a listed wildlife species, referred to as Critical Habitat, is protected under Section 56 of the SARA. The SARA applies to all federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

Known aquatic SAR populations and associated critical habitats are mapped by DFO. Critical habitat for aquatic SAR may include areas used for spawning, rearing young, feeding, overwintering, and migration.

2.6 Fisheries Act

Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act* which defines fish habitat as "*spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes*" (Subsection 2(1)). Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. The Fisheries Act prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Subsection 35(1)), which is defined as "*any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes*". Furthermore, any work, undertaking, or activity other than fishing that results in the death of fish is considered an offence.

As a result of amendments to the *Fisheries Act* in 2019, projects near water that could potentially impact fish or fish habitat may require DFO review. The primary purpose of the review is to determine whether the death of fish and/or HADD of fish habitat, as defined by the Act, can be avoided. The DFO Fisheries Protection Program provides a Decision Framework

and guidance material applicable to these reviews (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html).

2.7 Migratory Birds Convention Act, 1994

The federal *Migratory Birds Convention Act, 1994* (MBCA) prohibits killing, capturing, injuring, taking or disturbing of the listed migratory birds. Including damaging, destroying, removing, or disturbing of nests of all migratory bird species that contain a live birds or viable eggs. In 2022, new Migratory Birds Regulations (MBR) were adopted that afford year-round protection to the nests of 18 migratory species, until the nest is deemed to be abandoned. Nest abandonment must be reported through the Abandoned Nest Registry, administered by Environment and Climate Change Canada (ECCC), if there is a need to damage, disturb, destroy, or remove a nest of a species listed in Schedule 1 of the MBR. The time period to confirm nest abandonment varies by species, and ranges from 12 to 36 months.

3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Supporting background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. Data was obtained from provincial, municipal, and other online resources to provide context to the development proposal, and to guide development of the site-specific work program. Field studies were subsequently conducted to verify and/or add detail to the high-level contextual information derived from these publicly available resources.

The comprehensive desktop review for this Site included the following resources:

- Land Information Ontario (LIO) database via the online Natural Heritage Areas: Make-a-Map tool (Ministry of Natural Resources, 2024)
- Natural Heritage Information Center (NHIC) database: species at risk (SAR) occurrence records
- Online Atlas Data:
  - Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018)
  - Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005)
- Aquatic Species at Risk distribution maps (Fisheries and Oceans Canada, 2024)
- Aquatic Resource Area Summary Data (Government of Ontario, 2024)
- Fish ON-Line (Ministry of Natural Resources and Forestry, 2024)

Mapped natural heritage features present in the general area of the Site are shown on Figure 1. A summary of background review results is provided in Table 2.

Table 2 Background Review Summary

Source	Location Reference	Relevant Records
LIO Geographic Database	Site and 120 m adjacent lands	Watercourses Unevaluated Wetlands Woodlands
NHIC Database	17QJ4075 18TP5975 17QJ4076 18TP5976	Eastern Meadowlark – THR Wood Thrush – SC Eastern Wood-pewee – SC Snapping Turtle – SC Bobolink – THR Least Bittern – THR American Eel - END
Ontario Breeding Bird Atlas (OBBA)	18TP57 17QJ47	Incorporated into list of species within Appendix C
Ontario Reptile and Amphibian Atlas (ORAA)	18TP57 17QJ47	Incorporated into list of species within Appendix C
Aquatic SAR distribution maps	Site and 120 m adjacent lands	None

Note: THR = Threatened species on SARO list ; END = Endangered species on SARO list; SC = Special concern species on SARO list. The Species of Conservation Concern Screening provided in Appendix C includes a list of all species within the overlapping OBBA and ORAA squares with potential policy implications.

3.2 Field Investigations

Information gathered through the background review was used to guide the development of the fieldwork program and was supplemented. Given the altered nature of the Site, with no natural area occurring within the anticipated development footprint, the field program was scoped to include a single field visit. Survey methodologies for each of the field investigations completed on the Site are described in the following sections.

All surveys were conducted by appropriately trained Cambium staff. Survey stations were GPS marked in the field. Data were documented manually, reviewed upon return to the office, and transposed to digital format for secure data management.

A summary of the field investigations completed is presented in Table 3. Representative Site photos are included within the Photo Log in Appendix D. Survey stations/areas are shown on Figure 2.

Table 3 Summary of Field Investigations

Date	Time On Site	Atmospheric Conditions	Observer	Activities
2024-08-14	1000-1500	Air Temp:24°C-27°C Wind:1 Noise:0 Sky:0	K. Domsic	Ecological Land Classification and Vegetation Inventory Wetland Boundary Delineation Aquatic Habitat Assessment Habitat-based Encounter Surveys

Notes: Wind = Beaufort Wind Scale value (0 = 0-2 kph, 1 = 3-5 kph, 2 = 6-11 kph, 3= 12-19 kph, 4 = 20-30 kph, 5 = 31-39 kph, 6 = 40-50 kph). Noise is reported based on background noise levels: Index 0 – no appreciable effect, 1 – slightly affecting sampling, 2 – moderately affecting sampling, 3 – seriously affecting sampling, 4 – profoundly affecting sampling.

3.2.1 Ecological Land Classification and Vegetation Surveys

The Ecological Land Classification (ELC) System for Southern Ontario (Lee H. , et al., 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee H. , et al., 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. A field investigation served to confirm the type and extent of ELC communities on the Site through a vegetation survey and soil assessment with a hand auger, where vegetation types could not be classified based on vegetation alone. Where vegetation communities extended off the Site, classification was completed through observation from property boundaries and publicly accessible lands.

3.2.2 Wetland Boundary Delineation

In Ontario, wetlands are mapped and evaluated under the Ontario Wetland Evaluation System (OWES). Mapped evaluated wetlands have undergone extensive study and been assessed based on their form and function under four categories: Biological, Social, Hydrological, and Special Features (Ministry of Natural Resources, 2022). Evaluated wetlands that score high enough are deemed PSW. Evaluated wetlands that do not score high enough to be a PSW are

classified as Locally Significant Wetlands (LSW) or non-significant. The province also maps unevaluated wetlands. These mapped wetlands are approximate; as such, they require field verification to confirm their presence and determine their boundaries.

Wetlands on the Site were delineated following provincially approved methods outlined in the Ontario Wetland Evaluation System: Southern Manual, 3rd Ed. (Ministry of Natural Resources, 2022). Fieldwork was carried out by provincially certified Cambium staff. Wetland boundaries were initially delineated and classified by orthoimagery interpretation. The presence/absence of wetlands on the Site was confirmed through field investigations during the growing season (i.e., late May through October). Wetland boundaries were determined using the 50% wetland vegetation rule. In some cases, vegetation-based delineations were corroborated through soils assessment. Soils were sampled using a hand auger and moisture regime was determined based on industry standard guidance (Heck, et al., 2017).

Wetland boundaries on the Site were marked with a hand-held GPS unit. Where wetland communities extend off the Site, classification was done through observation from property boundaries and publicly accessible lands.

3.2.3 Aquatic Habitat Assessment

An aquatic habitat survey was completed to identify and map all aquatic features on Site, including waterbodies, watercourses (permanent and intermittent), seeps, springs, and overland drainage paths. Orthoimagery and topographical mapping were reviewed to identify hydrologically connected aquatic features on adjacent lands that were inaccessible during the field assessments. On-site features were characterized based on in-stream and riparian cover, channel structure/morphology, substrates, flow, and hydrologic characteristics, as well as general documentation of channel instability, erosion/sedimentation, groundwater, and flow permanency indicators. Culverts were noted and georeferenced in the field. Shelter Valley Creek was assessed to determine its function as fish habitat, with consideration for sensitive, limiting, or critical habitat, such as spawning locations, overwintering habitat, and migratory corridors. Fish observations, habitat connectivity, and barriers to fish movement were

documented, when present, to provide regional context to their function within the general aquatic network and sub-watershed.

3.2.4 Habitat-Based and Encounter Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigations was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium staff actively searched for features that may provide specialized habitat for wildlife. These searches included inspecting tree cavities, overturning logs, rocks and debris, and scanning for scat, browse, sheds, fur, etc. Any evidence of breeding, forage, shelter, or nesting was noted. Species habitat and nesting observations were documented and photographed.

Encounter surveys included track and sign surveys, area searches, and incidental observations, concurrent with other field surveys. Any wildlife (including mammals, reptiles, amphibians, birds, butterflies, native bumble bees and dragonflies) seen and identified were recorded. When encountered, tracks and other signs (e.g., stick or cavity nests, tracks, scats, hair, tree scrapes, etc.) were identified to a species, if possible, and recorded.

3.2.5 Approach to Assessment of Significance and Impact Assessment

An assessment was conducted to determine the significance of natural features as well as significant species observed or determined to have the potential to exist on the Site or on adjacent lands. The assessment was completed by analysing natural environment data collected through the background material described in Section 3.1 and field surveys, using the methods and criteria outlined in the following reference materials:

- Natural Heritage Reference Manual [NHRM; (MNRF, 2010)]
- Habitat mapping for provincially endangered and threatened species through application of ESA regulated habitat or General Habitat Descriptions to the Site, where available.

An assessment was then conducted to determine how the proposed project may negatively impact significant natural features or SAR. Preventative, mitigative, and remedial measures were considered in assessing the net effects of the proposed project on the surrounding ecosystem.

4.0 Existing Conditions

Data acquired through the background information review and field investigations is summarized in the following sections.

4.1 Landscape Position and Topography

The Site is located within the Mixedwood Plains Ecozone: Lake Simcoe Rideau Ecoregion 6E, which extends southward from a line connecting Lake Huron in the west to the Ottawa River in the east, including Ottawa, Kingston, Peterborough, Barrie, Tobermory, Kitchener, and Toronto. This Ecoregion is characterized by a mixed geology that includes both shallow soil areas such as alvar and bedrock plains, as well as deep soil areas such as the Oak Ridges Moraine. It falls within the Great-Lakes St. Lawrence Forest Region, including deciduous and mixed forests; however, over 50% of the landscape in this Ecoregion is currently in use as agricultural land (Lee H. T., et al., 1998).

The Site is relatively flat and slopes gently to the south and east towards Shelter Valley Creek.

4.2 Surface Water, Hydrology, and Hydrogeology

Representative photos of surface water features discussed below are provided in Appendix D.

Shelter Valley Creek is provincially mapped as a permanent watercourse located along the east border of the Site, flowing south to Lake Ontario. Field investigations confirmed the creek to be present as mapped, occurring in proximity to the Site. The watercourse reach details are summarized in Table 4, below. Shelter Valley Creek is known to support a variety of fish species, as discussed further in Section 4.4. A topographic survey of the Site was completed by an Ontario Land Surveyor (OLS) at IBW Surveyors, and the Shelter Valley Creek floodplain limit (102.75 m above sea level, per communication from LTC) was provided to Cambium, as shown on Figure 2; the existing and proposed club house are located fully within the floodplain.

An unnamed tributary to Shelter Valley Creek is provincially mapped east of the Site and more than 120 m from the development footprint. Mapping depicts the feature as flowing east along the south side of Shelter Valley Road and then southeast through the golf course, adjacent to

the Site. Given the significant distance between the proposed development footprint and this feature, it was not assessed in the field.

An unmapped drainage feature was observed on adjacent lands east of the Site, originating from the roadside ditch north of Shelter Valley Road that contained cattails (*Typha sp.*). The drainage feature flows south through a culvert under Shelter Valley Road and is presumed to continue south to towards Shelter Valley Creek. Due to its location on private property, this feature was observed only from the roadside. Characteristics of Shelter Valley Creek and the drainage feature were documented over three transects (Table 4). Fish habitat in Shelter Valley Creek is discussed further in Section 4.4.

Table 4 Aquatic Habitat Details

Transect ID	Flow Type	Channel Type	Substrate Type	Wetted Width (m)	Max. Depth (m)	Cover Features
Shelter Valley Creek T1	Permanent	Defined natural banks	Cobble, Gravel	10 m	0.13 m	25% overhanging riparian cover; No instream vegetation cover
Shelter Valley Creek T2	Permanent	Defined natural banks	Cobble, Gravel	6 m	0.40 m	10% overhanging riparian cover; No instream vegetation cover
Drainage Feature at Roadside east of Site	Permanent	Channelized	Silt	0.5 m	0.03 m	90% overhanging riparian cover; no instream vegetation cover.

4.3 Plant Communities and Flora

4.3.1 Ecological Land Classification and Vegetation Inventory

The plant communities on the Site are summarized in Table 5 and are mapped on Figure 2. Representative photos for each community are provided in Appendix D and a list of identified plant species is provided in Appendix E.

Table 5 Plant Communities

No.	ELC Code	Community Description	Community Type	S - Rank
1	CVC	Commercial	Terrestrial	SNA
2	CGL_1	Golf Course	Terrestrial	SNA
3	CUW1	Cultural Mineral Woodland	Terrestrial	SNA
4	SWM1-1	White Cedar – Hardwood Mineral Mixed Swamp	Wetland	S3S4
5	CU	Cultural Medow (Shoreline)	Terrestrial	SNA
6	FOM7-2	Fresh - Moist White Cedar - Hardwood Mixed Forest	Terrestrial	S5

No provincially rare plant communities were observed on the Site or adjacent lands. Overall, the majority of the Site is comprised of commercial and cultural areas relating to the golf course (Communities 1 and 2). Mixed swamp (Community 4) bordered by cultural woodlands (Community 3) generally surround the golf course. The mixed swamp includes European Buckthorn (Rhamnus cathartica), Manitoba Maple (*Acer negundo*), Red Ash (*Fraxinus pennsylvanica*) and Trembling Aspen (*Populus tremuloides*). Provincial mapping of the areas east of Shelter Valley Creek was reviewed as part of this Study and appear to generally provide swamp habitat, with some upland areas.

4.3.1.1 Floral Inventory

The majority of vegetation on the Site is manicured, typical of the golf course setting. Plant species observed in natural areas throughout the Site were primarily common species, typical of the local landscape.

Butternut (*Juglans cinerea*), a provincially and federally endangered species was identified on and adjacent to the Site. A total of four young Butternut trees (under 10 cm diameter at breast height) were identified on the Site and one more mature tree on adjacent lands to the north was observed from the roadside (see Figure 2). Hybridity and health assessments were not

undertaken as part of the current Study. Butternut are discussed further in Section 5.6. No other at-risk or provincially rare (S1, S2, S3) vegetation species was identified on the Site.

European Buckthorn (*Rhamnus cathartica*) and European Swallowwort (*Vincetoxicum rossicum*) are invasive species; European Buckthorn was observed in community 3 and 4, while European Swallowwort was observed in Community 3, 4 and 6.

4.3.1.2 Soil Characterization

A summary of the soils conditions on the Site is provided in Table 6. Soils assessment stations are illustrated on Figure 2.

Table 6 Summary of Soil Conditions

Station	ELC Community	Soil Description	Effective Texture	Moisture Regime
1	6: FOM7-2	Sampled to a depth of 45 cm (to rock refusal). Sandy loam to 45 cm. Mottles observed at 45 cm, No gley observed. Water table not encountered.	Sandy Loam (3)	Moderately Moist (4)
2	4: SWM1-1	Sampled to a depth of 44 cm (to rock refusal). Sandy loam to 44 cm. Mottles observed at 37 cm, No gley observed. Water table not encountered.	Sandy Loam (3)	Moist (5)
3	3: CUW1	Sampled to a depth of 68 cm (to rock refusal). Loamy very fine sand to 68 cm. observed No mottles or gley observed. Water table not encountered.	Loamy Very Fine Sand (3)	Fresh (3)

4.4 Fish and Fish Habitat

Shelter Valley Creek is known to support a diverse fish community and provide thermal habitat conditions that support a number of cool and cold-water reliant fish species. Eight cold-water reliant species, including Rainbow Trout (*Oncorhynchus mykiss*) and Brook Trout (*Salvelinus fontinalis*), have been documented within the watercourse. Brook Trout is a fall spawning species with a habitat preference for small substrates. Rainbow Trout is an early spring spawning species that prefers gravel substrates. Both native trout species are relatively

intolerant to environmental disturbances and anthropogenic stresses. Based on the substrates present in Transect 1 and Transect 2 of Shelter Valley Creek (see Section 4.2 and Table 4), the reaches may provide suitable spawning habitat for these cold-water species.

No barriers to fish movement were observed within the Site. Appendix F includes a list of fish species known to occur in Shelter Valley Creek, based on the background information review, and species-specific life history information.

4.5 Wildlife and Wildlife Habitat

The Site is primarily cultural in nature, with open manicured habitats (Community 1 and 2). These areas are characterized mainly by exposed gravel and well manicured grass that provide limited opportunities for wildlife. Treed patches between golf greens provide some cover and diversity for edge-tolerant species. The periphery of the site is forested in nature and may provide better habitat for a wider range of wildlife. The bank of Shelter Valley Creek on the east edge of the Site is a stable shoreline constructed with large rocks. The area may provide basking habitat for a variety of snake and turtle species. No rock piles or outcrops were observed on the Site.

Incidental wildlife species observations on the Site included: American Robin (*Turdus migratorius*), American Crow (*Corvus brachyrhynchos*), Black-capped Chickadee (*Poecile atricapillus*) and Red Squirrel (*Sciurus vulgaris*). Some small fish were observed in Shelter Valley Creek. No wildlife SAR were observed on the Site or adjacent lands.

5.0 Assessment of Significance and Impact Assessment

The following sections address potential impacts to protected features identified on and adjacent to the Site that may result from the proposed development and site alteration:

- Surface Water Features (including wetlands)
- Fish Habitat
- Significant Woodlands
- Significant Valleylands
- Significant Wildlife Habitat: Deer Wintering (Stratum II)
- Habitat of Endangered and Threatened Species

No other natural heritage features protected by provincial policy were confirmed on or adjacent to the Site.

Mitigation measures and best management practices have been recommended to ensure that the integrity of the current existing natural features are protected and/or enhanced and furthermore that their functions are not negatively impacted during or following construction.

5.1 Significant Woodlands

Section 8.4(vii) of the Township of Alnwick/Haldimand Official Plan (2015) states that a woodland larger than 0.5 ha in size shall be considered a *potential* Significant woodland and requires completion of an evaluation of significance in accordance with the NHRM (MNRF, 2010). Woodland communities 3 and 4 on the Site are greater than 0.5 ha and as such, an evaluation of their significance is required. A summary of the significant woodlands assessment, based on the criteria and standards listed in Table 7-2 of the NHRM is provided in Table 7.

Table 7 Summary of Woodland Significance Evaluation

Woodland Significance Criteria	Meets Criteria (Yes/No)
Woodland Size Criterion	
Woodland Size	Yes
Ecological Functions Criteria	
Woodland Interior	Yes
Proximity to Other Woodlands and Other Habitats	No
Linkages	No
Water Protection	Yes
Woodland Diversity (composition)	No
Uncommon Characteristics Criteria	
Unique Species Composition	No
Rare Vegetation Community	No
Rare or Uncommon Plant Species	No
Older Woodland Characteristics	No
Economic and Social Functions Criteria	
High Economic or Social Value	Unknown

Based on the assessment above, woodland Communities 3 and 4 and the contiguous woodlands on adjacent lands east of the Site (based on interpretation of orthoimgary) are considered significant woodlands herein. The overall woodland extends to cover an area of approximately 70 ha; the woodlands on the Site comprise a small portion of the western edge of the overall feature. No interior habitat is present on the Site; however, the overall woodland feature includes approximately 18 ha of interior habitat. The woodlands also provide important cover for Shelter Valley Creek.

No woodland removals are proposed. As such, no impacts to this feature are associated with the proposed development and significant woodlands are not discussed further herein.

5.2 Significant Valleylands

The Northumberland County Natural Heritage System Plan (2020) defines significant valleyland as: a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year.

In the absence of County information, the NHRM (Ministry of Natural Resources, 2010) was consulted for guidance in determining the limit of the Shelter Valley Creek valleyland. The document indicates the physical limit of a valleyland is commonly defined by the stable top-of-bank or top-of-slope. For less defined systems, other indicators can be used, including area of riparian vegetation, the flooding hazard limit, the meander belt or the highest general level of seasonal inundation.

The surface water assessment of Shelter Valley Creek (see Section 4.2) revealed a well-defined top-of-bank.

Given that the proposed construction occurs outside of the valleyland and within the same footprint as the existing structure, no new impacts to the function of the valleyland are anticipated due to the proposed development. Potential temporary impacts will be mitigated through employment of erosion and sediment control measures (see Section 6.0).

5.3 Significant Wildlife Habitat

The NHRM (MNRF, 2010) outlines assessment requirements for SWH for various scales of development. The Province recommends that the evaluation of SWH be investigated on lands beyond the boundary of a settlement area, when a change in land use is proposed (Ministry of Natural Resources, 2010). The land use will remain the same, and as such, a fulsome assessment is not required for this Site. However, a single SWH type is provincially mapped on the Site and adjacent lands, as discussed below.

Deer Wintering (Stratum II)

Deer Wintering SWH (Stratum II) is mapped in a 1km square overlapping the Site by the MNR. Stratum II areas are comprised primarily of mixed and deciduous forests that offer plenty of browse; agricultural lands may also be included. Deer typically congregate in Stratum II areas

when snow cover is up to 20 cm deep, before moving into core areas (Stratum I) when winter conditions are more severe. Deer wintering areas are identified and mapped as SWH by the MNR and this mapping is typically not altered by independent site-level Study (Ministry of Natural Resources and Forestry, 2015). As no land use changes are proposed that would impact deer wintering activities on the Site, this feature type is not discussed further herein.

5.4 Significant Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSI) are natural heritage features identified by the MNR. No ANSIs are mapped on or adjacent to the Site. As such, this feature type is not discussed further herein.

5.5 Fish Habitat

No construction or Site alteration is proposed within Shelter Valley Creek, which provides fish habitat on the Site. The existing and proposed structures are located within the Shelter Valley Creek floodplain, as delineated by IBW Surveyors for the Client. No indirect impacts to fish habitat are anticipated in relation to the proposed development, provided the erosion and sediment control (ESC) measures outlined in Section 6.2 are implemented.

5.6 Habitat of Endangered and Threatened Species

The MECP is responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks, 2019). This document aims to "help clients better understand their obligation to gather information and complete a preliminary screening for SAR before contacting the Ministry". This document was used to guide the SAR habitat-based screening for the Study.

A list of SAR, with potential to occur in the general vicinity of the Site has been compiled based on known species' ranges, habitat requirements, and review of background information sources (as listed in Section 3.1). In addition, the list has been augmented with direct field observations from the Study, as detailed in the previous sections. Cambium has employed a

habitat-based screening, supplemented with targeted field surveys, when necessary, in order to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix C and a discussion of the results is provided below.

