LANARK COUNTY

lanarkcounty.ca

99 Christie Lake Road, Perth, ON K7H 3C6

Zeyad Hassan, P.Eng
Z Developments
537 Stargazer Crescent
Ottawa ON, K4M 0H2

2025.04.25
Via email zeyad.hassan@zdevelopment.ca

Status Letter for a Draft Plan of Subdivision – Douglas Landing Subdivision
Part of Lot 25, Concession 12, Township of Beckwith, Lanark County
County File No. 09-T-25001

An application for a Draft Plan of Subdivision, Douglas Landing, also known as Part of Lot 25 Concession 12, in the Township of Beckwith, has been submitted by the agent, Z Developments, on behalf of the Owner, Douglas Landing Developments. A pre-consultation was previously held on May 13, 2021 and following the meeting the County formally received the Subdivision Application and deemed it complete on February 18, 2025 as to the prescribed information and material to be provided under subsection 51(17) and (18) of the Planning Act.

The subject property is approximately 22.18 hectares (54.81 acres) and located in the Northern portion of the Township. The subject property is designated Rural (RU) in both the Lanark County Official Plan and Township of Beckwith Official Plan. The applicant will also apply for a Zoning By-law Amendment to re-designate the subdivision lands as Rural Residential (RR) with Special Exception to enable the possibility of Additional Residential Units (ARU).

The proposed Draft Plan of Subdivision includes 23 single detached residential dwellings, two (2) blocks for stormwater management, one (1) block for environmentally sensitive land, one (1) internal street with an turning circle, and one proposed entrance at Douglas Landing Sideroad. Douglas Landing Road will be required to be extended along an unopened road allowance to meet the new proposed street. An easement is proposed on Lot 7 in favour of the Township to facilitate the necessary drainage infrastructure and Stormwater Management maintenance.

A summary of the agency comments is included below, formal agency letters and correspondences between the agency and County are attached and should be reviewed in their entirety. Comments are as received on April 25, 2025.

Agency Name	Date Received	Comments
Lanark County Planning Department	April 25, 2025	Comments related full scope of proposed development.
Lanark County Public Works Department	March 4, 2025	Comments related to SWM report and drainage
Mississippi Valley Conservation Authority (MVCA)	April 24, 2025	Comments related to EIS, drainage and SWM report
GEMTEC Municipal EIS Peer Reviewer	April 1, 2025	Comments related to EIS
GEMTEC Municipal Hydrogeological Peer Reviewer	April 1, 2025	Comments related to Hydrogeological Report
Novatech Municipal Stormwater Peer Reviewer	April 4, 2025	Comments related to the SWM report
Public Comments (4)	April 19, 2025 April 17, 2025 April 16, 2025 March 10, 2025	Comments related to traffic, land use compatibility, emergency access, SWM

Note: the following agencies and stakeholders were notified, but did not provide comment: First Nations, Provincial Ministry(s), school boards, telecommunication firms, utility firms, and the Mississippi Rideau Septic System Office (MRSSO).

For ease of reference to expedite the review, the submission back to the County in response to the Status Letter shall include a cover letter that:

- includes the date the updated submission is made
- includes an index of all documents, drawings and reports included in the submission; and
- any updated contact information for the file, including changed or new agents or firms.

The submission shall also include:

- a document that a summarizes the full scope of issues and comments, itemized by issue and grouped by agency or stakeholder, and details how the updated submission addresses them
- the associated documents, drawings and updated reports
- a link to a location where the documents can be reviewed and retrieved, valid for a minimum of 15 days

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Koren Lam
Senior Planner
Lanark County

CC: Mayo Adenlolu, Z Developments
Gillian Espie, Douglas Landing Developments
Enam Hoque, Township of Beckwith
Mike Dwyer, Lanark County

LANARK COUNTY

lanarkcounty.ca

99 Christie Lake Road, Perth, ON K7H 3C6

Zeyad Hassan, P.Eng
Z Developments
537 Stargazer Crescent
Ottawa ON, K4M 0H2

2025.04.25
Via email zeyad.hassan@zdevelopment.ca

RE: County Planning Comments on Douglas Landing Subdivision Application
County File No. 09-T-25001

Dear Zeyad,

Lanark County has received the first submission for Douglas Landing Subdivision in the Township of Beckwith. County Planning Department staff have undertaken a preliminary review of the material provided in the submission and provide the following comments:

General Comments

- Beckwith Township, in coordination with the County, has initiated peer reviews of Environmental Impact Study, prepared by Pinchin, dated January 13, 2025, Servicing Options Statement, Terrain Assessment and Hydrogeological Study, prepared by Pinchin, dated January 13, 2025 and the Preliminary Stormwater Management Report, prepared by Tatham Engineering, dated January 13, 2025. The peer review comments are provided in full as a part of the Status Letter. The Township and County reserves the right to seek subsequent peer reviews of report updates or reports not reviewed to date as the application develops.
- The County encourages the applicant and the local municipality to dialogue early on how any potential unique requirements related to wells and septics (i.e. increased casing depth, non-standard designs, limiting septic daily flow rates, increased setbacks etc.), as an outcome of the Hydrogeological Assessment, will be implemented to ensure compliance during development build out. Based on our experience, this can be a

complex issue to track, manage and adequately regulate. It is best to build early consensus on a robust approach, should it likely apply.