Eastern Red Bat (*Lasiurus borealis*), Eastern Small-footed Myotis (*Myotis leibii*), Hoary Bat (*L. cinereus*), Little Brown Myotis (*M. lucifugus*) and Northern Myotis (*M. septentrionalis*), Silver-haired Bat (*Lasionycteris vagans*), Tri-coloured Bat (*Perimyotis subflavus*) are listed provincially and federally as endangered. These bat species have potential to occur in the vicinity of the Site. Trees present throughout the Site have potential to provide roosting opportunities for SAR bats. Open areas of the Site may be used as foraging habitat for these species. No SAR bats or evidence of bats was observed on the Site. Avoidance and mitigation measures (timing window for tree removal) are provided in Section 6.0.

Eastern Hog-Nosed Snake (*Heterodon platirhinos*) is listed provincially and federally as threatened. It has potential to be present in the vicinity of the Site. This species could use dry sandy forests, including Community 6 on the Site for nesting and hibernation; in addition the wetlands and watercourse may provide foraging habitat for this species. Eastern Hog-Nosed Snake was not observed during field investigations. No habitat is present for this species within the existing or proposed footprint for the proposed development; however, this species has potential to move across the Site during its active season (approximately May to October). As such, mitigation (exclusion) measures to avoid impacts are recommended, and outlined in Section 6.0.

Butternut is listed provincially and federally as endangered. Five butternut trees were observed on the Site as shown on Figure 2. The trees on the Site were relatively young, and generally lacking features to confirm whether they are pure Butternut (protected SAR) or hybrid (not protected). Given that the trees occur outside the proposed building area, DNA sampling and/or health assessments were not undertaken as part of this Study. Provided no vegetation removals or grading occur within a 30 m setback around each tree (see Figure 3); the proposed development is anticipated to be in compliance with the ESA with regards to this species. As such, Butternut is not discussed further herein.

Habitat for the following additional species is limited to natural areas of the Site including Shelter Valley Creek and its banks. No impacts are anticipated to these habitats or individuals of the following species in relation to the proposed development:

- Bank Swallow (*Riparia riparia*)
- American Eel (*Anguilla rostrata*)

5.7 Sensitive Surface Water Features

The unevaluated wetlands on and adjacent to the Site are considered sensitive surface water features. No alteration or development is proposed within the wetlands on or adjacent the Site. No indirect impacts to the wetlands on the Site are anticipated in relation to the proposed development provided the recommendations in Section 6.2 are implemented.

5.7.1 Township of Alnwick-Haldimand Official Plan

Policy 3.19 of the Alnwick-Haldimand Official Plan indicates that "*no buildings or structures will be allowed in an identified floodplain without the written approval of the appropriate Conservation Authority*". Provided the LTC is in agreement with the proposed plan, based on the recommendations provided herein, as well as in the Floodplain Assessment for the Site (Jewell Engineering Inc. 2025), the proposed development would be in compliance with the Official Plan.

6.0 Mitigation Measures and Best Practices

The mitigation measures and best management practices outlined below should be implemented on the Site, to minimize the potential for adverse impacts to natural heritage features and functions on and adjacent to the Site.

6.1 Setbacks

Shelter Valley Creek and the unevaluated wetlands are expected to remain intact following the proposed development. In order to ensure there are no indirect impacts to these features, 30 m setbacks from both the creek and the wetland should be respected prior to and during the proposed development.

In addition, pending further assessment (i.e., regarding hybridity testing and/or health assessment results), a 30 m setback is recommended for each Butternut tree.

All recommended setbacks are shown on Figure 3, and should be incorporated into all future Site Plans. The setbacks should be demarcated on the ground with erosion and sediment control fencing. No disturbance (e.g., vegetation clearing, grading) should occur within the setbacks.

6.2 Best Management Practices

Table 8 Best Management Practice Recommendations

Potential Impact	Recommended Best Practice
Erosion and Sedimentation	Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. This key control measure will help prevent sediment from entering surface water features (i.e., wetlands and the watercourse) in the surrounding landscape. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.

Potential Impact	Recommended Best Practice
	Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.
Wildlife: Birds (Disturbance and Harm)	Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act, 1994*. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines).
Wildlife: Bats (Disturbance and Harm)	No tree removals are anticipated to be required for the proposed development. Any minor tree removal should be limited to the building envelope to the extent possible. Small scale tree removal will not result in impairing or eliminating the function of habitat to support bat life processes provided the tree removal avoids the active bat season (April 1 – September 30).
Wildlife: Reptiles (Disturbance and Harm)	Sediment fencing can function as wildlife exclusion fencing. To exclude wildlife from the Site, sediment fencing should be installed around the entire perimeter of the construction area prior to the earlier of May 1 or commencement of Site preparation to keep turtles and snakes from entering the construction area. This fencing should be made of heavy-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below surface of the ground, with an above-ground height of at least 60 cm. The sediment fence should be inspected regularly to ensure that it remains in good condition: and any downed areas, rips, or holes should be repaired or replaced immediately. A designated point of ingress/egress should be identified, and a moveable barrier be constructed, to allow for the Site to fully remain enclosed while allowing vehicular access to the Site as needed. The construction area should also be actively inspected for turtles and snakes each day prior to the start of work throughout the duration of construction. As the Site is located adjacent to potential habitat for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work should stop immediately, and the turtle should be left to finish nesting undisturbed. The turtle should be photographed, and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or

Potential Impact	Recommended Best Practice
	other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.
Species at Risk (SAR; Threatened and Endangered)	SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
Spread of Invasive Species	Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include: 1. Revegetate with species native to the local area. 2. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media. 3. Get to know the most common invasive species in the area. 4. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property. Equipment and vehicles coming into the work area should be free of soil and seeds that could introduce non-native and invasive species following the Clean Equipment Protocol for Industry: Inspecting and Cleaning Equipment for the Purposes of Invasive Species Prevention (Halloran, 2013) 5. Immediately eradicate invasive species if they are observed on the property. 6. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage. 7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions. An excellent resource for identifying and controlling invasive species can be found through the Ontario Invasive Plant Council: Home - Ontario Invasive Plant Council (ontarioinvasiveplants.ca) (OIPC, 2022)
Anthropogenic Impacts – Noise	Noise is not expected to increase significantly because of the proposed development as it is consistent with the existing land use on the Site. Maintaining the wooded areas surrounding the natural features on the Site will serve to buffer wildlife within the natural areas from noise-related impacts. Temporary acute noise may occur during construction activities and should follow appropriate local noise by-laws. All equipment should be

Potential Impact	Recommended Best Practice
	equipped with appropriate mufflers to mitigate noise levels during construction.

7.0 Policy Conformity

7.1 Municipal Policies

As explained in Section 5.7.1, provided that the LTC permits the proposed development within the Shelter Valley Creek floodplain, the proposed development will be in compliance with the policies of the Official Plan.

7.2 Conservation Authority Policies

Under Ontario Regulation 41/24, LTC does not typically permit development within floodplains. However, several exceptions are provided in the LTC Policy Document (LTC 2024).

The Client is required to consult with LTC an obtain a permit prior to undertaking any Site alteration or construction related to the proposed development.

7.3 Provincial Policies

Based on the key natural heritage and/or hydrologic features identified on or adjacent to the Site and the findings of the field investigations detailed herein, the proposed development of the Site is in conformity with the PPS. Conformity with applicable natural heritage policy is summarized in Table 9.

Table 9 PPS Policy Conformity Summary

Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Wetland in Ecoregions 5E, 6E and 7E or in the Canadian Shield north of Ecoregions 5E, 6E and 7E	No	No	N/A
Significant Coastal Wetland	No	No	N/A
Coastal Wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b)	No	No	N/A

Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)	Yes	Yes	2.1.5 b); 2.1.8
	Explanation: The proposed development does not encroach into the significant woodlands on the Site. No direct or indirect impacts are anticipated, provided the recommendations in Section 6.0 are implemented.		
Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)	Yes	Yes	2.1.5 c); 2.1.8
	Explanation: The proposed development does not encroach into the significant valleylands on the Site. No direct or indirect impacts are anticipated, provided the recommendations in Section 6.0 are implemented.		
Significant Wildlife Habitat (including habitat of special concern species)	Yes	Yes	2.1.5 d); 2.1.8
	Explanation: The proposed development does not include any change in land use that could impact the provincially mapped deer wintering habitat on the Site. No direct or indirect impacts are anticipated. Assessment of additional SWH types is not required for the proposed scale of development, as detailed in Section 5.3.		
Habitat of Threatened and Endangered Species	Yes	Yes	2.1.7
	Explanation: The proposed development is anticipated to be in compliance with applicable regulations under the ESA, provided the recommendations in Section 6.0 are implemented.		
Areas of Natural and Scientific Significance	No	No	N/A
Fish Habitat	Yes	Yes	2.1.6; 2.1.8
	Explanation: The proposed development is anticipated to be in compliance with applicable regulations under the Fisheries Act, provided the recommendations in Section 6.0 are implemented.		

7.4 Federal Policies

7.4.1 Species at Risk Act

The SARA applies to federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

Mitigation measures outlined in Table 8 will serve to avoid impacts to fish, fish habitat, and nesting birds.

7.4.2 Fisheries Act

Protection provisions in the federal *Fisheries Act* prohibit the harmful alteration, disruption or destruction (HADD) of fish habitat. Any work proposed within or near a watercourse must be assessed to determine the risk of causing HADD of fish habitat. The mitigation measures and best practices detailed in Section 6.0 are expected to minimize impacts to fish and fish habitat and align with agency guidance.

7.4.3 Migratory Birds Convention Act, 1994

Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act*, 1994. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines). Provided this timing window is respected, no impacts to breeding birds are anticipated.

8.0 Summary of Recommendations

The following recommendations are provided for the proposed development:

1. All required approvals and permits should be obtained prior to the commencement of site alteration or construction activities.
2. All development setbacks identified herein (30 m from watercourse, wetlands, and Butternut trees) should be included on future Site Plans.
3. ESC fencing should be used to demarcate all development setbacks on the ground.
4. Prior to any construction activities taking place, it is essential that perimeter ESC fencing be installed around construction areas, as detailed in Table 8 (see both 'Erosion and Sedimentation' and 'Wildlife: Reptiles (Disturbance and Harm)').
5. Any minor tree removals should be limited to the building envelope to the extent possible, and should occur between October 1 and March 31 (outside the combined bird breeding and bat roosting timing windows).
6. Any other vegetation removals should occur between September 1 and March 31 (outside the bird breeding timing window).
7. SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
8. Best management practices to reduce the spread of invasive species should be implemented, as detailed in Table 8 (see 'Spread of Invasive Species').
9. Temporary acute noise may occur during construction activities and should follow appropriate local noise by-laws. All equipment should be equipped with appropriate mufflers to mitigate noise levels during construction.

9.0 Closing

In closing, potential negative impacts associated with the proposed development and site alteration can be appropriately minimized, provided that the recommendations outlined in Section 8.0 are followed. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and functions identified on or adjacent to the Site; provided the recommendations herein are implemented, the proposed development is anticipated to comply with provincial policy. Provided the Client is able to reach a permitting agreement with LTC regarding construction within the Shelter Valley Creek floodplain, the proposed development will be in compliance with applicable CA regulations and municipal policies.

Respectfully submitted,

Cambium Inc.

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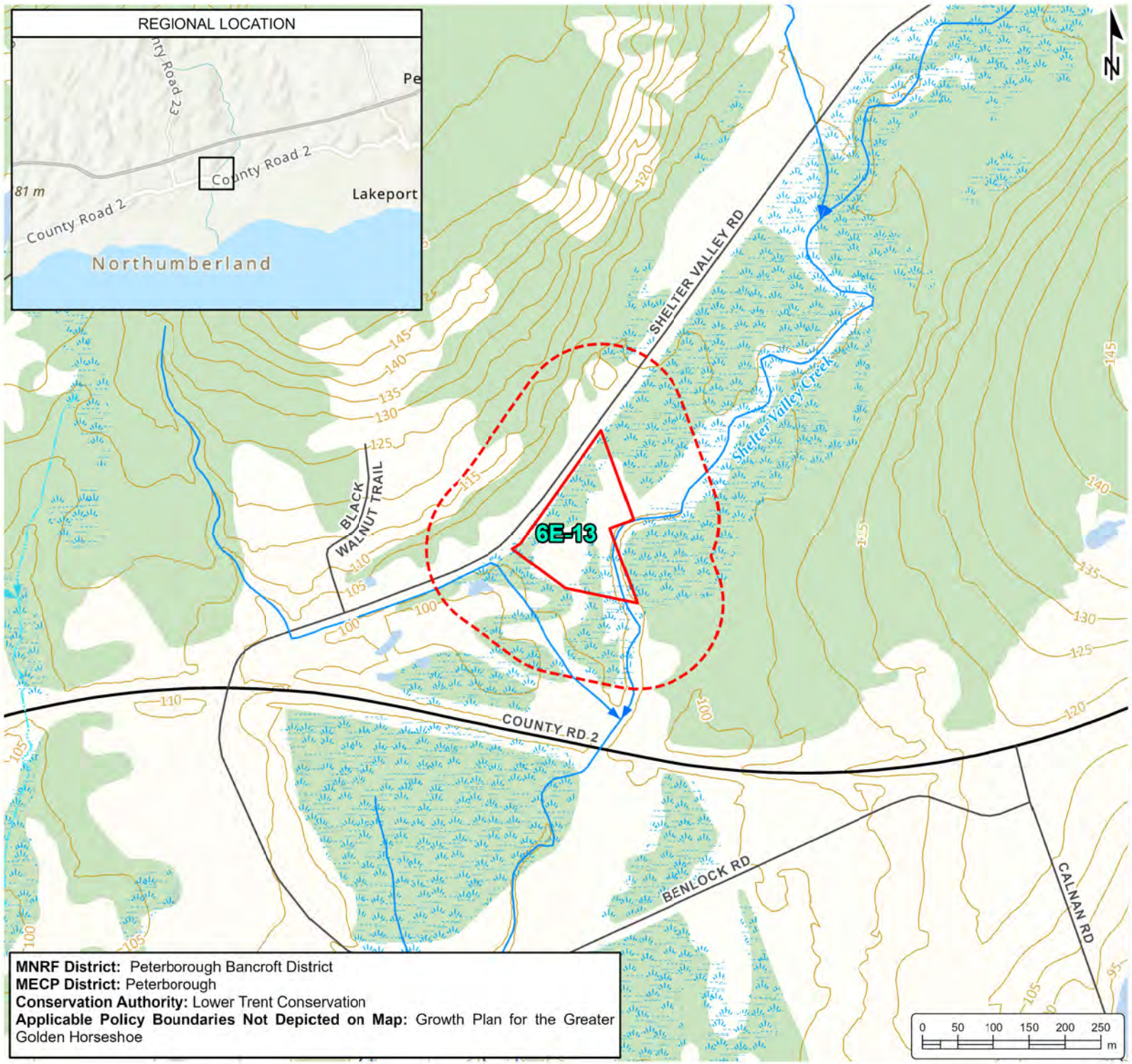
Appended Figures



MNRF District: Peterborough Bancroft District
MECP District: Peterborough
Conservation Authority: Lower Trent Conservation
Applicable Policy Boundaries Not Depicted on Map: Growth Plan for the Greater Golden Horseshoe

ENVIRONMENTAL IMPACT STUDY

GRAFTON CREEKSIDE GOLF
1225 Shelter Valley Rd
Grafton, Ontario

LEGEND

- Major Road
- Minor Road
- Contour (5m Interval)
- Watercourse, Permanent
- Watercourse, Intermittent
- Unevaluated Wetland
- Ecodistrict
- Water Area
- Wooded Area
- 120m Adjacent Lands
- Site (approximate)

Notes:
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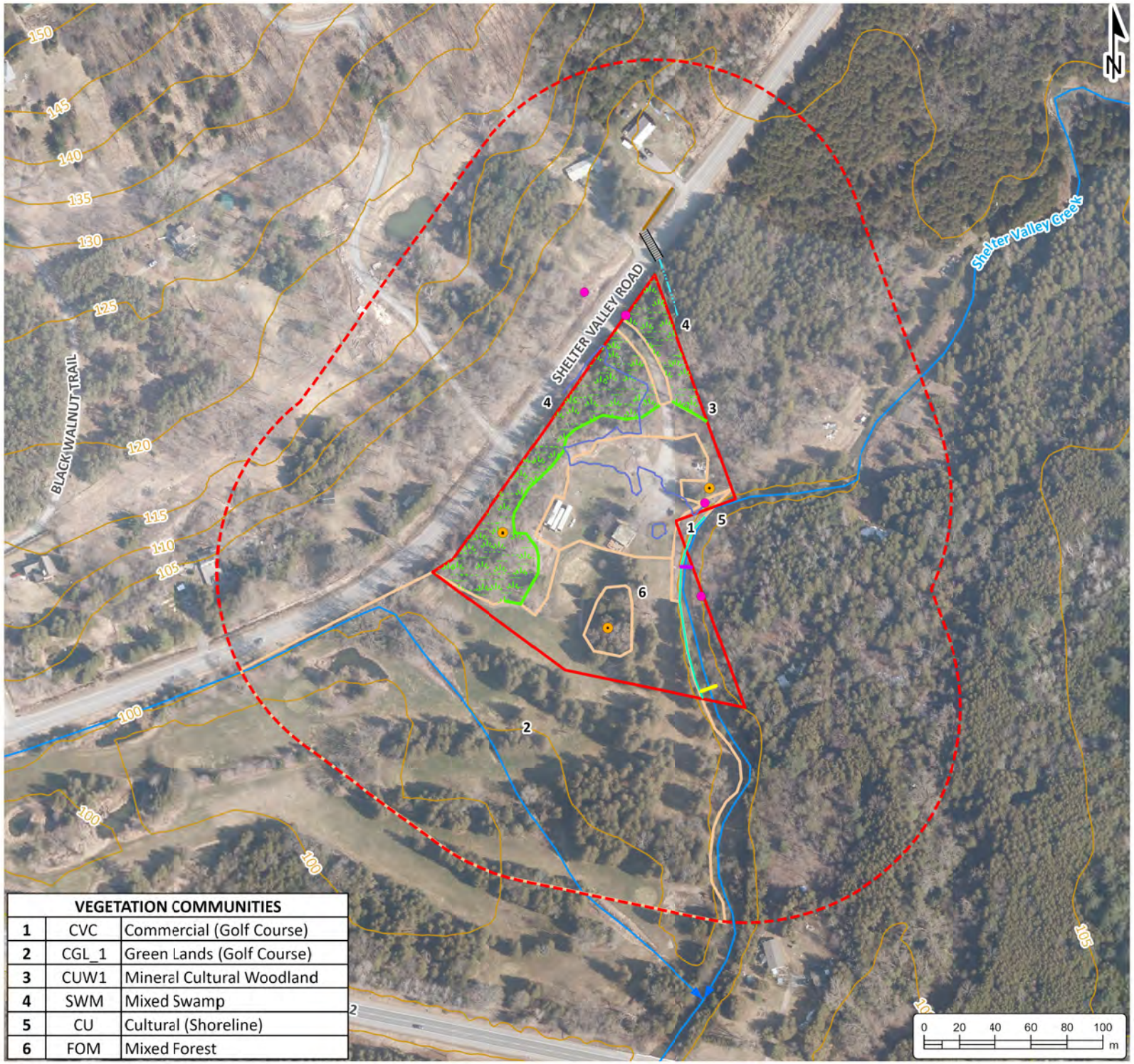
- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
- Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.

CAMBIUM
194 Sophia Street
Peterborough, Ontario, K9H 1E5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

SITE LOCATION AND POLICY AREAS

Project No.: 21143-001		Date: December 2024	
		Rev.:	
Scale: 1:7,500		Projection: NAD 1983 UTM Zone 17N	
Created by: MAT	Checked by: KD	Figure: 1	

O:\GIS\MXDs\21100-21199\21143-001 James Brouwer - EIS - Grafton Creekside Golf\2024-12-19 EIS.aprx



ENVIRONMENTAL IMPACT STUDY

GRAFTON CREEKSIDE GOLF
1225 Shelter Valley Rd
Grafton, Ontario

LEGEND

- Butternut
- Soil Point
- Culvert
- Roadside Ditch
- Drainage Feature
- Aquatic Transect 1
- Aquatic Transect 2
- Contour (5m Interval)
- Watercourse, Permanent
- 102.77 Flood Elevation Contour
- Edge of Water
- Field Verified Wetland Boundary
- Field Verified Wetland
- Vegetation Community
- 120m Adjacent Lands
- Site (approximate)

VEGETATION COMMUNITIES		
1	CVC	Commercial (Golf Course)
2	CGL_1	Green Lands (Golf Course)
3	CUW1	Mineral Cultural Woodland
4	SWM	Mixed Swamp
5	CU	Cultural (Shoreline)
6	FOM	Mixed Forest

Notes:
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NATURAL HERITAGE FEATURES AND ECOLOGICAL SURVEY STATIONS

Project No.: 21143-001	Date: December 2024	
	Rev.:	
Scale: 1:3,000	Projection: NAD 1983 UTM Zone 17N	
Created by: MAT	Checked by: KD	Figure: 2

O:\GIS\MXDs\21100-21199\21143-001 James Brouwer - EIS - Grafton Creekside Golf\2024-12-19 EIS.aprx

ENVIRONMENTAL IMPACT STUDY

GRAFTON CREEKSIDE GOLF
1225 Shelter Valley Rd
Grafton, Ontario

LEGEND

- Butternut
- Culvert
- Roadside Ditch
- Drainage Feature
- Watercourse, Permanent
- 102.77 Flood Elevation Contour
- Edge of Water
- Edge of Water Setback 30m
- Field Verified Wetland Boundary
- Wetland Setback 30m
- Field Verified Wetland
- Butternut Setback 30m
- 120m Adjacent Lands
- Site (approximate)

Notes:
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www.cambium-inc.com

NATURAL HERITAGE CONSTRAINTS

Project No.: 21143-001		Date: December 2024	Rev.:
Scale: 1:2,750		Projection: NAD 1983 UTM Zone 18N	
Created by: DBB	Checked by: KD	Figure: 3	

O:\GIS\MXDs\21100-21199\21143-001 James Brouwer - EIS - Grafton Creekside Golf\2024-12-19 EIS.aprx

Appendix A
Correspondence

Kristina Domsic

From: Kim Stephens <kim.stephens@ltc.on.ca>
Sent: September 18, 2024 8:56 AM
To: Brad Graham; Tracey Webster; Scott Robertson
Cc: Kristina Domsic; File; Primary Painting
Subject: Re: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hi Brad,

Thank you for sending this Dropbox link. The Topographic Survey completed uses relative elevations (i.e., the elevation points taken are relative to the clubhouse finished floor elevation which was assigned a 100m elevation). This means they note the property elevations as higher or lower than the relative reference point that was established.

Georeferenced elevations are noted in a specific vertical and horizontal datum. This allows us to compare the elevations on the property to the known floodplain elevation. Based on their site plan, the property is showing existing grades and elevations that are just below 100.00 metres. The known floodplain elevation for this property ranges, but at the clubhouse appears to be 102.77 metres CGVD28.

An Ontario Land Surveyor (OLS) will need to complete a georeferenced topographic baseplan in the vertical datum CGVD28 so the extent of the floodplain on the property can be determined. At minimum, an OLS will need to survey the elevation of the benchmark noted in the plan provided (i.e., what is the actual elevation of the finished floor of the clubhouse) so a conversion factor can be identified for reviewing the relative elevations. As the proposal is to demolish and reconstruct the structure, it would be beneficial for your OLS to take an additional 2 benchmark elevations at locations that are not proposed to be removed, so they can be used for later reference (e.g., confirming floodproofing elevation).

Please let me know if you have any additional questions. If your surveyor would like to reach out directly to Scott or me to discuss, they are welcome to.
LTC File: GD-24-046

Best,
Kim

Kim Stephens, M.Env.Sc.
Planning Ecologist
Lower Trent Region Conservation Authority
714 Murray Street, R.R. #1, Trenton, ON K8V 0N1
Tel: 613-394-3915 ext. 238 | Email: kim.stephens@ltc.on.ca | www.ltc.on.ca

**COVID-19 Notice: Our office is now open. Appointments are encouraged for Planning and Regulations staff.

From: Brad Graham <brad@powerhousecan.ca>
Sent: Tuesday, September 17, 2024 1:00 PM

To: Tracey Webster <twebster@ahtwp.ca>; Scott Robertson <scott.robertson@ltc.on.ca>
Cc: Kristina Domsic <Kristina.Domsic@cambium-inc.com>; File <file@cambium-inc.com>; Kim Stephens <kim.stephens@ltc.on.ca>; Primary Painting <[redacted]>
Subject: Re: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hi Tracey,

We completed a topographical survey in the spring of this year.

I have copied Scott Robertson from LTC to the email, and I will provide a link to dropbox that has all our previous documents inside.

https://www.dropbox.com/scl/fo/92o1dq191nvbf6p3exm3t/ACJk3XmTC3k42homgXL2otk?rlkey=h95xi8vjtbahigzthn75gxs7j&st=7qxgnbnl&dl=0

Please let us know the next steps.

Thanks, talk to you soon.

On Fri, Sep 13, 2024 at 4:07 PM Tracey Webster <twebster@ahtwp.ca> wrote:

> Hi Kristina,
> I have attached a copy of the minutes we had from a preconsultation meeting earlier this year. A topographical survey was noted to determine the limits.
>
> Thank you,
>
> Tracey Webster
> Senior Planner
> Township of Alnwick/Haldimand
> 10836 County Road 2, P.O. Box 70
> Grafton, Ontario K0K 2G0
> 905-349-2822 ext.23
> twebster@ahtwp.ca

From: Kristina Domsic <Kristina.Domsic@cambium-inc.com>
Sent: September 13, 2024 1:49 PM
To: Tracey Webster <twebster@ahtwp.ca>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>; Kim Stephens <kim.stephens@ltc.on.ca>; Primary Painting [redacted]
Subject: RE: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hello Tracey,

What type of study do you require to confirm the floodplain? Cambium can confirm where it falls on the Site if the local flood elevation is known.

Based on discussions with the landowner who has lived there his whole life, they have never seen the creek overtop the bank. I understand that is not a technical answer, but wanted to mention it as some general context to the conditions on the Site.

Thanks,
Kristina

Kristina Domsic, B.E.S She/Her
Project Coordinator - Ecologist
Cambium - Peterborough
705.559.2136
866.217.7900
cambium-inc.com

Environmental | Building Sciences | Geotechnical | Construction Testing & Inspection

---

From: Tracey Webster <twebster@ahtwp.ca>
Sent: September 13, 2024 1:40 PM
To: Kristina Domsic <Kristina.Domsic@cambium-inc.com>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>; Kim Stephens <kim.stephens@ltc.on.ca>; Primary Painting [redacted]
Subject: RE: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hi Kristina,
In order to rezone the lands to permit an expansion, it will need to be demonstrated that a footprint exists outside of both the wetlands, their required setbacks and floodplain. Have there been works done to demonstrate the clubhouse is outside of the floodplain?

Thank you,

Tracey Webster
Senior Planner
Township of Alnwick/Haldimand
10836 County Road 2, P.O. Box 70
Grafton, Ontario K0K 2G0
905-349-2822 ext.23
twebster@ahtwp.ca

From: Kristina Domsic <Kristina.Domsic@cambium-inc.com>
Sent: September 4, 2024 12:47 PM
To: Kim Stephens <kim.stephens@ltc.on.ca>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>; Tracey Webster <twebster@ahtwp.ca>; nhoornweg@ahtwp.ca
Subject: RE: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hello Kim,

I am just writing to follow up on my recent message below. I am copying in my Client's contacts at the Township as well.

Tracey and Nick, my apologies for not including you on the original email below. If you have any input to the below/attached please let us know.

We are working to complete the EIS report for this project as quickly as possible.

Kindly,
Kristina

Kristina Domsic, B.E.S She/Her
Project Coordinator - Ecologist
Cambium - Peterborough
705.559.2136
866.217.7900
cambium-inc.com

From: Kristina Domsic
Sent: August 22, 2024 5:30 PM
To: Kim Stephens <kim.stephens@ltc.on.ca>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>
Subject: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

Hello Kim,

I hope this email finds you well!

Cambium has been retained by Grafton Creekside Golf (Client) to begin ecological studies in relation to their proposed clubhouse reconstruction. The proposed construction would be located in the same area as the existing clubhouse but occupying a larger footprint. The Client has indicated a strong

interest in preserving the natural qualities in and around the golf course, but is also looking to improve and expand on some of their services.

I conducted a site visit on August 14, 2024, which included ELC and vegetation inventory, wetland boundary delineation (per OWES), mapping of drainage connections and aquatic habitat, and screening for species at risk and general wildlife habitat. The attached constraints figure shows the field-verified wetland boundaries, the approximate edge of water along the west side of Shelter Valley Creek (no riparian wetland was present – see attached representative photo), and 30 m setbacks from each. The treed edge between the clubhouse and the wetland to the west is cultural in nature, including a berm and storage areas. Soil points (hand auger) were used to confirm the wetland boundary as the vegetation in the wetland was generally facultative with few wetland obligate or indicator species present. I can confirm that no organic soils were encountered on the Site, and the resultant moisture regime varied from 4 (moderately moist) in areas outside the wetland boundary to 5 (moist) within the wetland boundary. This included sampling in the treed area directly south of the existing clubhouse (MR=4).

I have also attached the existing and proposed building locations, as provided by the Client's agent (Brad Graham, copied here). You will note that the proposed clubhouse drawing shows the new building located fully outside of our field-verified features and setbacks.

Is it possible for you to confirm at this point whether the proposed new construction would require a permit from your office? Or would more information or a formal report be required? My current understanding is that the Township would like the wetlands re-zoned as EP lands as part of this application process, so an EIS report would be required on their end to address provincial and local policies. If the Client decides to go forward with the application, this email and any responses would be appended to the EIS and form part of the Terms of Reference for that study.

We look forward to receiving any input or feedback you would like to provide at this time. In particular, if any further field investigations will be required to meet LTC's regulatory requirements in relation to the proposed clubhouse re-construction, we would appreciate being informed of that as soon as possible.

Kind regards,
Kristina

Kristina Domsic, B.E.S She/Her
Project Coordinator - Ecologist
Cambium - Peterborough
705.559.2136
866.217.7900
cambium-inc.com

Kristina Domsic

From: Kim Stephens <kim.stephens@ltc.on.ca>
Sent: September 5, 2024 9:28 AM
To: Kristina Domsic
Cc: Brad Graham; File; twebster@ahtwp.ca
Subject: Re: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)
Attachments: GD-24-046 (map).pdf

Hi Kristina,

Thanks for touching base on this property. I look forward to receiving the formal submission with documentation from your fieldwork, and updating regulatory mapping once accepted. The scope of fieldwork completed appears to be sufficient to address regulatory policies for wetlands.

I will note that the property has additional features that would affect a future development proposal. I've attached our current regulatory map. The majority of the property is within the floodplain (floodway) for Shelter Valley Creek, which is the most constraining feature affecting potential future development on the property. A permit would be required for any proposed development on the property.

If you'd like to discuss this file, I am in the office today and available for a call after 10:30am.
LTC File: GD-24-046

Best,
Kim

Kim Stephens, M.Env.Sc.
Planning Ecologist
Lower Trent Region Conservation Authority
714 Murray Street, R.R. #1, Trenton, ON K8V 0N1
Tel: 613-394-3915 ext. 238 | Email: kim.stephens@ltc.on.ca | www.ltc.on.ca

**COVID-19 Notice: Our office is now open. Appointments are encouraged for Planning and Regulations staff.

From: Kristina Domsic <Kristina.Domsic@cambium-inc.com>
Sent: Wednesday, September 4, 2024 12:46 PM
To: Kim Stephens <kim.stephens@ltc.on.ca>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>; twebster@ahtwp.ca <twebster@ahtwp.ca>; nhoornweg@ahtwp.ca <nhoornweg@ahtwp.ca>
Subject: RE: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

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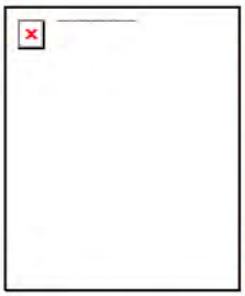
We are working to complete the EIS report for this project as quickly as possible.

Kindly,
Kristina



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From: Kristina Domsic
Sent: August 22, 2024 5:30 PM
To: Kim Stephens <kim.stephens@ltc.on.ca>
Cc: Brad Graham <brad@powerhousecan.ca>; File <file@cambium-inc.com>
Subject: Grafton Creekside Golf, 1225 Shelter Valley Road, Grafton (Cambium Ref: 21143-001)

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We look forward to receiving any input or feedback you would like to provide at this time. In particular, if any further field investigations will be required to meet LTC's regulatory requirements in relation to the proposed clubhouse re-construction, we would appreciate being informed of that as soon as possible.

Kind regards,
Kristina

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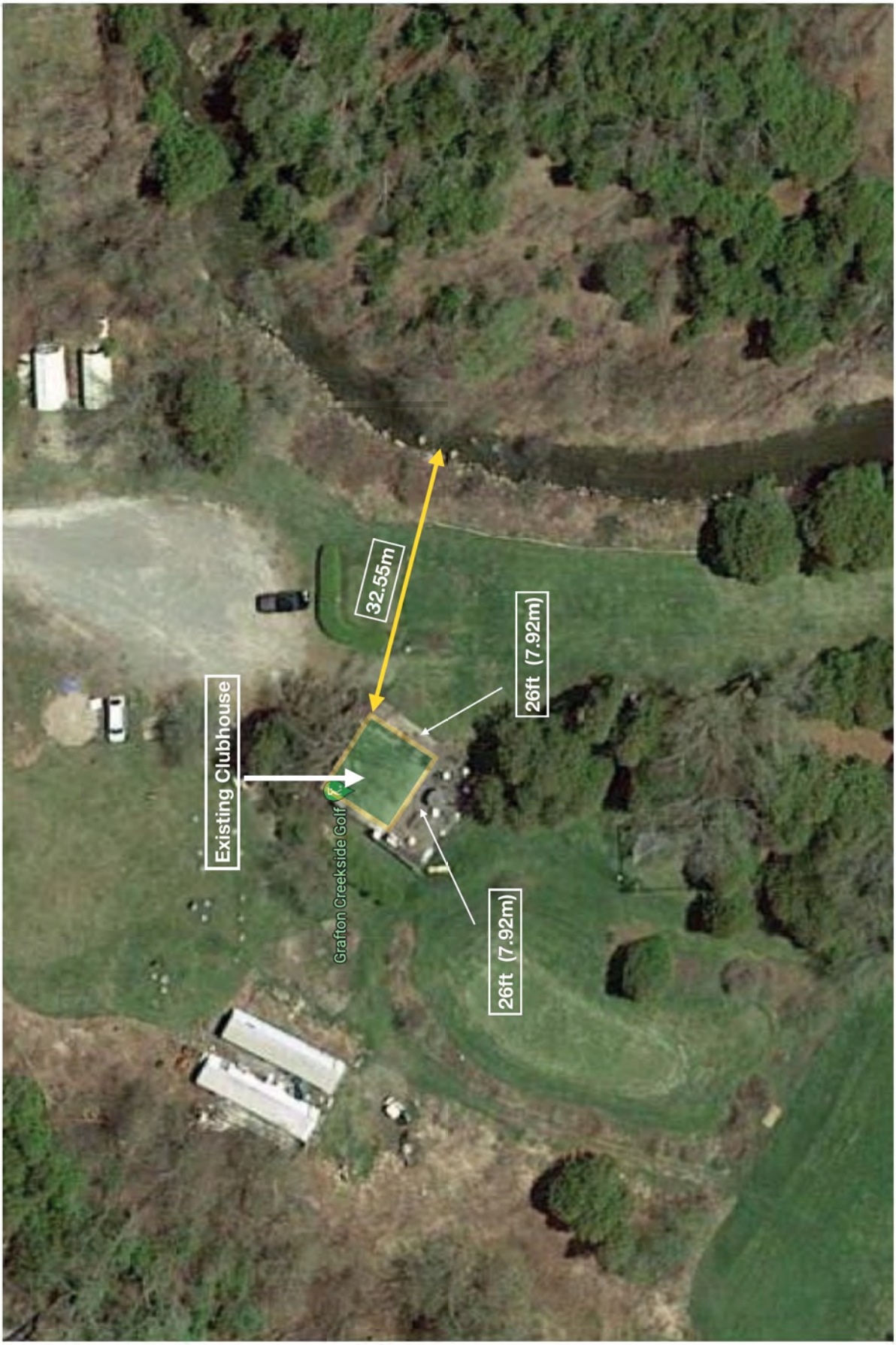
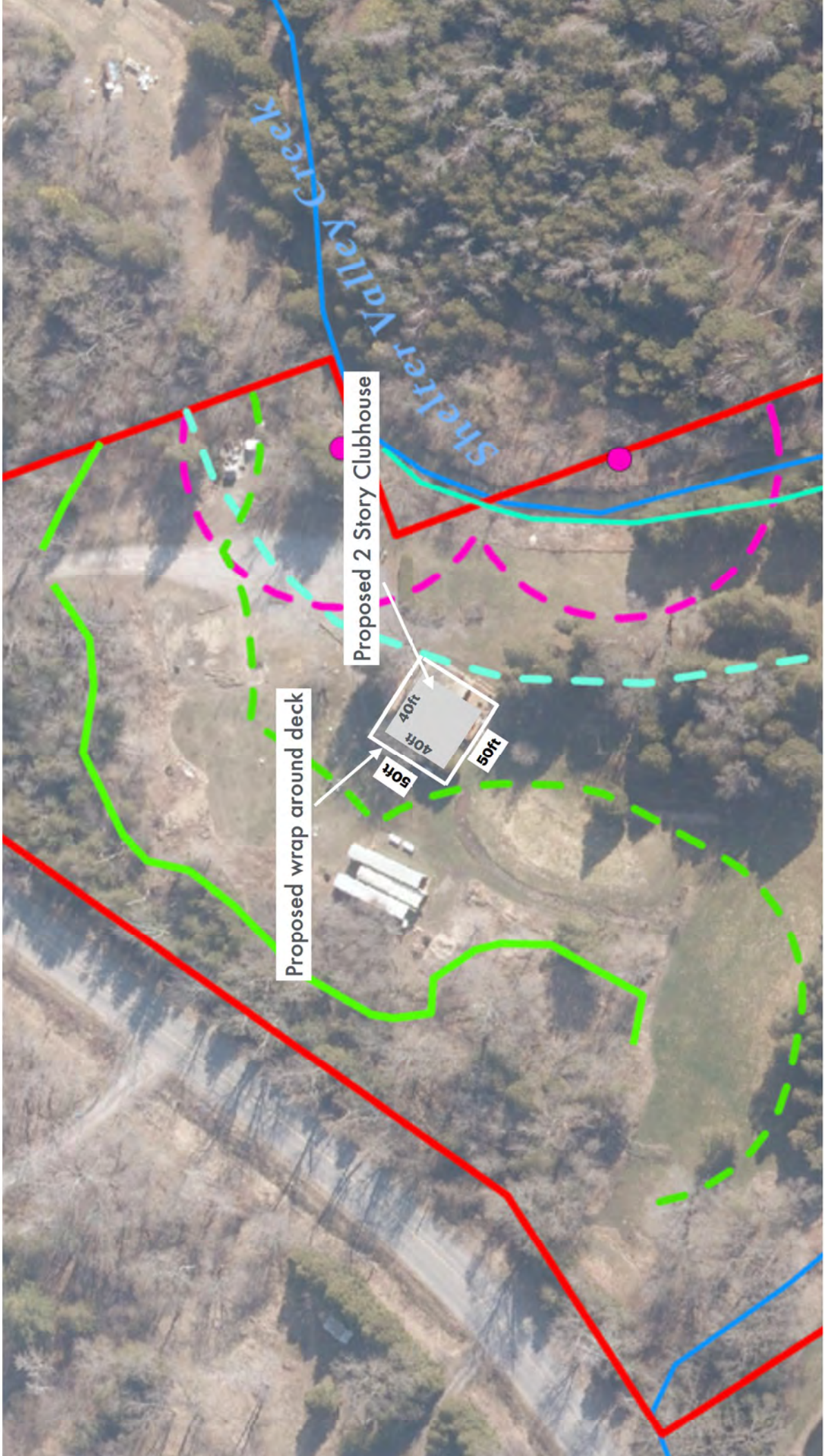
Appendix B
Conceptual Site Plans


Existing Clubhouse
32.55m
26ft (7.92m)
26ft (7.92m)
Grafton Creekside Golf


Shelter Valley Creek
Proposed 2 Story Clubhouse
Proposed wrap around deck
40ft
40ft
50ft
50ft

Appendix C
Species at Risk Screening

APPENDIX: Species at Risk Screening - County of Northumberland

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
Birds								
Bank Swallow	*Riparia riparia*	THR	THR	S4B	The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA
Cerulean Warbler	*Setophaga cerulea*	END	THR	S3B	The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey (4).	No	Known to occur in the general area	No further consideration required
Chimney Swift	*Chaetura pelagica*	THR	THR	S4B,S4N	The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1).	No	Known to occur in the general area	No further consideration required
Eastern Meadowlark	*Sturnella magna*	THR	THR	S4B	The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (1).	Yes: adjacent lands only	Known to occur in the general area	No further consideration required
King Rail	*Rallus elegans*	END	END	S2B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	No	Known to occur in the general area	No further consideration required
Least Bittern	Ixobrychus exilis	THR	THR	S4B	The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. Although Least Bitterns usually nest in larger marshes territorial individuals have been found in marshes as small as 0.4 ha. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (3).	No	Known to occur in the general area	No further consideration required
Northern Bobwhite	*Colinus virginianus*	END	END	S1	The Northern Bobwhite, a small quail, has a round body and stubby tail. They have a head pattern described as a bright white eyebrow and throat patch divided by a black mask. This species is found in open grasslands, meadows, abandoned farmlands and savannahs throughout the year, occasionally foraging in forested areas during harsh winter conditions (1). They require an early successional habitat although in Ontario, they are now usually associated with cultivated lands (2).	No	Known to occur in the general area	No further consideration required

APPENDIX: Species at Risk Screening - County of Northumberland

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
Piping plover	*Charadrius melodus*	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	No	Known to occur in the general area	No further consideration required
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	S4B	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well a strong bill. The species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (1).	No	Known to occur in the general area	No further consideration required
Short-eared owl	*Asio flammeus*	SC	THR	S2N,S4B	The Short-eared Owl has a large round head with small tufts of feathers, long wings, a short tail, and cryptic colouring of brown streaks. This species is found in scattered pockets across the province where suitable open habitat, including grasslands, tundra, peat bogs and marsh, can be found in sufficient quantities. Adults build nests on the ground in grassy areas and occasionally agricultural fields (1). The main factor influencing their choice in habitat is believed to be an abundance of their food source, primarily rodents and other small mammals (2).	No	Known to occur in the general area	No further consideration required
Fish								
American Eel	*Anguilla rostrata*	No Status	END	S1?	The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA
Lake Sturgeon	*Acipenser fulvescens*	No Status	END	S2	The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1).	No	Known to occur in the general area	No further consideration required
Herptiles								
Blanding's Turtle	*Emydoidea blandingii*	END	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	No	Known to occur in the general area	No further consideration required

APPENDIX: Species at Risk Screening - County of Northumberland

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	THR	S3	The Eastern Hog-nosed Snake can be a variety of colours and patterns so is most easily identified by its flattened, upturned nose. They prefer sandy well-drained habitats such as beaches and dry forests because they lay their eggs, hibernate and burrow n these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential habitat for endangered or threatened species on-site
Invertebrates								
Mottled Duskywing	*Erynnis martialis*	No Status	END	S2	The Mottled Duskywing is a medium-sized butterfly in the skipper family with a wingspan of 25-42 mm. It is dark grey with yellow-brown spots on its hind wings that give the species its mottled appearance and its name. The wings of freshly emerged adults have a purplish iridescence that fades with age. The mottled duskywing tends to live in dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars. In Ontario, the mottled duskywing will only deposit their eggs on two closely-related plants: New Jersey tea and prairie redroot (1).	No	Known to occur in the general area	No further consideration required
Mammals								
Eastern Red Bat	*Lasiurus borealis*	END	END	S4	The Eastern Red Bat has fur ranging from yellow-red to yellow-gray, and is one of Ontario's migratory bats. This species flies hundreds to thousands of kilometers every year to overwinter in the southern United States. The summer habitat of Eastern Red Bats is coniferous and deciduous forests of any age class, although they prefer to roost in mature trees higher than the surrounding canopy. Threats to this species include Wind energy developments, declines in their insect prey and habitat loss (9).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential habitat for endangered or threatened species on-site
Eastern Small-footed Myotis	*Myotis leibii*	No Status	END	S2S3	The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footec Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA
Hoary Bat	*Lasiurus cinereus*	END	END	S4	The Hoary Bat Is the largest bat in Canada. It is identified by light fur around its face and neck and white-tipped hairs over most of its body. It is very widely distributed across Canada and Ontario. It migrates to southern North America to overwinter, and summer habitat in Ontario is deciduous forest, where it uses tree cavities as maternity habitat. This species is common in bat mortality events on wind energy developments, and is also threatend by declines in inset prey and habitat loss (10).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential habitat for endangered or threatened species on-site
Little Brown Myotis	*Myotis lucifugus*	END	END	S4	The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA
Northern Myotis	*Myotis septentrionalis*	END	END	S3	The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA

APPENDIX: Species at Risk Screening - County of Northumberland

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
		SARA	SARO	S-RANK				
Silver-haired Bat	*Lasionycteris vagans*	END	END	S4	The Silver-haired bat is a dark colored bat, with black skin membranes and black to dark brown fur The fur often has grey or silver-frosted tips, giving it the silvery appearance for which it is named. A migratory species, Silver-haired Bats spend summer in Canada, with some populations even overwintering in British Columbia in Ontario. Roosting by Silver-haired Bats occurs primarily under bark and in the cavities of trees, making them reliant on habitats where large, decaying trees are available.Silver-haired Bats may occasionally roost in or on buildings, especially during the fall migration when natural roosting sites may be scarce (11).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential habitat for endangered or threatened species on-site
Tri-colored Bat	*Perimyotis subflavus*	END	END	S3?	The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6).	Yes: on-site and adjacent lands	Known to occur in the general area	Consideration required under the ESA
Trees, plants, fungi and lichens								
Black Ash	*Fraxinus nigra*	No status	END	S4	The Black Ash is a smaller-sized tree with a narrow crown, light grey and scaly bark, and green, oval leaflets on a central stalk. It grows everywhere in Ontario except for the far north, preferring moist climates and soils such as swampy woodlands or bogs (1).	Yes: on-site and adjacent lands	Not observed during targeted surveys; unlikely to occur on Site	No further consideration required
Butternut	*Juglans cinerea*	END	END	S2?	The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1).	Yes: on-site and adjacent lands	Incidental observation on-site	Confirmed habitat for endangered or threatened species on-site

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Appendix D
Photographic Log

Photo 1 Shelter Valley Creek looking upstream from Transect 1, August 14, 2024.

Photo 2 Shelter Valley Creek looking downstream from Transect 2, August 14, 2024.

Photo 3 ***Drainage Feature east of the Site, looking downstream from Shelter Valley Road, August 14, 2024.***

Photo 4 ***Looking downstream at culvert between roadside ditch and drainage feature, northeast of the Site, August 14, 2024.***

Photo 5 Looking east along ditch on north side of Shelter Valley Road, August 14, 2024.

Photo 6 Culvert located on shelter valley road southeast of Site, August 14, 2024.

Photo 7 Community 1 CVC: Commercial, August 14, 2024.

Photo 8 Community 2: CGL_1: Golf Course, August 14, 2024.

Photo 9 Community 3 CUW1: Mineral Cultural Woodland, August 14, 2024.

Photo 10 Community 4 SWM1-1: White Cedar – Hardwood Mineral Mixed Swamp, August 14, 2024.

Photo 11 Community 5 CU: Cultural Shoreline, August 14, 2024.

Photo 12 Community 6 FOM7-2 Natural tree patches between gold greens, August 14, 2024.

Appendix E
Vegetation Species List

#	Common Name (Latin Name)	Rarity/Status[2]			CoC	CoW	Vegetation Community					
		Federal	Provincial				1	2	3	4	5	6
		SARA	SARO	S-Rank								
1	Alternate-leaved Dogwood (Cornus alternifolia)			S5	6	3			X	X		X
2	American Hog-peanut (Amphicarpaea bracteata)			S5	4	0				X		
3	Annual Fleabane (Erigeron annuus)			S5	0	3						X
4	Basswood (Tilia americana)			S5	4	3					X	
5	Bittersweet Nightshade (Solanum dulcamara)			SNA	0	0				X		
6	Black Cherry (Prunus serotina)			S5	3	3				X		
7	Broad-leaved Helleborine (Epipactis helleborine)			SNA	0	3					X	
8	Bulblet Bladder Fern (Cystopteris bulbifera)			S5	5	-3				X		X
9	Canada Enchanter's Nightshade (Circaea canadensis ssp.			S5	2	3			X	X		X
10	Canada Goldenrod (Solidago canadensis)			S5	1	3			X			
11	Canada Wood Nettle (Laportea canadensis)			S5	6	-3						X
12	Coltsfoot (Tussilago farfara)			SNA	0	3					X	
13	Common Dandelion (Taraxacum officinale)			SNA		3	X	X			X	
14	Common Motherwort (Leonurus cardiaca)			SNA	0	5						X
15	Common Plantain (Plantago major)			SNA	0	3	X	X				
16	Common Ragweed (Ambrosia artemisiifolia)			S5	0	3			X			
17	Crack Willow (Salix euxina)			SNA	0	0				X		
18	Dame's Rocket (Hesperis matronalis)			SNA	0	3				X		X
19	Devil's Beggarticks (Bidens frondosa)			S5	3	-3				X		
20	Early Meadow-rue (Thalictrum dioicum)			S5	6	3				X		
21	Eastern Prickly Gooseberry (Ribes cynosbati)			S5	4	3				X		
22	Eastern White Cedar (Thuja occidentalis)			S5	4	-3	X	X	X	X	X	X
23	European Buckthorn (Rhamnus cathartica)			SNA	0	0			X	X	X	
24	European Stinging Nettle (Urtica dioica ssp. dioica)			SNA	0	0						X
25	European Swallowwort (Vincetoxicum rossicum)			SNA	0	5			X	X		X
26	Field Horsetail (Equisetum arvense)			S5	0	0				X	X	
27	Greater Celandine (Chelidonium majus)			SNA	0	5						X
28	Ground-ivy (Glechoma hederacea)			SNA	0	3			X			

#	Common Name (Latin Name)	Rarity/Status[2]			CoC	CoW	Vegetation Community					
		Federal	Provincial				1	2	3	4	5	6
		SARA	SARO	S-Rank								
29	Herb-Robert (Geranium robertianum)			S5	2	3				X		X
30	Jack-in-the-pulpit (Arisaema triphyllum)			S5	5	-3			X	X		X
31	Kentucky Bluegrass (Poa pratensis)			S5	0	3	X	X				
32	Large False Solomon's Seal (Maianthemum racemosum)			S5	4	3				X		
33	Manitoba Maple (Acer negundo)			S5	0	0	X	X	X	X		X
34	Marsh Fern (Thelypteris palustris)			S5	5	-3				X		
35	Ostrich Fern (Matteuccia struthiopteris)			S5	5	0			X	X		X
36	Paper Birch (Betula papyrifera)			S5	2	3	X	X				
37	Poison Ivy (Toxicodendron radicans)			S5	2	0				X		
38	Red Ash (Fraxinus pennsylvanica)			S4	3	-3			X	X	X	X
39	Red Elderberry (Sambucus racemosa)			S5	5	3						X
40	Red Raspberry (Rubus idaeus)			S5	2	3					X	X
41	Spotted Jewelweed (Impatiens capensis)			S5	4	-3				X		
42	Staghorn Sumac (Rhus typhina)			S5	1	3						X
43	Tall Meadow-rue (Thalictrum pubescens)			S5	5	-3					X	
44	Thicket Creeper (Parthenocissus vitacea)			S5	4	3	X	X	X	X	X	X
45	Trembling Aspen (Populus tremuloides)			S5	2	0				X		
46	Upright Yellow Wood-sorrel (Oxalis stricta)			S5	0	3						X
47	Virginia Clematis (Clematis virginiana)			S5	3	0				X		
48	White Clover (Trifolium repens)			SNA	0	3	X	X				
49	White Elm (Ulmus americana)			S5	3	-3	X					
50	Wild Carrot (Daucus carota)			SNA	0	5			X			
51	Wild Cucumber (Echinocystis lobata)			S5	3	-3			X			
52	Wild Sarsaparilla (Aralia nudicaulis)			S5	4	3						

Appendix F
Fish Species List

Table 1 - Fish Species List and Life History Information

Family	Common name	Scientific name	S Rank	SARA	ESA	Tolerance	Thermal Regime	Spawning Months	Water Depth (m)				Cover		Substrate									-
									0-1	1-2	2-5	5+	Submergent Vegetation	Emergent Vegetation	Bedrock	Boulder	Cobble	Rubble	Gravel	Sand	Silt	Clay	Hard-pan Clay	
Petromy	American Brook Lamprey	*Lampetra append*	S3	0	0	Intolerant	Coldwater	April-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Anguilli	American Eel	*Anguilla rostrata*	S1	THR	END	Intermedia	Coolwater	February-March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Salmoni	Atlantic Salmon	*Salmo salar*	SX			Intolerant	Coldwater	October-November	X	-	-	-	-	-	-	-	-	high	high	-	-	-	-	-
Ictaluri	Black Bullhead	*Ameiurus melas*	S4	0	0	None	Warmwater	May-June	X	X	-	-	high	high	-	-	low	low	low	high	high	-	-	-
Cyprinid	Blacknose Dace	*Rhinichthys atrat*	S5	0	0	Intermedia	Coolwater	May-June	X	-	-	-	-	-	-	-	-	high	high	mediu	-	-	-	-
Cyprinid	Blacknose Shiner	*Notropis heterole*	S5	0	0	Intolerant	Coolwater	June-July	X	-	-	-	high	high	-	-	-	-	medium	high	-	-	-	-
Centrar	Bluegill	*Lepomis macroch*	S5	0	0	Intermedia	Warmwater	June-August	X	X	X	-	high	high	-	-	-	-	high	high	mediu	-	-	-
Cyprinid	Bluntnose Minnow	*Pimephales notat*	S5	0	0	Intermedia	Warmwater	June-August	X	X	X	-	mediu	medium	-	medium	medium	high	high	mediu	-	-	-	-
Gastero	Brook Stickleback	*Culaea inconstan*	S5	0	0	Intermedia	Coolwater	May-July	X	-	-	-	high	high	-	-	-	-	medium	high	high	-	-	-
Salmoni	Brook Trout	Salvelinus fontina	S5	0	0	Intolerant	Coldwater	September-Novemb	X	X	-	-	-	-	-	-	-	high	high	mediu	low	-	-	-
Ictaluri	Brown Bullhead	*Ameiurus nebulos*	S5	0	0	Intermedia	Warmwater	May-June	X	X	-	-	mediu	medium	-	-	-	-	-	high	high	high	-	-
Salmoni	Brown Trout	*Salmo trutta*	SNA	0	0	Intolerant	Coldwater	October-November	X	X	0	0	-	-	-	-	medium	high	high	low	-	-	-	-
Umbrid	Central Mudminnow	*Umbra limi*	S5	0	0	Tolerant	Coolwater	April-May	X	-	-	-	high	high	-	-	-	-	-	-	high	-	-	-
Salmoni	Chinook Salmon	*Oncorhynchus tsh*	SNA	0	0	Intolerant	Coldwater	September-October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Salmoni	Coho Salmon	*Oncorhynchus kis*	SNA	0	0	Intolerant	Coldwater	October-November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Cyprinid	Common Shiner	*Luxilus cornutus*	S5	0	0	Intermedia	Coolwater	May-June	X	-	-	-	low	low	-	-	-	medium	high	mediu	-	-	-	-
Cyprinid	Creek Chub	*Semotilus atroma*	S5	0	0	Intermedia	Coolwater	May-June	X	-	-	-	-	-	-	-	-	high	high	high	-	-	-	-
Cyprinid	Emerald Shiner	*Notropis atherino*	S5	0	0	Intermedia	Coolwater	June-August	-	-	-	-	low	low	-	medium	medium	high	high	high	-	-	-	-
Percidae	Fantail Darter	Etheostoma flabe	S4	0	0	Intolerant	Coolwater	May-June	X	-	-	-	-	-	-	-	high	high	high	high	-	-	-	-
Cyprinid	Fathead Minnow	*Pimephales prom*	S5	0	0	Tolerant	Warmwater	May-August	X	X	-	-	mediu	medium	-	-	-	-	medium	high	high	-	-	-
Cyprinid	Finescale Dace	*Phoxinus neogae*	S5	0	0	Intermedia	Coolwater	April-May	X	X	-	-	-	-	-	-	-	-	medium	high	high	-	-	-
Cyprinid	Golden Shiner	*Notemigonus crys*	S5	0	0	Intermedia	Coolwater	June-August	X	X	-	-	high	high	-	-	-	-	-	high	high	-	-	-
Percidae	Johnny Darter x Tesselated Darter	*Etheostoma nigru*	S5	0	0	Tolerant	Coolwater	May-June	X	-	-	-	-	-	Cyprinidae	-	medium	medium	high	high	mediu	mediu	-	-
Centrar	Largemouth Bass	*Micropterus salm*	S5	0	0	Tolerant	Warmwater	May-June	X	X	-	-	mediu	high	-	-	-	low	low	high	high	high	-	-
Percidae	Logperch	*Percina caprodes*	S5	0	0	Intolerant	Warmwater	May-June	X	X	-	-	-	-	-	-	medium	medium	high	high	high	-	-	-
Cyprinid	Longnose Dace	*Rhinichthys catar*	S5	0	0	Intermedia	Coolwater	May-July	X	X	-	-	-	-	-	-	-	-	medium	high	high	mediu	-	-
Cottidae	Mottled Sculpin	*Cottus bairdi*	S5	0	0	Intermedia	Coolwater	April-May	X	-	-	-	-	-	-	high	high	high	high	high	high	-	-	-
Petromy	Northern Brook Lamprey	Ichthyomyzon fos	S3	SC	SC	Intolerant	Coolwater	May-June		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Catosto	Northern Hog Sucker	*Hypentelium nigr*	S4	0	0	Intermedia	Warmwater	April-May	X	-	-	-	-	-	-	-	-	-	high	mediu	-	-	-	-
Cyprinid	Northern Redbelly Dace	*Phoxinus eos*	S5	0	0	Intermedia	Coolwater	May-July	X	X	-	-	high	-	-	-	-	-	medium	high	high	-	-	-
Centrar	Pumpkinseed	*Lepomis gibbosus*	S5	0	0	Intermedia	Warmwater	May-August	X	X	-	-	high	high	-	-	-	-	high	high	-	mediu	-	-
Salmoni	Rainbow Trout	*Oncorhynchus my*	SNA	0	0	Intolerant	Coldwater	March-May	X	X	X	X	-	-	-	-	-	low	high	-	-	-	-	-
Centrar	Rock Bass	*Ambloplites rupes*	S5	0	0	Intermedia	Coolwater	May-June	X	X	-	-	low	low	-	-	high	high	high	mediu	mediu	mediu	-	-
Petromy	Sea Lamprey	*Petromyzon mari*	SNA	0	0	Intermedia	Coolwater	May-June		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Cottidae	Slimy Sculpin	*Cottus cognatus*	S5	0	0	Intolerant	Coldwater	April-May	X	X	X	X	-	-	-	high	high	high	high	high	low	low	-	-
Centrar	Smallmouth Bass	*Micropterus dolo*	S5	0	0	Intermedia	Coolwater	May-June	X	X	-	-	low	low	medium	-	-	high	high	mediu	-	-	-	-
Cyprinid	Spottail Shiner	*Notropis hudsoni*	S5	0	0	Intermedia	Coolwater	May-June	X	X	X	-	mediu	medium	-	-	medium	medium	high	high	-	-	-	-
Gastero	Threespine Stickleback	*Gasterosteus acu*	S4	0	0	Intermedia	Coolwater	May-July	X	-	-	-	low	low	-	-	-	-	medium	high	high	-	-	-
Catosto	White Sucker	*Catostomus comr*	S5	0	0	Tolerant	Coolwater	April-June	X	X	-	-	low	low	-	-	-	medium	high	mediu	-	-	-	
Percidae	Yellow Perch	*Perca flavescens*	S5	0	0	Intermedia	Coolwater	April-May	X	X	X	X	mediu	medium	-	-	-	medium	high	high	mediu	mediu	-	

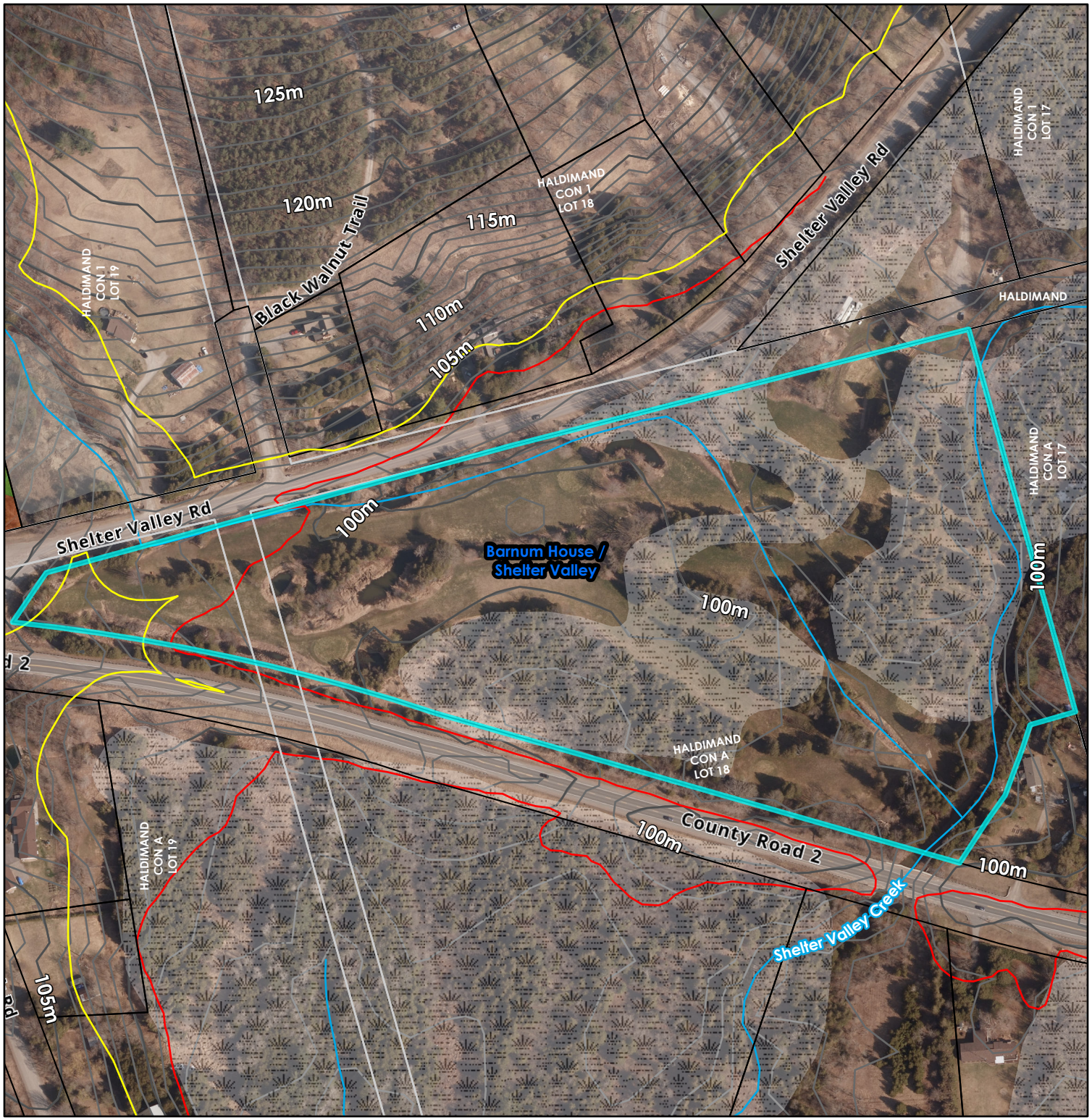
Note:

A dash (-) indicated that the species was not reported to utilize a particular depth stratum, cover or substrate.

Tolerance refers to the ability of a species to adapt to environmental perturbations or anthropogenic stresses.

1 Eakins, R. J. (2018). Ontario Freshwater Fishes Life History Database. Version 4.81. Online database. (http://www.ontariofishes.ca), accessed 26 July 2018

2 Lane, J. A., Minns, C. K., & Portt, C. B. (1996). Spawning habitat characteristics of Great Lakes fishes (p. 47). Fisheries and Oceans Canada.



RP-25-011

1225 Shelter Valley Road
AH Haldimand
Con A, Lot 18-19

Legend

- O.Reg. 41/24 Screening Area
- Parcels

Water

- Stream
- Virtual Flow Connector

Wetlands (MNRF)

- Unevaluated wetland
- Evaluated wetland (PSW)
- Evaluated wetland (non-PSW)

Field Verified Wetland

- Yes (Present)
- No (Not Present)
- Potential (Desktop ID)

Flood & Erosion Lines

- Floodlines

0 40 80 160
Metres

Map produced by Lower Trent Conservation

Note: Property lines shown on this map are approximate only and may be an inaccurate representation of the legal property limits. A legal survey is required to define the legal property limits.

LOWER TRENT CONSERVATION

User: technicaladmin March 28, 2025 1:17 PM

Lower Trent Region

Conservation Authority

Ontario Regulation 41/24

Policy Document

Approved by

Lower Trent Region Conservation Authority

Board of Directors

June 13, 2024

2 GENERAL POLICIES

Background:

Lower Trent Region Conservation Authority (LTC) will be guided by the following general administrative guidance with respect to the implementation of its regulatory responsibilities:

- Development, interference and/or alteration activities shall not be undertaken in a regulated area without written permission from LTC.
- Where a regulated area pertains to more than one water-related hazard (e.g., lands susceptible to flooding that are part of a wetland), policies will be applied jointly, and where applicable, the more restrictive policies will apply.
- Technical studies and/or assessments, site plans and/or other plans submitted as part of an application for permission to undertake development, interference and/or alteration in a regulated area must be completed by a qualified professional to the satisfaction of LTC in conformity with the most current provincial technical guidelines or guidelines accepted by LTC through a Board Resolution.

Note: Information regarding technical standards and guidelines is contained within the Appendices.

Similar to the MNR recommended 6-metre erosion access allowance (Section 3.4, Technical Guide for River and Stream Systems: Erosion Hazard Limit, MNR), LTC recommends that a 6-metre access allowance is applied to all hazard lands. Note that emergency access is required along the hazard as well as between the buildings and the lot line to allow for heavy equipment access to the hazard area.

The guidelines for development within the 15 metre adjacent lands to a hazard include an access setback. Three main principles support the inclusion of an access setback:

- providing for emergency access to hazard areas;
- providing for construction access for regular maintenance and access to the site in the event of a natural hazard or failure of a structure; and
- providing protection against unforeseen or predicted external conditions which could have an adverse effect on the natural conditions or processes acting on or within a hazard prone area.

Activities in regulated areas that are carried out by other provincial ministries or the federal government do not require a permit. Activities conducted on provincial crown land by third-party proponents in a regulated area may require a permit, unless acting as an agent of the Crown.

Works for which permission is required under the Regulation may also be subject to other legislation, policies and standards that are administered by other agencies and municipalities, such as the *Planning Act*, *Public Lands Act*, *Nutrient Management Act*, *Drainage Act*, *Environmental Assessment Act* (EA Act) or the federal *Fisheries Act,* etc. It is the responsibility of the applicant (or applicant's agent) to ensure that all necessary approvals are obtained prior to undertaking any works for which a permit under this Regulation has been obtained.

LTC Policies – General Policies:

Within areas defined by the regulation (i.e., regulated areas), including Lake Ontario shoreline hazard lands and an allowance, river or stream valleys and an allowance, wetlands or other areas where

development could interfere with the hydrologic function of a wetland (areas of interference), watercourses, or hazardous lands, the following general policies will apply:

1) Development, interference and/or alteration will not be permitted within a regulated area, except in accordance with the policies contained in this document.
2) Notwithstanding Policy 2 (1), the LTC Board of Directors, sitting as the Hearing Board, may grant permission for development, interference and/or alteration where the applicant provides evidence acceptable to the Board that documents that the development and/or activity will have no adverse effect on the control of flooding, erosion, dynamic beaches and unstable soils and bedrock with respect to Lake Ontario shoreline, river or stream valleys, hazardous land, wetlands, and areas of interference or will not result in an unacceptable interference with a watercourse or wetland.
3) In addition to specific conditions outlined through this document, development activities, interference and/or alteration within a regulated area may be permitted only where:
    a) risk to public safety is not increased;
    b) there is no increase in habitation in the hazard area with the exception of allowable flood fringes or wave uprush hazard areas;
    c) susceptibility to natural hazards is not increased nor new hazards created (e.g., there will be no impacts on adjacent properties with respect to natural hazards);
    d) safe ingress/egress is available for proposed development that increases habitation outside of hazard lands;
    e) sedimentation and erosion during construction and post construction is minimized using best management practices including site, landscape, infrastructure and/or facility design, construction controls, and appropriate remedial measures;
    f) access for emergency works and maintenance of flood or erosion control works is available;
    g) proposed development is constructed, repaired and/or maintained in accordance with accepted engineering principles and approved engineering standards or to the satisfaction of LTC, whichever is applicable based on the structural scale and scope, and purpose of the project;
    h) there are no adverse hydraulic or fluvial effects on rivers, creeks, streams, or watercourses;
    i) there are no adverse sedimentation or littoral effects on the Lake Ontario shoreline;
    j) there are no adverse effects on the hydrologic function of wetlands; and,
    k) the control of flooding, erosion, dynamic beaches and unstable soils and bedrock is not adversely affected during and post development.

Prohibited Uses:

4) Notwithstanding the General Policies referenced above, in accordance with Section 3.1 of the Provincial Policy Statement, development will not be permitted within hazardous lands as defined in the *Conservation Authorities Act*, where the use is:

- an institutional use associated with hospitals, nursing homes, pre-school, school nurseries, day care and schools, where there is a threat to the safe evacuation of the sick, the elderly, persons with disabilities or the young during an emergency as a result of flooding, failure of floodproofing and/or protection works, and/or erosion;
- an essential emergency service such as that provided by fire, police and ambulance stations and electrical substations, which would be impaired during an emergency as result of flooding, failure of flood-proofing measures and/or protection works, and/or erosion; or,
- uses associated with the disposal, manufacture, treatment or storage of hazardous substances.

5 HAZARDOUS LANDS

5.1 Conservation Authorities Act

The *Conservation Authorities Act* contains the following sections dealing with hazardous lands:

Activities prohibited (Prohibited activities re watercourses, wetlands, etc.)

"28 (1) No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority: …

2. Development activities in areas that are within the authority's area of jurisdiction and are,

i. hazardous lands, …

Permits

28.1 (1) An Authority may issue a permit to a person to engage in an activity specified in the permit that would otherwise be prohibited by s. 28, if, in the opinion of the authority,

a) the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock; and

b) the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; …

The permit shall be given in writing, with or without conditions.

5.2 Ontario Regulation 41/24

The following section indicates the extent of hazardous lands for the purpose of administering the Regulations. The Authority may grant a permit for development activity in or on Hazardous Lands subject to the tests or criteria in the *Conservation Authorities Act.* The Regulation contains the following definition for hazardous lands.

"**hazardous land**" means land that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock.

Therefore, the following policies have been developed to deal with flooding, erosion, unstable soil and unstable bedrock. The dynamic beach hazards were identified in the Great Lakes section along with the flooding and erosion hazards for Great Lakes and Large Inland Lakes.

5.3 Policy Standards

The following sections outline the policy standards for LTC's implementation of the *Conservation Authorities Act* and O. Reg. 41/24 with respect to hazardous lands including flood hazard lands, erosion hazard lands, unstable soil, and unstable bedrock. LTC, in their role through the planning process, should review planning applications to ensure that, in general, all development occurs outside the unstable soil and bedrock boundaries.

LTC may require technical studies be undertaken to demonstrate the suitability of development proposals. Technical studies should be carried out by a qualified professional, with recognized expertise in the appropriate discipline, and should be prepared using established procedures and recognized methodologies to the satisfaction of LTC.

5.3.1 Development within Flood Hazard Lands

5.3.1.1 Development within One-Zone Regulatory Floodplain of River or Stream Valleys (including inland lakes)

Background

The following policies are focused on development within the One-Zone Regulatory floodplain. These policies do not apply to development within the allowance adjacent to the One-Zone Regulatory floodplain and the reader should refer to Section 4.2.2 for policies that apply to these areas.

LTC Policies

1) Development within the Regulatory floodplain shall not be permitted.
2) Placement of fill, flood hazard protection and/or bank stabilization works to allow for future/proposed development or an increase in development envelope within the Regulatory floodplain shall not be permitted.
3) Development associated with new and/or the expansion of existing trailer parks / campgrounds in the Regulatory floodplain shall not be permitted.
4) *Major development* within the Regulatory floodplain shall not be permitted.
5) Redevelopment of derelict and abandoned buildings within the Regulatory floodplain shall not be permitted.
6) Stormwater management facilities within the 100-year floodplain shall not be permitted.
7) Basements within the Regulatory floodplain shall not be permitted.
8) Underground parking within the Regulatory floodplain shall not be permitted.
9) Cut and fill operations will not be permitted within the One-Zone Regulatory floodplain.
10) Notwithstanding Section 5.3.1.1 1), public infrastructure (e.g. roads, sewers, flood and erosion control works) and various utilities (e.g. pipelines) may be permitted within the Regulatory floodplain subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.
11) Notwithstanding Section 5.3.1.1 1), development associated with public parks (e.g. passive or low intensity outdoor recreation, education, or trail systems) may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

12) Notwithstanding Section 5.3.1.1 1), stream bank slope and valley stabilization to protect existing development and conservation or restoration projects may be permitted within the Regulatory floodplain subject to the activity being approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

13) Notwithstanding Section 5.3.1.1 1), *moderate development and* structural repairs may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected. The submitted plans must demonstrate that:

    a) there is no feasible alternative site outside of the Regulatory floodplain for the proposed development or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;

    b) the proposed works do not create new hazards or aggravate flooding on adjacent or other properties and there are no negative upstream and downstream hydraulic impacts;

    c) the development is protected from the flood hazard in accordance with established floodproofing and protection techniques. Habitable development must be dry floodproofed to 0.3 metres above the Regulatory flood elevation and non-habitable development must be floodproofed to the Regulatory flood elevation;

    d) the proposed development will not prevent access for emergency works, maintenance, and evacuation;

    e) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;

    f) the control of flooding, erosion and dynamic beach hazards, and unstable soil and bedrock have been adequately addressed; and,

    g) for any building where the depth of flooding exceeds 0.8 metres (2.5 ft) an engineering assessment and design carried out by a qualified professional with recognized expertise in the appropriate discipline must be prepared using established procedures and recognized methodologies to the satisfaction of LTC.

14) Notwithstanding Section 5.3.1.1 4), detached non-habitable accessory structures greater than 46 m2 (500 ft2) may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected. The submitted plans must demonstrate that:

    a) there is no feasible alternative site outside of the Regulatory floodplain for the proposed development or in the event that there is no feasible alternative site, that the proposed development is located in an area of least (and acceptable) risk;

b) the proposed works do not create new hazards or aggravate flooding on adjacent or other properties and there are no negative upstream and downstream hydraulic impacts;

c) the development is protected from the flood hazard in accordance with established floodproofing and protection techniques;

d) the proposed development will not prevent access for emergency works, maintenance, and evacuation;

e) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;

f) the control of flooding, erosion and dynamic beach hazards, and unstable soil and bedrock have been adequately addressed; and,

g) an engineering assessment and design carried out by a qualified professional with recognized expertise in the appropriate discipline must be prepared using established procedures and recognized methodologies to the satisfaction of LTC.

15) Notwithstanding Section 5.3.1.1 4), construction of a second storey addition to a habitable building greater than 46 m2 (500 ft2) may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected. Subsequent moderate development proposals as in Section 5.2.1.1 13) which increase the footprint of the structure would not be supported. The submitted plans must demonstrate that:

a) The original footprint of the building is not increased;

b) Habitation is not increased for the entire building;

c) the entire building is protected from the flood hazard in accordance with established floodproofing and protection techniques with dry floodproofing to 0.3 metres above the Regulatory flood elevation;

d) the potential for surficial erosion has been addressed through the submission of proper drainage, erosion and sediment control and site stabilization/restoration plans;

e) for any building where the depth of flooding exceeds 0.8 metres (2.5 ft) an engineering assessment and design carried out by a qualified professional with recognized expertise in the appropriate discipline must be prepared using established procedures and recognized methodologies to the satisfaction of LTC.

16) Notwithstanding Section 5.3.1.1 1), development associated with existing uses located within the Regulatory floodplain such as marine facilities, in-ground (at existing grade) pools, *minor development*, landscaping retaining walls, grading, etc., may be permitted if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

17) Notwithstanding Section 5.3.1.1 1), development may be permitted for the reconstruction or relocation of a building within the Regulatory floodplain, provided that it has not been damaged or destroyed by flooding and if it has been demonstrated to the satisfaction of LTC

that the control of flooding, erosion, dynamic beaches or unstable soils or bedrock land will not be affected. The submitted plans must demonstrate that:

a) the building or structure meets the criteria described in Policy 13) above;

b) the building or structure must not be located closer to the hazard than the original building; and,

c) the building or structure does not exceed the original floor space plus the allowable floor space for a *minor addition*. If the building or structure is enlarged, a future *minor addition* to the building or structure will not be considered.

18) Notwithstanding Section 5.3.1.1 1), development associated with the construction of a driveway or access way through the Regulatory floodplain in order to provide access to lands outside of the Regulatory floodplain may be permitted subject to the provision of safe access as identified in Section 1.8.3 and if it has been demonstrated to the satisfaction of LTC that there is no viable alternative outside of the regulated area and that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

19) Notwithstanding Section 5.3.1.1 1), removal or placement of *minor fill* and associated site grading may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soils or bedrock will not be affected.

20) Notwithstanding Section 5.3.1.1 1), the replacement of sewage disposal systems may be permitted within the Regulatory floodplain if it does not require greater than 1 metre depth of *fill* and has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soils or bedrock will not be affected. The replacement system should be located outside of the floodplain where possible, and only permitted within the floodplain subject to being located in the area of lowest risk.

21) Notwithstanding Section 5.3.1.1 1), parking areas may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soils or bedrock will not be affected, and that safe pedestrian and vehicular access is achieved.

22) Notwithstanding Section 5.3.1.1 1), boathouses may be permitted within the Regulatory floodplain if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soils or bedrock will not be affected, and an engineered design may be required for wet flood proofing.

[redacted]

[redacted]

[redacted]

9 GLOSSARY

100 Year Flood Event Standard: That flood, based on an analysis of precipitation, snow melt, or a combination thereof, having a return period of 100 years on average, or having a 1% chance of occurring or being exceeded in any given year.

Alteration to a Waterway: the act whereby the channel of a watercourse is altered in some manner. Examples of an alteration include, but are not limited to, the following: channelization, full or partial diversions, retaining walls, revetments, bridges, culverts, pipeline crossings erosion protection measures, construction of storm sewer outlets and agricultural tile drain outlets.

Apparent (confined) river and stream valley: Ones in which the physical presence of a valley corridor containing a river or stream channel, which may or may not contain flowing water, is visibly discernible (i.e., valley walls are clearly definable) from the surrounding landscape by either field investigations, aerial photography and/or map interpretation. The location of the river or stream channel may be located at the base of the valley slope, in close proximity to the toe of the valley slope (i.e., within 15 metres), or removed from the toe of the valley slope (i.e., greater than 15 metres)."

Area of interference: Those lands where development could interfere with the hydrologic function of a wetland.

Armour: Artificial surfacing of bed, banks, shores, or embankments to resist scour or erosion.

Authority: The Lower Trent Region Conservation Authority, a corporate body established under the *Conservation Authorities Act* (RSO 1990).

Basement: One or more storeys of a building located below the first storey (Building Code).

Breakwall/Breakwater: An object (especially a groyne or pier) resisting force of waves.

Boathouse: Structure meant for storage of water craft and associated boating equipment located on or within 6 metres of a navigable waterway. The boathouse must be anchored and is to be constructed as a single storey with no habitable space. The boathouse is considered a detached accessory structure and it must be wet floodproofed with openings on two sides to allow the flow of water through and no electrical services to be located less than 0.3 metres above the flood elevation.

Channel: The area of a watercourse carrying normal flows within the banks.

Crawl Space: A Crawl space must be:

(a) less than 1500 mm high between the lowest part of the floor assembly and the ground or other surface below, and

(b) not used for any occupancy.

Development activity: a) the construction, reconstruction, erection or placing of a building or structure of any kind, b) 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, c) site grading, or d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

Diversion: The process whereby streamflow is directed from the original channel of the watercourse and returned to the original channel at another point on the watercourse. Diversions may be full or partial re-direction of the streamflow. A diversion may also be the redirecting of flow from the channel of one watercourse to the channel of another watercourse.

Dwelling unit: One or more habitable rooms, occupied or capable of being occupied as an independent and separate housekeeping establishment, in which separate kitchen and sanitary facilities are provided for the exclusive use of the occupants.

Dyke (dike): An embankment or wall, usually along a watercourse or floodplain, to prevent overflow on to adjacent land.

Dynamic Beach: That portion of the shoreline where accumulated unconsolidated sediment continuously moves as a result of naturally occurring processes associated with wind and water and changes in the rate of sediment supply.

Dynamic Beach Hazard: Areas of inherently unstable accumulations of shoreline sediments along the Great Lakes – St. Lawrence River System and large inland lakes, as identified by provincial standards, as amended from time to time. The dynamic beach hazard limit consists of the flooding hazard limit plus a dynamic beach allowance.

Erosion: Continual loss of earth material (i.e., soil or sediment) over time as a result of the influence of water or wind.

Erosion Hazard: The loss of land, due to human or natural processes, that poses a threat to life and property. The erosion hazard limit is determined using considerations that include the 100-year erosion rate (the average annual rate of recession extended over a one-hundred-year time span) and an allowance for slope stability and an erosion/erosion access allowance.

Fill: Earth, sand, gravel, topsoil, building materials, rubble, rubbish, garbage, or any other material whether similar to or different from any of the aforementioned materials, whether originating on the site or elsewhere, used or capable of being used to raise, lower or in any way affect or alter the contours of the ground.

Flooding Hazard: The inundation, under the conditions specified below, of areas adjacent to a shoreline or a river or stream system and not ordinarily covered by water:

a) along the shorelines of the Great Lakes - St. Lawrence River System and large inland lakes, the flooding hazard limit is based on the one-hundred-year flood level plus an allowance for wave uprush and other water related hazards;
b) along river, stream and small inland lake systems, the flooding hazard limit is the greater of:
    a. the flood resulting from the rainfall actually experienced during a major storm such as the Hurricane Hazel storm (1954) or the Timmins storm (1961), transposed over a specific watershed and combined with the local conditions, where evidence suggests that the storm event could have potentially occurred over watersheds in the general area;
    b. the one-hundred-year flood; and

c. a flood which is greater than 1. or 2. which was actually experienced in a particular watershed or portion thereof as a result of ice jams and which has been approved as the standard for that specific area by the Minister of Natural Resources and Forestry;

except where the use of the one-hundred-year flood or the actually experienced event has been approved by the Minister of Natural Resources and Forestry as the standard for a specific watershed (where the past history of flooding supports the lowering of the standard).

Flood Line: An engineered line delineating the potential extent of flooding.

Floodplain: The area, usually low lands, adjoining a watercourse which has been or may be covered by water.

Floodproofing: A combination of structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures, or properties subject to flooding so as to reduce or eliminate flood damages.

Floodway: The channel of a watercourse and the inner portion of the floodplain where flood depths and velocities are generally higher than those experienced in the flood fringe. The floodway represents that area required for the safe passage of flood flow and/or that area where flood depths and/or velocities are considered to be such that they pose a potential threat to life and/or property damage.

Groyne: A structure extending from the shore to prevent erosion and arrest sand movement along a shoreline.

Habitable: Suitable to live in or on; that can be inhabited. Inhabit means to dwell in, occupy.

Habitation: is measured by the number of bedrooms within a dwelling unit**.**

Hazardous Land: Property or lands that could be unsafe for development due to naturally occurring processes associated with flooding, erosion dynamic beaches or unstable soil or bedrock.

Hydric Soil: Soil that, in its undrained condition, is saturated, flooded, or ponded long enough during the growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation.

Hydrologic Function: The functions of the hydrological cycle that include the occurrence, circulation, distribution, and chemical and physical properties of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere, and water's interaction with the environment including its relation to living things.

Inert Fill: Earth or rock fill, or material of a similar nature that contains no putrescible materials or soluble or decomposable chemical substances.

Ingress/egress: The ability to access a property or residence by land.

Interference in any way (CO Interpretation)**:** Any anthropogenic act or instance which hinders, disrupts, degrades, or impedes in any way the natural features or hydrologic and ecologic functions of a wetland or watercourse.

Jetty: A structure that projects from the land out into water.

Large Inland Lakes: Waterbody that has a surface area equal to or greater than 100 square kilometers where there is no measurable or predictable response to a single runoff event.

Major Development: New structures, additions, or restorations greater than 46 square metres (500 square feet).

Major Stabilization Work: stabilization works that have been approved through a satisfactory Environmental Assessment process and/or if it has been demonstrated to the satisfaction of LTC through a detailed engineering design that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

Minor Addition: An addition to an existing structure that does not exceed 46 square metres (500 square feet) and shall not result in an increase in the number of dwelling units. Attached covered structures including decks and garages will be considered habitable space. All new floor space shall be considered when determining the additional floor space including all storeys.

Minor Alteration: Alteration of a watercourse not exceeding 20 square metres (215 square feet).

Minor Development: A small addition to an existing building or accessory building that does not exceed 15 square metres (160 square feet) and does not increase number of dwelling units in a hazard land. Uncovered decks less than 23 square metres (250 square feet) are also considered minor development.

Minor Fill: A volumetric amount of fill not exceeding 20 cubic metres (26 cubic yards).

Moderate Development: *Minor additions*, detached accessory buildings and above ground pools that do not exceed 46 square metres (500 square feet). Uncovered decks larger than 23 square metres (250 square feet) are also considered moderate development. All moderate development (excluding uncovered decks) will be considered cumulative and will not exceed the 46 square metres (500 square feet). If cumulative moderate development exceeds 46 square metres (500 square feet) *major development* definitions apply.

Moderate Stabilization Work: stabilization works for banks/bluffs two metres or less in height and placement of appropriately sized stone a volumetric amount equivalent of up to one cubic metre per one linear metre of shoreline or stream bank if it has been demonstrated to the satisfaction of LTC that the control of flooding, erosion, dynamic beaches or unstable soil or bedrock will not be affected.

Non-Habitable: Detached structure not intended for dwelling in (i.e. garage, uncovered deck, picnic shelter, sun shelter, gazebo, pergola, boathouse)

Not Apparent (unconfined) river and stream valleys: Valleys in which a river or stream is present but there is no discernible valley slope or bank that can be detected from the surrounding landscape. For the most part, unconfined systems are found in fairly flat or gently rolling landscapes and may be located within the headwater areas of drainage basins. The river or stream channels contain either perennial (i.e., year round) or ephemeral (i.e., seasonal or intermittent) flow and range in channel configuration from seepage and natural channels to detectable channels.

Offsetting: Measures that are undertaken to counterbalance unavoidable impacts to the ecosystem. Offsetting should be identified through an Environmental Impact Study and considered only when all other options have been deemed not feasible.

One Zone Concept: An approach whereby the entire floodplain, as defined by the regulatory flood, is treated a one unit, and all development is prohibited or restricted.

Regulated Lands: The area within which development, interference and alteration activities are regulated by the Conservation Authority.

Regulatory floodplain: See definition of flooding hazard

Retaining Wall: A vertical structure designed to resist the lateral pressure of soil and water behind it.

Revetment: A vertical or inclined facing of rip-rap or other material protecting a soil surface from erosion.

Rip-rap: A layer of stone to prevent the erosion of soil.

Routine permit applications: are activities that are documented through another approval process (DART Protocol) or are determined to have limited impacts on the control of flooding, erosion, dynamic beaches, or unstable soil or bedrock (i.e. non-habitable buildings and structures that are less than 10 m2 in size).

Rubble: Waste fragments of stone, brick etc. from old houses; pieces of undressed stone used especially as backfill for walls; loose angular stones; water worn stones.

Scour: Local lowering of a streambed by the erosive action of flowing water.

Sedimentation: The deposition of detached soil particles.

Sewage Disposal System: A system which contains the entire sewage envelope, including both primary and secondary beds, mantle, septic tanks, and reserve areas, as per the requirements of the Ontario *Building Code Act* or the Ministry of the Environment and Climate Change.

Significant Wetland: An area identified as provincially significant by the Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time.

Static water level: The 100 year peak or flood level with a one chance in one hundred of occurring in any given year, without the influences of wave uprush, seche, ship-generated waves, ice-piling, or other water-related hazards

Storey: The portion of a building;

a) that is situated between the top of any floor and the top of the floor next above it, or

a) that is situated between the top of the floor and the ceiling above the floor, if there is no floor above it.

Surficial erosion: The physical removal, detachment, and movement of soil at the ground surface due to water or wind.

Structure: Any material, object or work erected either as a unit or constructed or assembled of connected or dependant parts or elements, whether located under, on, and/or above the surface of the ground.

Top-of-bank: The point at which the slope of a valley or shoreline meets the horizontal plain of the adjacent table-land.

Two Zone Floodway-Flood Fringe Concept: An approach whereby certain areas of the floodplain are considered to be less hazardous than others such that development potentially could occur. The flood fringe defines that portion of the floodplain where development may be permitted, subject to appropriate floodproofing. The floodway defines that portion of the floodplain wherein development is limited. This concept is only implemented after a comprehensive study to evaluate implications has been completed.

Watercourse: means a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs.

Watershed: An area that is drained by a river and its tributaries.

Wetland: Lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens. Periodically soaked or wet lands being used for agricultural purposes which no longer exhibit wetland characteristics are not considered to be wetlands for the purposes of this definition.

Note: Additional definitions may be found in the MNRF Technical Guidelines, Natural Heritage Guidelines and the Provincial Policy Statement under the Planning Act.

LOWER TRENT CONSERVATION

714 Murray Street, R.R. 1, Trenton, Ontario K8V 0N1
Tel: 613-394-4829 Fax: 613-394-5226 Website: www.ltc.on.ca Email: information@ltc.on.ca
Registered Charitable Organization No. 107646598RR0001

February 25, 2025 LTC File: **RP-25-011**

Property Owner: James Brouwer
Email [redacted]

Re: 1225 Shelter Valley Road, Township of Alnwick-Haldimand, Northumberland County
Concession A, Lot 18-19, Geographic Township of Haldimand

Application for permission to undertake development pursuant to Part VI of the *Conservation Authorities Act* and Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits

LTC Staff Cannot Grant Approval

Dear Applicants,

Lower Trent Region Conservation Authority (LTRCA) received the above noted application to undergo the required site preparation and fill placement to support the demolition of the existing approximately 1160 sq ft structure and the reconstruction of an approximately 2500 sq ft clubhouse and an approximately 800 sq ft attached deck on the subject lands within an area that is regulated by LTRCA under Ontario Regulation 41/24 and Part VI of the *Conservation Authorities Act*. Staff have reviewed the applications and the property information available on record including, but not limited to provincial mapping, aerial and satellite imagery and supplementary documents provided as part of the permit submission (i.e., engineering report completed by Jewell Engineering, dated February 11, 2025).

In 2024, LTRCA updated the Regulation Policy Document with respect to Ontario Regulation 41/24. The full Ontario Regulation 41/24 Policy Document, with all appendices, can be viewed on the LTRCA website at this link: https://ltc.on.ca/planning-permits/policies-guidelines/. Please note that *Section 2 General Policies* and *5.3.1 Development within Flood Hazards* is the applicable section of the Policy Document for the proposed development on this property.

According to our review of the development proposal with consideration for the policies contained within the applicable sections noted above, we can confirm that the proposed development is in direct conflict with the following policies:

2.0 General Policies

3) In addition to specific conditions outlined through this document, development activities, interference and/or alteration within a regulated area may be permitted only where:

a) risk to public safety is not increased;

b) there is no increase in habitation in the hazard area with the exception of allowable flood fringes or wave uprush hazard areas;

c) susceptibility to natural hazards is not increased nor new hazards created (e.g., there will be no impacts on adjacent properties with respect to natural hazards); and,

k) the control of flooding, erosion, dynamic beaches and unstable soils and bedrock is not adversely affected during and post development.

5.3.1 Development within Flood Hazard Lands

5.3.1.1 Development within One-Zone Regulatory Floodplain of River or Stream Valleys (including inland lakes)

1) Development within the Regulatory floodplain shall not be permitted.

2) Placement of fill, flood hazard protection and/or bank stabilization works to allow for future/proposed development or an increase in development envelope within the Regulatory floodplain shall not be permitted.

4) Major development within the Regulatory floodplain shall not be permitted.

The policies contained in the document represent thresholds and guidelines that have been approved by the LTRCA Board of Directors to enable designated staff to approve permit applications. It is our opinion that the proposed development does not comply with the above noted policies and therefore, staff approval cannot be granted.

Based on the above noted information, there are two options available for you to proceed with your application:

- You may review the information above and withdraw your application for permission under Ontario Regulation 41/24;
- You may review the information above and revise your application to comply with LTC's Board Approved Policies; or,
- You may request a Hearing before the Board as you have a right to a hearing where staff are recommending refusal of the application.

If you intend to proceed with the second bulleted option above the next available date for a Hearing is **April 10, 2025**. Please confirm **in writing** by **March 4, 2025** which of the above-noted options you would prefer so that the necessary arrangements can be made. Please note that the LTC Hearing Guidelines have been attached with this letter for your information.

We look forward to hearing back from you on your chosen option. If you require further assistance, please do not hesitate to contact me at 613-394-3915 ext. 249.

Sincerely,

Scott Robertson

Scott Robertson B.A., Dip. EMT
Development Officer
Lower Trent Conservation

Encl: Appendix F – Hearing Guidelines

LOWER TRENT CONSERVATION

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Tel: 613-394-4829 Fax: 613-394-5226 Website: www.ltc.on.ca Email: information@ltc.on.ca
Registered Charitable Organization No. 107646598RR0001

March 13, 2025

LTC File: **RP-25-011**

Property Owner: James Brouwer
Email to [redacted]

NOTICE OF HEARING

IN THE MATTER OF

The Conservation Authorities Act, R.S.O. 1990, Chapter 27

AND IN THE MATTER OF an application by **BROUWER**

FOR THE PERMISSION OF THE CONSERVATION AUTHORITY

Pursuant to Regulations made under Section 28.1, Subsection 5 of the said Act

TAKE NOTICE THAT a Hearing before the Full Board of the Lower Trent Region Conservation Authority will be held under Section 28.1, Subsection 5 of the Conservation Authorities Act at the offices of the said Authority located at 714 Murray Street, RR #1 Trenton, Ontario K8V 0N1 at the hour of **1:00 p.m., on the 10th of April, 2025** with respect to the application by **BROUWER** to permit development activities within an area regulated by the Authority in order to ensure there are no adverse effects on ***the control of flooding as a result of development in the Shelter Valley Creek floodplain.*** Specifically, this hearing is to request permission to undergo the required site preparation and fill placement to support the demolition and reconstruction of the existing golf clubhouse in the Township of Alnwick-Haldimand, Geographic Township of Alnwick, Part of Lot 18-19, Concession A.

TAKE NOTICE THAT you are invited to make a delegation and submit supporting written material to the Hearing Board for the meeting of **April 10, 2025**. If you intend to appear, please contact Gage Comeau, Manager, Watershed Management, Planning and Regulations with notice and confirmation. Written material will be required by **March 31, 2025**, to enable the Hearing Board members to review the material prior to the meeting.

TAKE NOTICE THAT this hearing is governed by the provisions of the *Statutory Powers Procedure Act*. Under the Act, a witness is automatically afforded a protection that is similar to the protection of the Ontario Evidence Act. This means that the evidence that a witness gives may not be used in subsequent civil proceedings or in prosecutions against the witness under a Provincial Statute. It does not relieve the witness of the obligation of this oath since matters of perjury are not affected by the automatic affording of the protection. The significance is that the legislation is Provincial and cannot affect Federal matters. If a witness requires the protection of the Canada Evidence Act that protection must be obtained in the usual manner. The Ontario Statute requires the tribunal to draw this matter to the attention of the witness, as this tribunal has no knowledge of the effect of any evidence that a witness may give.

AND FURTHER TAKE NOTICE that if you do not attend at this Hearing, the Hearing Board of the Conservation Authority may proceed in your absence, and you will not be entitled to any further notice in the proceedings.

DATED the 13th Day of March, 2025.

The Board of Directors of the Lower Trent Region Conservation Authority

Per: Rhonda Bateman

CAO/ Secretary-Treasurer (Signing Authority):

LOWER TRENT
CONSERVATION

APPENDIX F

HEARING GUIDELINES

May 31, 2024

APPENDIX F – HEARING GUIDELINES

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Appendices:

Appendix F-1: Notice of Hearing – Section 28.1 (5)

Appendix F-2: Hearing Procedures

Appendix F-3: Chair's Remarks When Dealing with Hearing with respect to Part VI of the Conservation Authorities Act and Ontario Regulation 41/24.

Appendix F-4: Notice of Decision – Hearing Pursuant to Section 28.1 (7))

Appendix F-5: Notice of Decision – Hearing Pursuant to Section 28.1 (7)) (with permit)

Appendix F-6: Notice of Hearing - Section 28.1.2 (7)

Appendix F-7: Chair's Remarks When Dealing with Section 28.1.2 (7)

Revision Notes:

May 12, 2016 – Original Hearing Guidelines – Approved by Board (Resolution G67/16)

Revision 1: April 13, 2017 – Clarifications and Consistency Updates (Resolution G44/17)

Revision 2: November 16, 2018 – Admin Updates

Revision 3: March 26, 2021 – Include Electronic Hearings (Resolution G51/21)

Revision 4: February 10, 2022 – MZO Hearings and OLT Reference (Resolution G20/22)

Revision 5: May 31, 2024 Update to reflect changes to the Act and addition of Ontario Regulation 41/24

F-1. PURPOSE OF HEARING GUIDELINES:

The Conservation Authorities Act requires that the applicant be provided with an opportunity for a hearing by the local Conservation Authority Board, or Executive Committee (sitting as a Hearing Board) as the case may be, for an application to be refused or approved with contentious conditions. Further, a permit may be refused if, in the opinion of the Authority, the proposal adversely affects the control of flooding, erosion, dynamic beaches, unstable soils or bedrock. The Hearing Board is empowered by law to make a decision, governed by the *Statutory Powers Procedures Act (SPPA*).

The Hearing Rules are adopted under the authority of Section 25.1 of the *Statutory Powers Procedures Act (SPPA)*. The SPPA applies to the exercise of a statutory power of decision where there is a requirement to hold or to afford the parties to the proceeding an opportunity for a hearing before making a decision. The SPPA sets out minimum procedural requirements governing such hearings and provides rule-making authority for to establish rules to govern such proceedings.

The Hearing Board shall hear and decide whether the application will be approved with or without conditions or refused. In the case of hearings related to applications submitted purposed to Section 28.1.2, the Hearing Board shall determine what conditions, if any, will be attached to the permission. See Section F-6 for further details.

These guidelines have been prepared as an update to previous hearing guidelines and are intended to provide a step-by-step process to conducting hearings required under Section 28.1 (5), (7)of the Conservation Authorities Act. It is expected that hearings meet the legal requirements of the *Statutory Powers Procedures Act* without being unduly legalistic or intimidating to the participants. Additional considerations have been included related to hearings under Section 28.1.2 (7) in Section F-6 of this document.

F-1.1 Hearing Guideline Updates

Note that these Guidelines have been revised based on changes in legislation to incorporate various considerations as noted below:

- Revised in May 2018 - Housekeeping amendments made reflecting changes to appeal process as a result of the *Building Better Communities and Conserving Watersheds Act, 2017* and subsequent *Order in Council*. Note: changes to appeal process are no longer valid.
- Revised in March 2021 - Amendments made to incorporate the use of electronic hearings.
- Revised in February 2022 - Amendments made to incorporate hearings under 28.0.1 (now changed to 28.1.2 as of April 1, 2024) and update references to the Ontario Land Tribunal (OLT).
- Revised in May 2024 – Amendments made to incorporate changes to the Conservation Authorities Act, removal of O.Reg. 163/06 and implementation of O.Reg. 41/24

F-1.2 Additional Hearing Considerations – 2021

With the passage of *Bill 229, Protect, Support and Recover from COVID-19 Act (Budget Measures), 2020*, a new section of the Conservation Authorities Act came into force. Section 28.0.1 (Permission for development, zoning order) applies to applications for permission submitted to an Authority where a zoning order has been made by the Minister of Municipal Affairs and Housing authorizing the proposed

development project. While the Act outlines that the Authority must issue these permissions, an Authority has the ability to attach conditions to the permission. In the case of these applications for permission, applicants must be given the opportunity for a hearing before the Authority, prior to conditions being attached. As noted above, Section 28.0.1 has been changed to 28.1.2 within the updated Conservation Authorities Act as of April 1, 2024.

As such, hearings under section 28.1.2 of the Act differ from those under section 28, in that the intent of the hearing is not to determine whether or not to issue a permission, but rather, to finalize the conditions of a permission. The purpose of the interim update to the Hearing Guidelines is to incorporate direction for hearings under section 28.1.2 of the Conservation Authorities Act in Section G-6 of this document.

Further, with the passage of Bill 245, Accelerating Access to Justice Act, 2021, on June 1st, 2021 the Local Planning Appeal Tribunal, Environmental Review Tribunal, Board of Negotiation, Conservation Review Board and Mining and Lands Tribunal were merged into a new single tribunal called the Ontario Land Tribunal (OLT). Amendments have been throughout the Hearing Guidelines to update references to the Mining and Lands Tribunal to now reference the Ontario Land Tribunal.

F-2. PRE-HEARING PROCEDURES

F-2.1 Role of the Hearing Board

In considering the application, the Hearing Board is acting as a decision-making tribunal. The tribunal is to act fairly. Under general principles of administrative law relating to the duty of fairness, the tribunal is obliged not only to avoid any bias but also to avoid the appearance or reasonable apprehension of bias. The following are three examples of steps to be taken to avoid apprehension of bias where it is likely to arise.

a) No member of the Authority taking part in the hearing should have prior involvement with the application that could lead to a reasonable apprehension of bias on the part of that member. Where a member has a personal interest, the test is whether a reasonable well-informed person would consider that the interest might have an influence on the exercise of the official's public duty. Where a member is a municipal councillor, the *Municipal Conflict of Interest Act* applies. In the case of preciously expressed opinion, the test is that of an open mind, i.e. is the member capable of persuasion in participating in the decision making.
b) If material relating to the merits of an application that is the subject of a Hearing is distributed to Board members before the Hearing, the material should be distributed to the applicant. The applicant may be afforded an opportunity to distribute similar pre-hearing material. These materials can be distributed to the applicable parties electronically.
c) The applicant will be given an opportunity to attend the Hearing before a decision is made; however, the applicant does not have to be present for a decision to be made.

F-2.2 Application

An applicant has the right to a hearing when:

- staff are recommending refusal of a permit application because it doesn't comply with the

approved policies;

- or
- the applicant objects to the conditions of approval.

The applicant is entitled to reasonable notice of the hearing pursuant to the *Statutory Powers Procedures Act.*

F-2.3 Notice of Hearing

The Notice of Hearing shall be sent to the applicant within sufficient time to allow the applicant to prepare for the hearing. To ensure that reasonable notice is given, it is recommended that prior to sending the Notice of Hearing, the applicant be consulted to determine an agreeable date and time based on the local Conservation Authority's regular meeting schedule.

The Notice of Hearing must contain the following:

a) Reference to the applicable legislation under which the hearing is to be held (i.e., the Conservation Authorities Act)
b) The date, time, place and the purpose of the hearing, or for electronic hearings: the time, purpose of the hearing, and details about the manner in which the hearing will be held. Note: for electronic hearings the Notice must also contain a statement that the applicant should notify the Authority if they believe holding the hearing electronically is likely to cause them significant prejudice. The Authority shall assume the applicant has no objection to the electronic hearing if no such notification is received.
c) Particulars to identify the applicant, property and the nature of the application which are the subject of the hearing. Note: If the applicant is not the landowner but the prospective owner, the applicant must have written authorization from the registered landowner.
d) The reasons for the proposed refusal or conditions of approval shall be specifically stated. This should contain sufficient detail to enable the applicant to understand the issues so they can be adequately prepared for the hearing. It is sufficient to reference in the Notice of Hearing that the recommendation for refusal or conditions of approval is based on the reasons outlined in previous correspondence or a hearing report that will follow.
e) A statement notifying the applicant that the hearing may proceed in the applicant's absence and that the applicant will not be entitled to any further notice of the proceedings. Except in extreme circumstances, it is recommended that the hearing not proceed in the absence of the applicant.
f) Reminder that the applicant is entitled to be represented at the hearing by a representative such as legal counsel, if desired. The Conservation Authority may be represented at the Hearing by counsel and/or staff.
g) A copy of the Authority's Hearing Guidelines.

It is recommended that the Notice of Hearing be directed to the applicant and/or landowner by registered mail or other method where confirmation of delivery can be verified.

Refer to **Appendix F-1** for an example **Notice of Hearing**.

F-2.4 Pre-submission of Reports

It is the practice of the Lower Trent Region Conservation Authority to submit reports to the Board

members in advance of the hearing (i.e., inclusion on an Authority Agenda) and the applicant will be provided with the same opportunity. The applicant will be given reasonable time to prepare a report once the reasons for the staff recommendations have been received. Subsequently, this may affect the timing and scheduling of the staff hearing reports. The applicant will be required to provide sufficient copies of this report for inclusion in the Agenda.

F-2.5 Hearing Information

Prior to the hearing, the applicant should be advised of the local Conservation Authority's hearing procedures. (a copy of this document should be provided with the staff report).

F-3. HEARING

F-3.1 Public Hearing

Pursuant to the *Statutory Powers Procedure Act*, hearings, including electronic hearings, are required to be held in public. For electronic hearings, public attendance should be synchronous with the hearing. The exception is in very rare cases where public interest in public hearings is outweighed by the fact that intimate financial, personal or other matters would be disclosed at hearings.

F-3.2 Hearing Participants

The Conservation Authorities Act does not provide for third party status at the Hearing. The Hearing however is open to the public. Any information provided by third parties should be incorporated within the presentation of information by, or on behalf of, the applicant or Authority staff as appropriate.

F-3.3 Attendance of Hearing Board Members

In accordance with case law relating to the conduct of hearings, those members of the Authority who will decide whether to grant or refuse the application must be present during the full course of the hearing. If it is necessary for a member to leave, the remaining members can continue with the Hearing and render a decision.

F-3.4 Adjournments

The Board may adjourn a hearing on its own motion or that of the applicant or Authority staff where it is satisfied that an adjournment is necessary for an adequate hearing to be held. Any adjournments form part of the hearing record.

F-3.5 Orders and Directions

The Authority is entitled to make orders or directions to maintain order and prevent the abuse of its hearing processes. A hearing procedures example has been included as **Appendix F-2.**

F-3.6 Information Presented at Hearings

a) The *Statutory Powers Procedure Act* requires that a witness be informed of their right to object

pursuant to the *Canada Evidence Act*. The *Canada Evidence Act* indicates that a witness shall not be excused from answering questions on the basis that the answer may be incriminating. Further, answers provided during the hearing are not admissible against the witness in any criminal trial or proceeding. This information should be provided to the applicant as part of the Notice of Hearing.

b) It is the decision of the hearing members as to whether information is presented under oath or affirmation. It is not a legal requirement. The applicant must be informed of the above, prior to or at the start of the hearing.
c) The Board may authorize receiving a copy rather than the original document. However, the Board can request certified copies of the document if required.
d) Privileged information, such as solicitor/client correspondence, cannot be heard.
e) Information that is not directly within the knowledge of the speaker (hearsay), if relevant to the issues of the hearing, can be heard.
f) The Board may take into account matters of common knowledge such as geographic or historic facts, times measures, weights, etc. or generally recognized scientific or technical facts, information or opinions within its specialized knowledge without hearing specific information to establish their truth.

F-3.7 Conduct of Hearing

F-3.7.1 Record of Attending Hearing Board Members

A record should be made of the members of the Hearing Board.

F-3.7.2 Opening Remarks

The Hearing Board Chair should convene the hearing with opening remarks which; identify the applicant, the nature of the application, and the property location; outline the hearing procedures; and advise on requirements of the *Canada Evidence Act*. Please reference **Appendix G-3** for the Opening Remarks Template. In an electronic hearing, all the parties and members of the Hearing Board must be able to clearly hear one another and any witnesses throughout the hearing.

F-3.7.3 Presentation of Authority Staff Information

Staff of the Authority presents the reasons supporting the recommendation for the refusal or conditions of approval of the application. Any reports, documents or plans that form part of the presentation should be properly indexed and received.

Staff of the Authority should not submit new technical information at the Hearing as the applicant will not have had time to review and provide a professional opinion to the Hearing Board.

Consideration should be given to the designation of one staff member or legal counsel who coordinates the presentation of information on behalf of Authority staff and who asks questions on behalf of Authority staff.

F-3.7.4 Presentation of Applicant Information

The applicant has the opportunity to present information at the conclusion of the Authority staff presentation. Any reports, documents or plans which form part of the submission should be properly indexed and received.

The applicant shall present information as it applies to the permit application in question. For instance, does the requested activity affect the control of flooding, erosion, dynamic beaches, unstable soils or bedrock? The hearing does not address the merits of the activity or appropriateness of such a use in terms of planning.

- The applicant may be represented by legal counsel or agent, if desired.
- The applicant may present information to the Board and/or have invited advisors to present information to the Board.
- The applicant's presentation may include technical witnesses, such as an engineer, ecologist, hydro-geologist etc.

The applicant should not submit new technical information at the hearing as the Staff of the Authority will not have had time to review and provide a professional opinion to the Hearing Board.

F-3.7.5 Questions

Members of the Hearing Board may direct questions to each speaker as the information is being heard. The applicant and/or agent can make any comments or questions on the staff report. Staff will be given an opportunity to respond to questions posed by either the Board or the applicant. Staff may also rebut comments or pose questions to the applicant at this time.

Pursuant to the *Statutory Powers Procedure Act*, the Board can limit questioning where it is satisfied that there has been full and fair disclosure of the facts presented. Please note that the courts have been particularly sensitive to the issue of limiting questions and there is a tendency to allow limiting of questions only where it has clearly gone beyond reasonable or proper bounds.

F-3.7.6 Deliberation

After all the information is presented, the Board may adjourn the hearing and retire in private to confer. The Board may reconvene on the same date or at some later date to advise the applicant of the Board's decision. The Board members should not discuss the hearing with others prior to the decision of the Board being finalized.

F-4. DECISION

The applicant must receive written notice of the decision. The applicant should be informed of the right to appeal the decision within 15 days to the Minister and/or 90 days upon receipt of the written decision to the Ontario Land Tribunal.

It is important that the hearing participants have a clear understanding of why the application was

refused or approved. The Board should itemize and record information of particular significance which led to their decision.

F-4.1 Notice of Decision

The decision notice should include the following information:

a) The identification of the applicant, property and the nature of the application that was the subject of the hearing.
b) The decision to refuse or approve the application. A copy of the Hearing Board resolution should be attached.

It is recommended that the written Notice of Decision be forwarded to the applicant by registered mail or other method where confirmation of delivery can be verified.

A sample Notice of Decision and cover letter has been included as **Appendix F-4**. Note that if the decision of the Board is to approve the application, the written notice of decision can be included as part of the Permit Cover Letter. An example of Permission Granted through Hearing has been included as **Appendix F-5**.

F-4.2 Adoption

A resolution advising of the Board's decision and particulars of the decision should be adopted.

F-5. RECORD

The Authority shall compile a record of the hearing. In the event of an appeal, a copy of the record should be forwarded to the Ontario Land Tribunal. The record must include the following:

a) The application for the permit.
b) The Notice of Hearing.
c) Any orders made by the Board (e.g. for adjournments).
d) All information received by the Board.
e) Attendance of Hearing Board members.
f) The transcript/minutes, if one exists, of the oral presentations made at the hearing.
g) The decision and reasons for decision of the Board.
h) The Notice of Decision sent to the applicant.

F-6. HEARINGS UNDER SECTION 28.0.1 CAA

Section 28.1.2 of the Conservation Authorities Act came into force with the Royal Assent of *Bill 229*, *Protect, Support and Recover from COVID-19 Act (Budget Measures), 2020*. This section applies to any application submitted to an authority under a regulation made under Section 28 of the Act for permission to carry out all or part of a development project associated with an approved Minister's Zoning Order (MZO). For such applications, an Authority must grant permission to the applicant to carry out the activity, provided an MZO has been made by the Minister of Municipal Affairs and Housing, and provided that the authority's regulated area in which the development activity is proposed to take place

is not located in the Greenbelt Area designated under section 2 of the Greenbelt Act. A permission which is granted under s.28.1.2 may be subject to conditions as prescribed by the issuing Authority.

Understanding that an Authority must grant permission for applications submitted pursuant to an approved MZO (pending the above-noted conditions are met), hearings for these applications differ from those under Section 28(12) of the Act, in that a hearing cannot be held to determine if a permission should be refused. The Authority may refuse to grant a permit only if i) a zoning order has not been made to authorize the development project, ii) the project is proposed to be carried out in the Greenbelt Area, and iii) if all other prescribed requirements have not been satisfied. Per s.28.1.2 (7) of the Act, the applicant for a permission will be given the opportunity to be heard by the Authority prior to any conditions being attached to the granted permission.

The following table is intended to provide a step-by-step process to conducting hearings required under Section 28.1.2 (7) of the Conservation Authorities Act. It is recognized that much of the guidance provided in the body of the Section 28 Hearing Guidelines will be applicable to the s. 28.1.2 (7) hearing process. Where processes differ, the table outlines the necessary considerations for the s. 28.1.2(7) processes. Where the processes are the same, the table refers to the appropriate sections of the Section 28(5) hearing guidelines.

Sections of the *Section 28 Conservation Authorities Act Hearing Guidelines*	**Specific Guidance and/or Processes for S. 28.1.2 (7) Hearings**
1.0 Purpose of Hearing Guidelines	The *Conservation Authorities Act* requires that the applicant be provided with an opportunity for a hearing by the local Conservation Authority Board, or Executive Committee (sitting as a Hearing Board) as the case may be, for an application to be refused or approved with contentious conditions. In the case of hearings related to applications submitted pursuant to s. 28.1.2 of the *Conservation Authorities Act*, the Authority must grant permission to the applicant, provided the requirements set out under this section are met. In this scenario, a hearing will only be held to determine conditions which will be attached to a permission. Further, a permit may be refused if in the opinion of the Authority the proposal adversely affects the control of flooding, unstable soils or bedrock, and additional erosion and dynamic beaches. In the case of applications submitted pursuant to s. 28.1.2 of the *Conservation Authorities Act*, the Authority may refuse to grant a permit only if i) a zoning order has not been made to authorize the development project, ii) the project is proposed to be carried out in the Greenbelt Area, and iii) if all other prescribed requirements have not been satisfied. The Hearing Board is empowered by law to make a decision, governed by the *Statutory Powers Procedures Act*.

	The Hearing Rules are adopted under the authority of Section 25.1 of the *Statutory Powers Procedures Act* (SPPA). The SPPA applies to the exercise of a statutory power of decision where there is a requirement to hold or to afford the parties to the proceeding an opportunity for a hearing before making a decision. The SPPA sets out minimum procedural requirements governing such hearings and provides rule-making authority for to establish rules to govern such proceedings. The Hearing Board shall hear and decide whether the application will be approved with or without conditions or refused. In the case of hearings related to applications submitted purposed to Section 28.1.2, the Hearing Board shall determine what conditions, if any, will be attached to the permission. See Section G-6 for further details. These guidelines have been prepared as an update to the October 1992 hearing guidelines and are intended to provide a step-by-step process to conducting hearings required under Section 28.1 (5), (7) of the *Conservation Authorities Act*. It is hoped that the guidelines will ensure that hearings meet the legal requirements of the *Statutory Powers Procedures Act* without being unduly legalistic or intimidating to the participants. Additional considerations have been included related to hearings under Section 28.1.2 (7) in Section G-6
2.0 Prehearing Procedures	Not applicable to S.28.1.2(7) hearings
2.1 Role of the Hearing Board	In considering the application, the Hearing Board is acting as a decision-making tribunal. The tribunal is to act fairly. Under general principles of administrative law relating to the duty of fairness, the tribunal is obliged not only to avoid any bias but also to avoid the appearance or reasonable apprehension of bias. The following are three examples of steps to be taken to avoid apprehension of bias where it is likely to arise. (a) No member of the Authority taking part in the hearing should have prior involvement with the application that could lead to a reasonable apprehension of bias on the part of that member. Where a member has a personal interest, the test is whether a reasonably well-informed person would consider that the interest might have an influence on the exercise of the official's public duty. Where a member is a municipal councillor, the *Municipal Conflict of Interest Act* applies. In the case of a previously expressed opinion, the test is that of an

	open mind, i.e. is the member capable of persuasion in participating in the decision making (b) If material relating to the merits of an application that is the subject of a hearing is distributed to Board members before the hearing, the material shall be distributed to the applicant at the same time. The applicant may be afforded an opportunity to distribute similar pre-hearing material. These materials can be distributed electronically. (c) The applicant will be given an opportunity to attend the hearing before a decision is made; however, the applicant does not have to be present for a decision to be made. (d) Where a hearing is required for applications submitted pursuant to s. 28.1.2 of the *Conservation Authorities Act* (e.g., to determine the conditions of the permission), final decisions on the conditions shall not be made until such a time as the applicant has been given the opportunity to attend a hearing.
2.2 Application	The right to a hearing arises where staff is recommending refusal of an application or is recommending conditions to the approval of an application. Additionally, in the case of applications submitted pursuant to s. 28.1.2 of the CA Act, the authority shall not attach conditions to a permission unless the applicant has been given an opportunity to be heard by the authority. The applicant is entitled to reasonable notice of the hearing pursuant to the *Statutory Powers Procedures Act*.
2.3 Notice of Hearing	*Refer to Section 2.3*
2.4 Presubmission of Reports	*Refer to Section 2.4*
3.0 Hearing	Not applicable to S.28.1.2(7) hearings
3.1 Public Hearing	*Refer to Section 3.1*
3.2 Hearing participants	*Refer to Section 3.2*
3.3 Attendance of Hearing Board Members	*Refer to Section 3.3*
3.4 Adjournments	*Refer to Section 3.4*
3.5 Orders and Directions	*Refer to Section 3.5*
3.6 Information Presented at Hearings	*Refer to Section 3.6*
3.7 Conduct of Hearing	N/A
3.7.1 Record of Attending Hearing Board Members	*Refer to Section 3.7.1*
3.7.2 Opening Remarks	*Refer to Section 3.7.2*
3.7.3 Presentation of Authority Staff Information	*Refer to Section 3.7.3*
3.7.4 Presentation of Applicant Information	*Refer to Section 3.7.4*
3.7.5 Questions	*Refer to Section 3.7.5*

3.7.6 Deliberation	*Refer to Section 3.7.6*
4.0 Decision	*Refer to Section 4.0*
4.1 Notice of Decision	The decision notice should include the following information: (a) The identification of the applicant, property and the nature of the application that was the subject of the hearing. (b) The decision to refuse or approve the application, and in the case of applications under s. 28.1.2 of the CA Act, the decision to approve the application with or without conditions. A copy of the Hearing Board resolution should be attached. It is recommended that the written Notice of Decision be forwarded to the applicant by registered mail. A sample Notice of Decision and cover letter has been included as **Appendix F-4**.
4.2 Adoption	*Refer to section 4.2*
5.0 Record	*Refer to Section 5.0*
Appendix G-6	A new Appendix F-6 has been prepared which provides an example "Notice of Hearing" for hearings under Section 28.1.2 (7) of the *Conservation Authorities Act*
Appendix G-7	A new Appendix F-7 has been prepared which provides an example "Notice of Decision" for hearings under Section 28.1.2 (7) of the *Conservation Authorities Act*

Appendix F-1

NOTICE OF HEARING

IN THE MATTER OF

The Conservation Authorities Act, R.S.O. 1990, Chapter 27

AND IN THE MATTER OF an application by **XXXXXX**

FOR THE PERMISSION OF THE CONSERVATION AUTHORITY

Pursuant to Regulations made under Section 28.1, Subsection 5 of the said Act

TAKE NOTICE THAT a Hearing before the Full Board of the Lower Trent Region Conservation Authority will be held under Section 28.1, Subsection 5 of the Conservation Authorities Act at the offices of the said Authority located at 714 Murray Street, RR #1 Trenton, Ontario K8V 0N1 at the hour of **, on the day of , 20**___, [for electronic hearings, include details about the manner in which the hearing will be held] with respect to the application by ***(NAM*E)** to permit development within an area regulated by the Authority in order to ensure no adverse effect on ***(the control of flooding, erosion, dynamic beaches or unstable soils or bedrock/alter or interfere with a watercourse or wetland*)** on Lot , Plan/Lot , Concession, ***(Stree*t) in the City of , Regional Municipality of , River Watershed.

TAKE NOTICE THAT you are invited to make a delegation and submit supporting written material to the Hearing Board for the meeting of ***(meeting numbe*r)**. If you intend to appear, [for electronic hearings: or if you believe holding the hearing is likely to cause significant prejudice], please contact ***(name*)**. Written material will be required by ***(date*)**, to enable the Hearing Board members to review the material prior to the meeting.

TAKE NOTICE THAT this hearing is governed by the provisions of the *Statutory Powers Procedure Act*. Under the Act, a witness is automatically afforded a protection that is similar to the protection of the Ontario Evidence Act. This means that the evidence that a witness gives may not be used in subsequent civil proceedings or in prosecutions against the witness under a Provincial Statute. It does not relieve the witness of the obligation of this oath since matters of perjury are not affected by the automatic affording of the protection. The significance is that the legislation is Provincial and cannot affect Federal matters. If a witness requires the protection of the Canada Evidence Act that protection must be obtained in the usual manner. The Ontario Statute requires the tribunal to draw this matter to the attention of the witness, as this tribunal has no knowledge of the effect of any evidence that a witness may give.

AND FURTHER TAKE NOTICE that if you do not attend at this Hearing, the Hearing Board of the Conservation Authority may proceed in your absence, and you will not be entitled to any further notice in the proceedings.

DATED the ___ day of , _____20__.

APPENDIX F – HEARING GUIDELINES

The Board of Directors of the Lower Trent Region Conservation Authority

Per:

Staff Member, Title: _____

Chief Administration Officer/ Secretary Treasurer: _____

Appendix F-2

HEARING PROCEDURES

1. Motion to sit as Hearing Board.
2. Roll Call followed by the Chair's opening remarks. For electronic hearings, the Chair shall ensure that all parties and the Hearing Board are able to clearly hear one another and any witnesses throughout the hearing.
3. Staff will introduce to the Hearing Board the applicant/owner, his agent and others wishing to speak.
4. Staff will indicate the nature and location of the subject application and the conclusions.
5. Staff will present the staff report included in the Authority agenda.
6. The applicant and/or his agent will speak and also make any comments on the staff report, if he so desires.
7. The Hearing Board will allow others to speak, and, if necessary, the applicant in rebuttal.
8. The Hearing Board will question, if necessary, both the staff and the applicant/agent.
9. The Hearing Board will move into camera. For electronic hearings, the Hearing Board will separate from the other participants.
10. Members of the Hearing Board will move and second a motion.
11. A motion will be carried which will culminate in the decision.
12. The Hearing Board will move out of camera. For electronic meeting, the Hearing Board will reconvene with other participants.
13. The Chair or Acting Chair will advise the owner/applicant of the Hearing Board decision.
14. If decision is "to refuse" or "approve with conditions", the Chair or Acting Chair shall notify the owner/applicant of his/her right to appeal the decision to the Minister within 15-days of receiving the decision and/or the Ontario Land Tribunal within 90 days of receipt of the reasons for the decision.
15. Motion to move out of Hearing Board and sit as the Board of Directors.

Appendix F-3

CHAIR'S REMARKS WHEN DEALING WITH HEARINGS WITH RESPECT TO Part VI of the Conservation Authorities Act and ONTARIO REGULATION 41/24.

Date: Month XX, XXXX
O.Reg. 41/24: Permit Application # RP-XX-XXX
Applicant: Name

We are now going to conduct a hearing under Section 28.1 of the Conservation Authorities Act in respect of an application by _____: , for permission to:_____

The Authority has adopted regulations under section 28.1 of the Conservation Authorities Act which requires the permission of the Authority for development within an area regulated by the Authority in order to ensure no adverse effect on the control of flooding, erosion, dynamic beaches, unstable soils or bedrock, or to permit alteration to a shoreline or watercourse or interference with a wetland. This Hearing is about granting permission to develop under the Authority regulations; a separate matter from approvals under the *Planning Act*.

The Staff has reviewed this proposed work and a copy of the staff report has been given to the applicant.

The Conservation Authorities Act (Section 28.1 [5]) provides that:

"(5) An authority shall not refuse an application for a permit or attach conditions to a permit unless the applicant for the permit has been given an opportunity to be heard by the authority."

While holding this hearing, the Hearing Board is to determine whether or not a permit is to be issued, with or without conditions. In doing so, we can only consider the application in the form that is before us, the staff report, such evidence as may be given and the submissions to be made on behalf of the applicant. Only information disclosed prior to the hearing is to be presented at the hearing. It is not our place to suggest alternative development methods.

It is to be noted that if the Hearing Board decision is "to refuse" or not support the proposed work within the permit submission, the Chair or Acting Chair shall notify the owner/applicant of his/her right to appeal the decision to the Ontario Land Tribunals.

The proceedings will be conducted according to the *Statutory Powers Procedure Act*. Under Section 5 of the Canada Evidence Act, a witness may refuse to answer any question. The procedure in general shall be informal without the evidence before it being given under oath or affirmation.

If the applicant has any questions to ask of the Hearing Board or of the Authority representative, they must be directed to the Chair of the Board.

At this time, if any member of this Board has intervened on behalf of the Applicant with regards to this matter, they should recuse themselves so there is no apprehension of bias and that a fair and impartial Hearing may be conducted.

Appendix F-4

(Date) **BY REGISTERED MAIL/ EMAIL**

(name) , (address)

Dear:

RE: NOTICE OF DECISION
Hearing Pursuant to Section 28.1(5) of the Conservation Authorities Act
Proposed Residential Development
Lot , Plan ; ?? Drive, City of
(Application #)

In accordance with the requirements of the Conservation Authorities Act, the Lower Trent Region Conservation Authority provides the following Notice of Decision:

On ***(meeting date and numbe***r), the Hearing Board of the Lower Trent Region Conservation Authority refused/approved your application/approved your application with conditions. A copy the Board's Resolution # _____ has been attached for your records. Please note that this decision is based on the following reasons: ***(the proposed development/alteration to a watercourse adversely affects the control of flooding, erosion, dynamic beaches, unstable soils or bedrock***.)

In accordance with Section 28.1 (7) of the Conservation Authorities Act, an applicant who has been refused permission or who objects to conditions imposed on a permission may, within 15 days of receiving the reasons under subsection (7), appeal to the Minister who may refuse the permission; or grant permission, with or without conditions. Additionally, if a decision is not made by the Minister within 30-days after receiving the request, an applicant may appeal the decision to the Ontario Land Tribunal Through Order in Council 332/2018 the responsibility for hearing the appeal has been transferred to the Ontario Land Tribunal. For your information, should you wish to exercise your right to appeal the decision, a letter by you or your agent/counsel setting out your appeal must be sent within 90 days of receiving this decision addressed to:

Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario M5G 2K4

A carbon copy of this letter should also be sent to Lower Trent Region Conservation Authority. Should you require any further information, please do not hesitate to contact ***(staff contac***t) or the undersigned.

Yours truly,

Chief Administration Officer/ Secretary Treasurer

Enclosure

Appendix F-5

Date

FILE #: RP-XX-XXX
PERMIT#: P-XX-XXX

Name of Applicant
Address of Applicant

ATTENTION: **It is important that you read and understand the contents of this letter and ensure that all necessary parties (i.e., landowner(s) and anyone conducting site works) are aware of any special mitigation requirements contained herein.**

RE: Location where Permission Applies

Application for permission to (development, interference and/or alteration) pursuant to Part VI of the Conservation Authorities Act and Ontario Regulation 41/24 – *Prohibited Activities, Exemptions and Permits*

As you are aware, your application to allow for (Proposed development/interference/alteration) on the property noted above was heard and approved by the Lower Trent Region Conservation Authority's (LTC) Hearing Board on Hearing Date. The following resolution was passed (draft resolution for final approval at the upcoming LTC's Board of Directors' meeting – Next Meeting Date):

RES: HC2/17 **Moved by: Board Member** **Seconded by: Board Member**
THAT the permit application RP-XX-XXX by Applicant for permission (development/interference/alteration) in the (Regulated Area) be approved.
Carried

Please accept this letter as formal notice of the decision of the Hearing Board.

The proposed (development/alteration/interference) is situated within regulated areas associated with (Regulated Area). Attached you will find a copy of Permit No. P-XX-XXX issued for the works noted above in accordance with Ontario Regulation 41/24. The permit has been issued based on the information, plans and specifications submitted with the application as well as your acceptance of the general conditions of approval detailed in the application. The plans and specifications are attached as part of the approved documentation.

The following mitigation measures are expected to be implemented as part of the approval from LTC:

1) *Listed Conditions of Permission;*

Should you require any further information, please do not hesitate to contact ***(staff contac***t) or the undersigned.

Appendix F-6

NOTICE OF HEARING

(Subsection 28.1.2 (7) of the Conservation Authorities Act)

IN THE MATTER OF

The Conservation Authorities Act, R.S.O. 1990, Chapter 27

AND IN THE MATTER OF an application by

FOR THE PERMISSION OF THE CONSERVATION AUTHORITY

Pursuant to Regulations made under Section 28.1.2, Subsection 7 of the said Act

TAKE NOTICE THAT a Hearing before the Hearing Board of the Conservation Authority will be held under Section 28.1.2, Subsection 7 of the Conservation Authorities Act at the offices of the said Authority (located at 714 Murray Street, RR #1 Trenton, Ontario K8V 0N1), at the hour of XX:XX, on the XX day of XXX , 20XX, [for electronic hearings, include details about the manner in which the hearing will be held] with respect to the application by (NAME) to permit development within an area regulated by the Authority in association with a Minister's Zoning Order (REGULATION NUMBER) on Lot , Plan/Lot , Concession , (Street) in the City of , Regional Municipality of , River Watershed.

TAKE NOTICE THAT you are invited to make a delegation and submit supporting written material to the Hearing Board for the meeting of (meeting date). If you intend to appear [For electronic hearings: or if you believe that holding the hearing electronically is likely to cause significant prejudice], please contact (name). Written material will be required by (date), to enable the Committee members to review the material prior to the meeting.

TAKE NOTICE THAT pursuant to Section 28.1.2 of the Conservation Authorities Act, a conservation authority is required to grant the permission applied for and may only impose conditions to the permission. The Hearing will therefore focus on the conditions to be imposed to the granting of the permission.

TAKE NOTICE THAT this hearing is governed by the provisions of the *Statutory Powers Procedure Act*. Under the Act, a witness is automatically afforded a protection that is similar to the protection of the *Ontario Evidence Act*. This means that the evidence that a witness gives may not be used in subsequent civil proceedings or in prosecutions against the witness under a Provincial Statute. It does not relieve the witness of the obligation of this oath since matters of perjury are not affected by the automatic affording of the protection. The significance is that the legislation is Provincial and cannot affect Federal matters. If a witness requires the protection of the Canada Evidence Act that protection must be obtained in the usual manner. The Ontario Statute requires the tribunal to draw this matter to the attention of the witness, as this tribunal has no knowledge of the affect of any evidence that a witness may give.

AND FURTHER TAKE NOTICE that if you do not attend at this Hearing, the Hearing Board of the Conservation Authority may proceed in your absence, and you will not be entitled to any further

notice in the proceedings.

DATED the ___ day of , _____202X

The Hearing Board of the Conservation Authority

Per:

Chief Administrative Officer/Secretary-Treasurer

Appendix F-7

HEARING BOARD CHAIR'S REMARKS WHEN DEALING WITH HEARINGS

(Section 28.1.2, Subsection 7 of the Conservation Authorities Act)

WITH RESPECT TO Part VI of the Conservation Authorities Act and ONTARIO REGULATION 41/24

We are now going to conduct a hearing under section 28.1.2 of the Conservation Authorities Act in respect of an application by _____: , for permission to:_____

Under Section 28.1.2 of the Conservation Authorities Act, an Authority is required to grant permission for any application submitted under a regulation made under subsection 28.1.2 (1) for permission to carry out all or part of a development project, in an area regulated by the Authority, associated with a Minister's Zoning Order, provided the criteria listed under subsection 28.1.2 (1) are met. A permission is subject to any conditions as may be prescribed by the Authority.

The Staff has reviewed this proposed work and prepared a staff report, including the proposed conditions of approval for the proposed work, which has been given to the applicant and the Board. The applicant was invited to file material in response to the staff report, a copy of which has also been provided to the Board.

Under Section 28.1.2 (7) of the Conservation Authorities Act, the person requesting permission has the right to a hearing before the Authority/ Hearing Board.

In holding this hearing, the Authority Board/ Hearing Board is to determine the prescribed conditions to be attached to the approved permission. In doing so, we can only consider the application in the form that is before us, the staff report, such evidence as may be given and the submissions to be made on behalf of the applicant. Only Information disclosed prior to the hearing is to be presented at the hearing.

The proceedings will be conducted according to the *Statutory Powers Procedure Act*. Under Section 5 of the *Canada Evidence Act*, a witness may refuse to answer any question on the ground that the answer may tend to incriminate the person, or may tend to establish his/her liability to a civil proceeding at the instance of the Crown or of any person.

The procedure in general shall be informal without the evidence before it being given under oath or affirmation unless decided by the hearing members.

If the applicant has any questions to ask of the Hearing Board or of the Authority representative, they must be directed to the Chair of the board.

Quinte CONSERVATION

2061 OLD HIGHWAY 2, RR#2, BELLEVILLE, ON, K8N 4Z2
PHONE: (613) 968-3434 • **FAX**: (613) 968-8240
info@quinteconservation.ca

March 31, 2025

Scott Robertson
Development Officer
Lower Trent Conservation
714 Murray St. RR#1
Trenton, ON K8V 0N1

RE: RP-25-011 1225 Shelter Valley Road, Township of Alnwick-Haldimand

As requested on March 5, 2025, Quinte Conservation staff have reviewed the technical submission for the Grafton Creekside Golf proposed clubhouse replacement in the Township of Alnwick-Haldimand. It is the reviewer's understanding that the application is for the demolition and reconstruction of the existing clubhouse within the Shelter Valley Creek floodplain. The proposed structure will have a larger footprint and will include 3 rooms for overnight stays.

The following documents were provided for review:

- Environmental Impact Study – 1225 Shelter Valley Road, Township of Alnwick/Haldimand, Nothumberland County (Cambium, 2025)
- Clubhouse Grading Plan (Jewell Engineering, 2025)
- Topographic Base Plan of 1225 Shelter Valley Road (IBW Surveyors, 2025)
- Site Plan 1225 Shelter Valley Road
- Floodplain Assessment – Grafton Creekside Golf for the Proposed Clubhouse Replacement (Jewell, 2025)
- Grafton Creekside Golf Clubhouse drawings (MH Design + Studio, 2024)
- Map of property (LTC, 2025)
- RP-25-011 Permit Application (Brouwer, 2025)
- LTC permit response letter (LTC, 2025)
- Cut and fill emails (Jewell and LTC, 2025)

The Jewell Floodplain Assessment aimed to identify the flood hazard in the vicinity of the clubhouse, establish regulatory flows for Shelter Valley Creek, and recommend final floor elevation for the building (0.3m above the regulatory flood elevation).

Regulatory Flood Flows

A general frequency analysis (GFA) for Water Survey of Canada Gauge 02HD010 Shelter Valley Brook near Grafton was used to determine the 1 in 100-year flood flows. Using the annual peak flow data for the entire data set, a 1 in 100-year peak flow of 64.6 cms was determined.

Quinte CONSERVATION

2061 OLD HIGHWAY 2, RR#2, BELLEVILLE, ON, K8N 4Z2
PHONE: (613) 968-3434 • **FAX**: (613) 968-8240
info@quinteconservation.ca

The Timmins storm flow was determined using a methodology that has not been included in the 2002 MNR Technical Guide – River and Stream Systems: Flooding Hazard Limit (Technical Guide) or similar Ontario Hydrology publications. Chapter 3 (Definitions of the Flooding Hazard Standards, Section 3.4 of the Technical Guide states that the Timmins storm does not fit the historical rainfall data distribution. Hence no statistical analysis could be carried out to determine the return period for the storm.

There is a relationship between precipitation and flow but it is not direct and many factors influence the relationship such as rainfall distribution, and upstream storage capacity. Typically, hydrologic models are used to determine the peak flow generated by the Timmins storm on a watershed. In this case, the Timmins storm was estimated by creating a relationship between return period flow versus precipitation, resulting in a Timmins peak flow of 55 cms. This method assumes that the GFA return period peak flows would be the result of the 12-hour return period rainfall, and that the relationship between rainfall and precipitation are linear (even during extreme rainfall events).

Section 2.5 of the Floodplain Assessment suggests that a hydrologic model was developed and not used due to the poor calibration for the Frances storm, which showed the model was overestimating the runoff volume. As suggested, the sharp peak may be attributed to something unique during the Frances storm that happened locally near the gauge causing an increase in water level, or there was a suddent release of impounded water upstream (such as a beaver dam breach). Although the model was difficult to calibrate to the Frances storm, a hydrologic model is the preferred method to determine the peak flow for the Timmins storm.

Flood elevation and first floor elevation

The 1 in 100-year peak flows were higher than the Timmins peak flows based on the analysis performed by Jewell. The 1 in 100-year flood hydrograph was modeled in a 2D, unsteady state model to determine the flood elevation at the location of the development. The flood elevation was modelled to be 102.5 m CGVD 28. The minimum first floor elevation is 102.8 m CGVD 28. The grading plan shows an elevation of 102.80 m at the corners of the building and 102.75 m at the corner of the patio. A safe access route to the building has not been indicated on the grading plan. The data was not provided on the Grading Plan.

Fill

Most of the existing grades in the vicinity of the clubhouse are below the floodplain. 92 cubic metres of fill is required below the floodplain to floodproof the clubhouse building. Information on a corresponding cut in the floodplain was not provided.

Jewell states that the new larger structure will have no appreciable impact on the ability of the Shelter Valley Creek floodplain to convey runoff and there would subsequently be no appreciable impact on water levels. An analysis of this impact was not provided in the floodplain assessment.

Increase in occupancy

Insufficient information was provided regarding the existing septic system and whether it is designed for the increase in occupancy. No elevation information was provided regarding the septic system, however, it appears to be within the floodplain.

Quinte CONSERVATION

2061 OLD HIGHWAY 2, RR#2, BELLEVILLE, ON, K8N 4Z2
PHONE: (613) 968-3434 • **FAX:** (613) 968-8240
info@quinteconservation.ca

Do not hesitate to contact the undersigned if you have any questions concerning these comments.

Regards,

CPhillibert

Christine Phillibert, P.Eng.

Water Resources Manager
Quinte Conservation

LOWER TRENT CONSERVATION

HEARING

Ontario Regulation 41/24 Permit Application: RP-25-011

Property Owner: James Brouwer
1225 Shelter Valley Road
Municipality of Alnwick-Haldimand, Con A, Lot 18-19

Presented to: Lower Trent Region Conservation Authority Hearing Board
Presented by: Gage Comeau, Manager, Watershed Management, Planning & Regulations

Date: April 10, 2025

Contents

- File Timelines
- Subject Property
- LTC Regulatory Mapping
- Development Proposal
- O. Reg. 41/24 LTC Policies
- Staff Conclusion

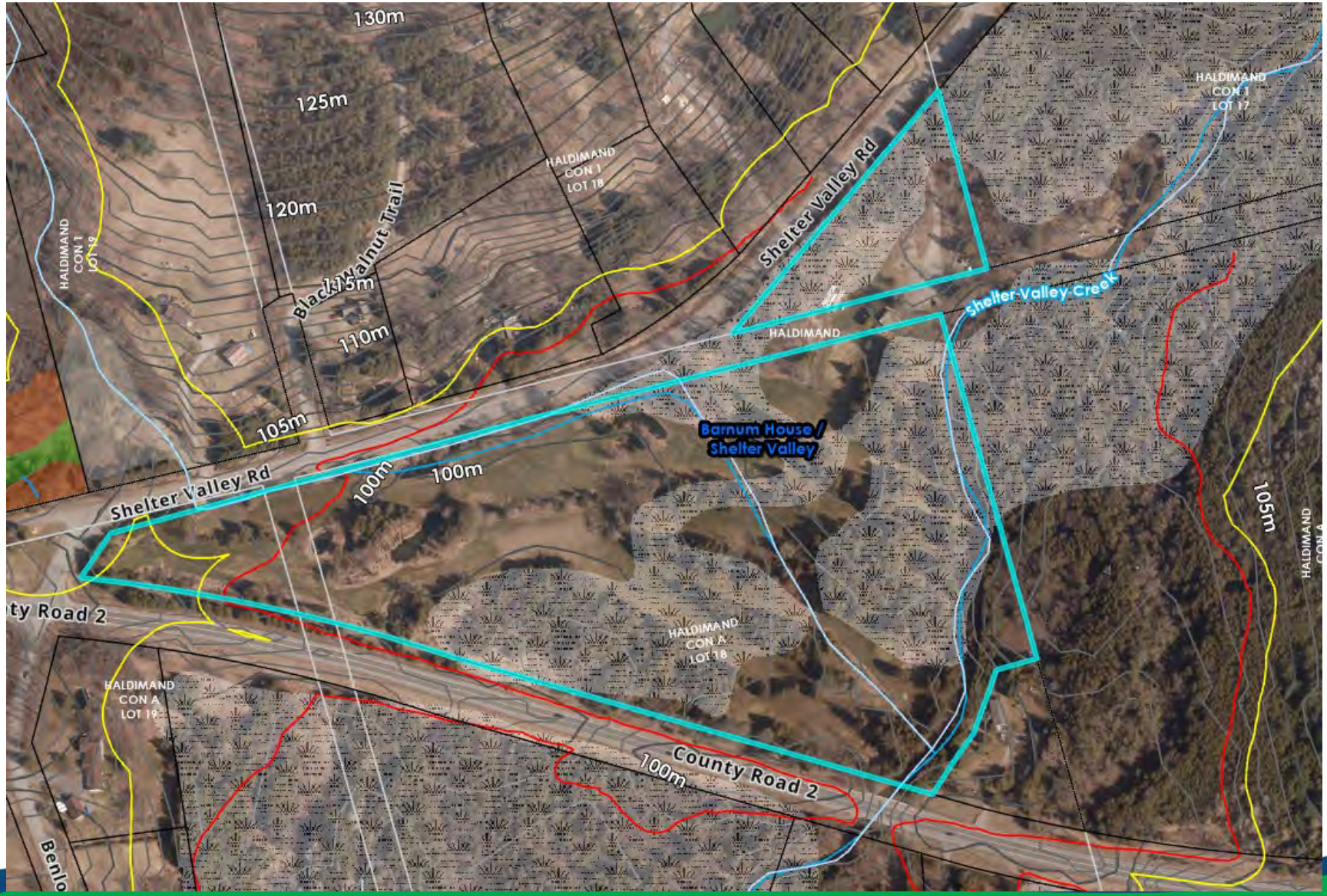
Permit Application: RP-25-011

- Pre-consultation meeting: December 9, 2024
- Permit Application received: January 20, 2025
- Complete Application: February 18, 2025
- Permit Status Letter: February 25, 2025
- Request for Hearing: March 3, 2025
- Notice of Hearing: March 13, 2025
- Hearing Date: April 10, 2025

Subject lands

- Golf course located north of Highway 2 and south of Shelter Valley Road
- Sections of the property are located within the Shelter Valley Creek floodplain
  - Floodplain delineated by Crysler & Lathem Ltd. in 1978.

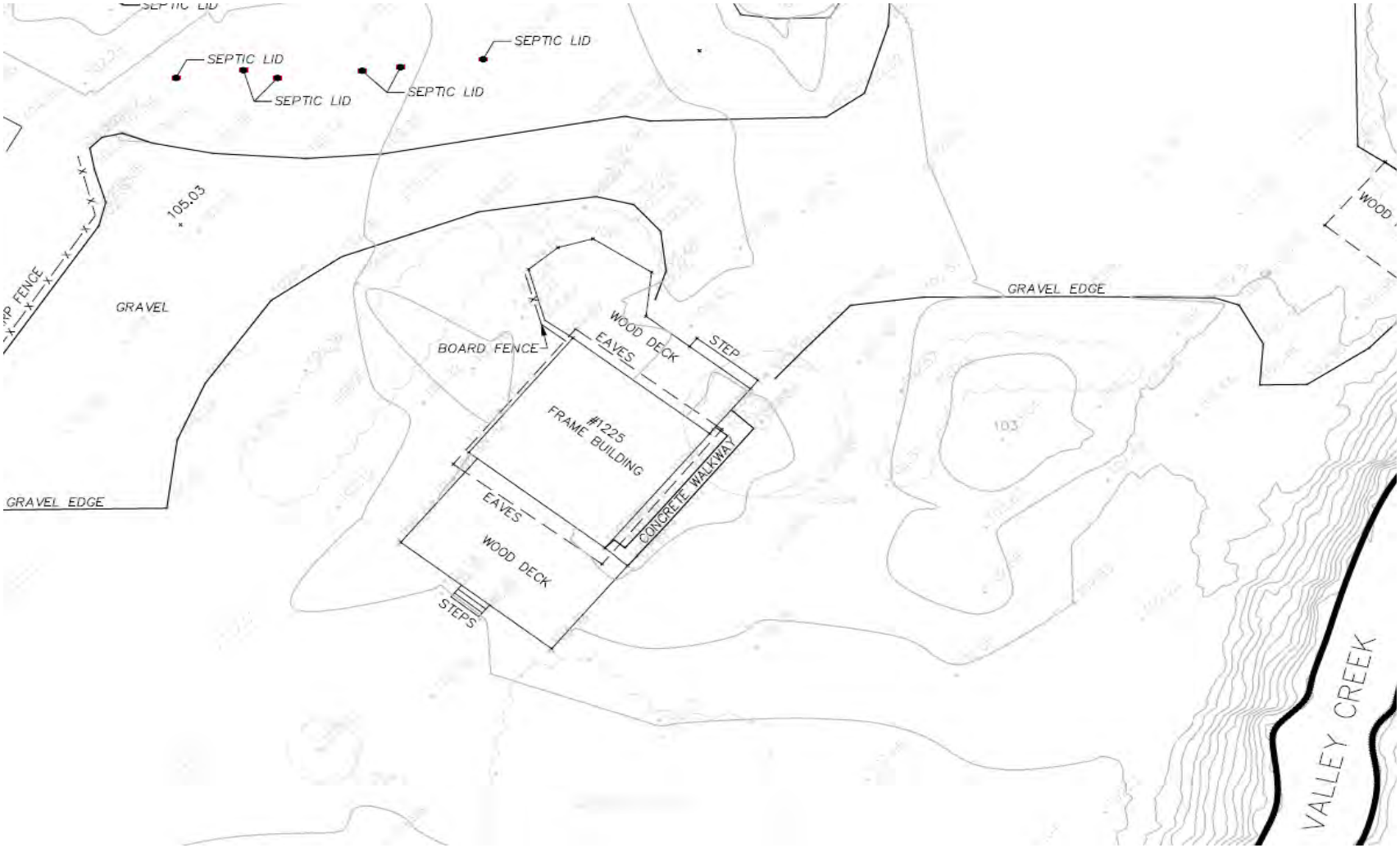
LTC Regulatory Mapping



Development Proposal

- Permit Application received: January 20, 2025
  - To undergo the placement of fill material on the property and to construct a two-storey 2500 ft2 clubhouse structure with a deck. The proposed structure will include a restaurant, 3 stay and play rooms, a pro shop and a golf simulator.

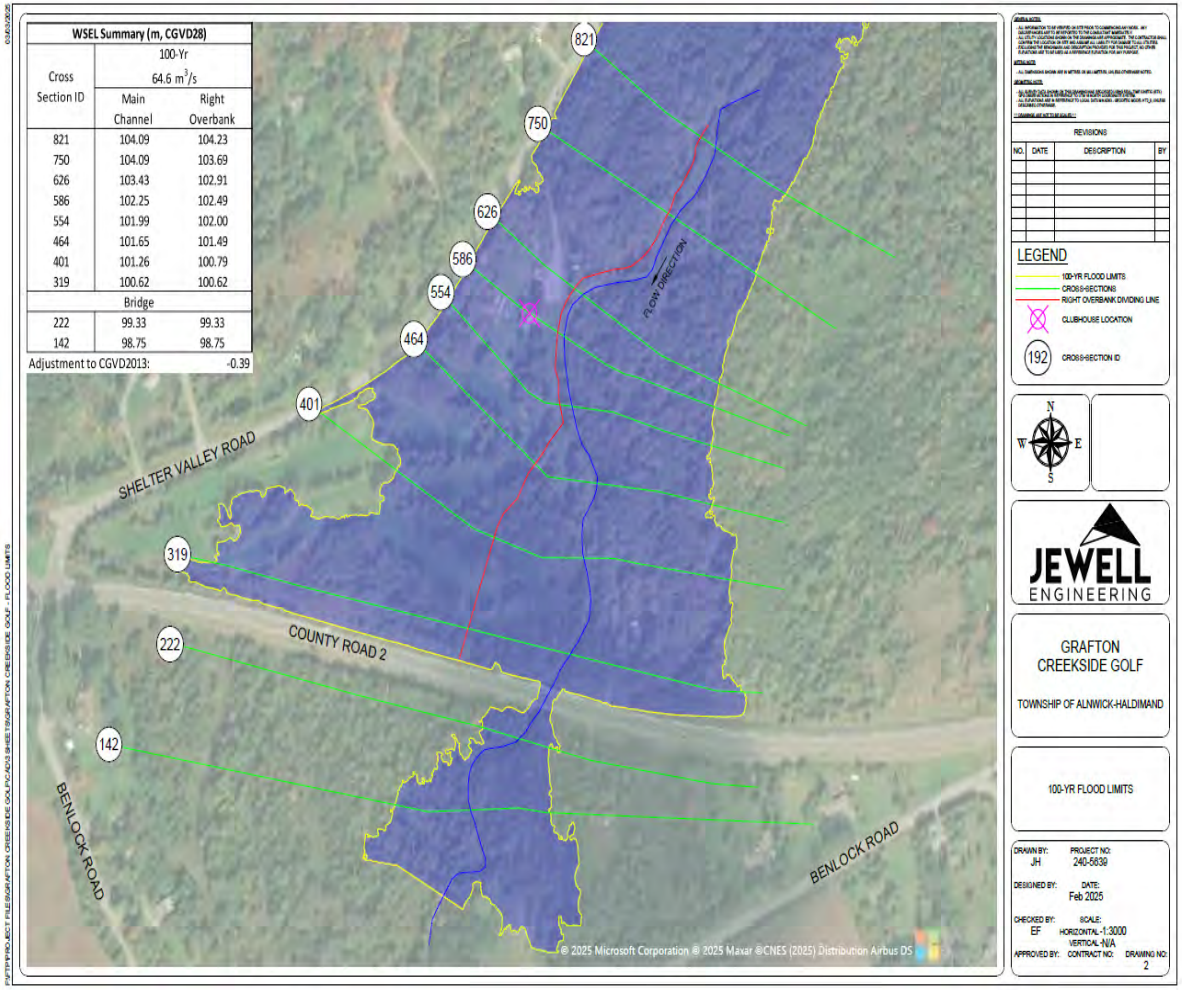
Existing Topography



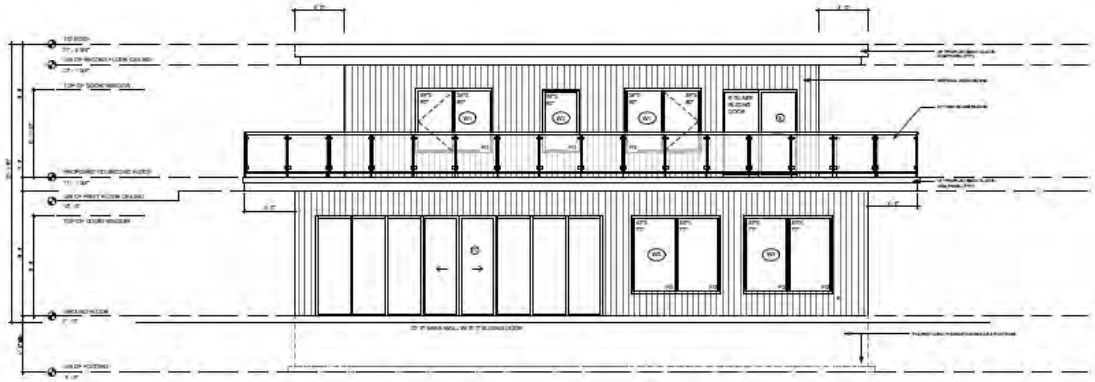
Proposed Grading Plan

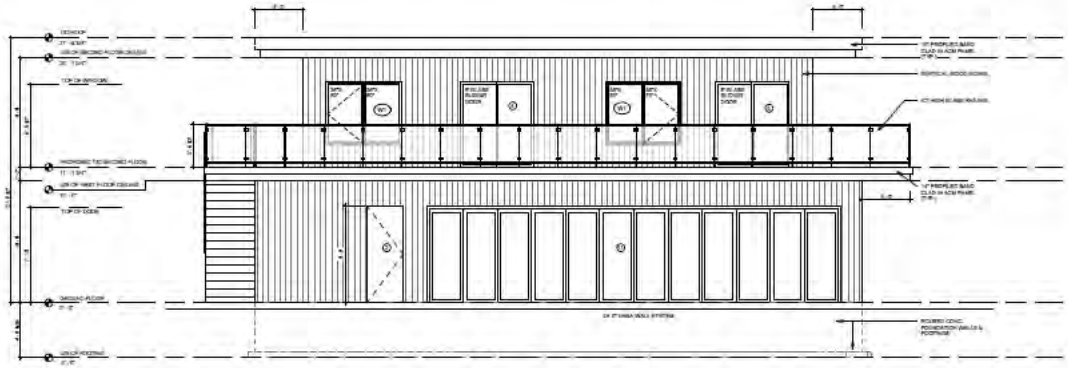
Development Proposal

- Floodplain area – 81.9-84.0 metres CGVD2013
- Existing Timmins depth of flooding is 0.36 metres
- Proposed works reduced impact to the control of flooding for the subject property nearby adjacent lands



Development Proposal





GRAFTON CREEKSIDE
GOLF CLUBHOUSE

Ontario Regulation 41/24 Policy Document

- **General Policies**
- a) risk to public safety is not increased.
- c) susceptibility to natural hazards is not increased nor new hazards created (e.g., there will be no impacts on adjacent properties with respect to natural hazards).
- f) safe ingress/egress is available for proposed development.
- k) the control of flooding, erosion, dynamic beaches, pollution and/or the conservation of land is not adversely affected during and post development.

- **5.3.1.1 Development within One-Zone Regulatory Floodplain of River or Stream Valleys**

1. Development within the Regulatory floodplain shall not be permitted.
2. Placement of fill, flood hazard protection and/or bank stabilization works to allow for future/proposed development or an increase in development envelope within the Regulatory floodplain shall not be permitted.
4. Major development within the Regulatory floodplain shall not be permitted.

Staff Conclusion

Based on a review of the relevant policies that are applicable to this proposal, staff are not in a position to support the application as it does not conform with the policies.

Grafton Creekside Golf - LTC Presentation

Project Overview

- Replace 66.85m² facility with 213.36m² two-story clubhouse
- Key features:
    - Expanded kitchen/bar with 24 indoor + 16 outdoor seats
    - Golf simulator & accessible facilities
    - 3 stay-and-play suites with wraparound decks
    - EV charging stations (2 units)

Technical Compliance

- Floodproofing measures:
    - Building elevation at 102.8m (0.6m above 100-year floodplain) [Jewell Engineering grading plan]
    - Minimal landscaping impact - single retaining wall NW corner
- Wastewater management:
    - 9,875L/day design flow vs 9,900L system capacity
    - Septic engineers confirm no system upgrades required

Community Value Proposition

- Economic impacts:
  → 10-12 new local jobs created
  → Wedding/event venue attracting regional tourism
  → Highway 401 proximity (3km) enhances accessibility
- Sustainability features:
    - EV infrastructure supporting green transit

Commitment to Stewardship

- Comprehensive studies completed:
  » Environmental Impact Assessment (Cambium Environmental)
  » Hydrological Analysis (Jewell Engineering)
  » Topographic Validation (multiple surveys)
- Preservation focus:
  "Maintaining natural floodplain function while enhancing responsible recreational use"