- The sufficiency of the outlet and legal entitlement of the stormwater conveyance pathway needs to be assessed and verified all the way to its outlet at natural waterbody or water course.
- As will also be indicated in the Status Letter, for ease of issue identification, response and follow-up, the County requests that the applicant review all correspondence received and build a comprehensive table of issues/comments grouped by subject area and/or agency, including a specific section for public comments, along with a column indicating a the response and/or how the matter has been addressed in the updated submission (or will be addressed if delayed) as well as point to the related updated document, and specific section as applicable, for more details.

<u>Draft Plan of Subdivision</u>

- Is the cul-de-sac area shown as Part 2 on Plan 27R11142 outside the Plan of Subdivision/already owned by a third party? If owned by the Township and no longer needed for the dead-end given the road extension, would it be beneficial to transfer it back and include it as a part of Lot 5.
- Section 51(17) d) of the Planning Act - it is the preference of the County to see a table on the draft plan that identifies the specific land use and for each lot/block and please also include lot/block dimensions.
- What will be the disposition of Block 26 - retained by owner or transferred to a third party?

<u>Conceptual Plan</u>

- Lot 5 - will the proposed dwelling and septic field locations meet the respective zoning and Ontario Building Code setbacks from the side yard lot line?

Environmental Impact Study

- In the previous severance application, it was noted a Fish Habitat study would be required due the subdivision road entrance adjacent to wetlands and watercourses. While the EIS report mentions the completion of the Fish Habitat study, this study was done over 8 years ago. It is recommended the applicant follow the suggested MVCA recommendations in their comment letter.

Hydrogeological & Terrain Analysis Report

- The applicant is directed to the following documents related to the scope of Hydrogeological assessments for projects in Lanark County: Missing references and should be attached.
- Was a survey of surrounding wells/users performed per D-5-5 Sec 4.6? Not indicated in scope or report.
- Missing clear statement on hydrogeological sensitivity
- Well 4 - slower recovery and greater drawdown vs other 3 test wells? Implications were not discussed.
- Is the 10 m of bedrock being adequate isolation for Nitrate loading a reasonable conclusion. Is there reasonable evidence that the bedrock is competent and not fractured?
- Need for comment on Additional Residential Unit (ARU) viability and/or if future further assessments would be required if one is proposed or certain daily flow thresholds are proposed to be exceeded based on final dwelling design or future changes/additions.
- Comment on the representative nature of the test wells given none were provided in proximity to locations of past agricultural practices on parts of the lands, including cropping/likely nutrient application in the north-west corner, and farm yard and potential soil stripping and material or nutrient stockpiling along the northern boundary.
- The subject property has previously been severed in 2016 (B16/083). The Lanark Leeds Grenville & Lanark District Health Unit (LLGLDHU) previously raised concerns of poor drainage as there is shallow silty clay soils over bedrock. It was also recommended that while the property would be large enough to accommodate on-site

sewage disposal, an imported leaching bed fill will be required to construct a conforming septic system. Please consult with Mississippi Rideau Septic System Office (MRSSO) for more details.

Stormwater Management Report

- The SWM report is based on the findings of Pinchin's hydrogeological work, which was flagged as incomplete. An updated report should be prepared once/in concert with an updated/ finalized hydrogeological report.
- Will the site be raised with fill to reach the 1m ditch depth, or the bedrock excavated? If bedrock excavation, are there impacts for hydrogeological considerations (aquifer or well interference)?
- Verify uncontrolled rear and side yard drainage acceptable to the Township of Beckwith given potential for nuisance ponding or complaints from adjacent landowners.
- A review of the tile drain should be completed to ensure its outlet will not be impacted by the development or that the development will not interfere with the tile system if partially on the subject lands. If partially on the subject lands an assessment of the viability of decommissioning the impacted portion of the drain needs to be undertaken to ensure future excavations and residential foundation drainage are not impacted.
- If the site is deemed hydrologically sensitive due consideration in the storm pond viability and design should be given.
- Outlets should be assessed from sufficiency and legal ability to convey over third party lands all the way to the receiving natural waterbody or watercourse.
- The openness of Beckwith to assume two stormwater ponds along with the proposed maintenance schedule and costs should be developed and reviewed with Beckwith.
- Does Block 24 have sufficient road access/frontage to allow for future maintenance and equipment access?

Road Extension

- A concept design and site investigation for the Douglas Rd extension should be completed to confirm: viability within existing road allowance or need for additional lands/width; non-interference with conceptual SWM outlets; environmental and archeological screening etc.

Fiscal Impact

- Given the road configuration, the need for a road extension as well as two stormwater ponds for a 23 unit development, the developer should engage with Beckwith to confirm if they wish to have a fiscal impact analysis completed that would quantify the maintenance and lifecycle costs of the proposed public assets versus offsetting taxation from the development.

cc: Mayo Adenlolu, Z Developments
Gillian Espie, Douglas Landing Developments
Enam Hoque, Township of Beckwith
Mike Dwyer, Lanark County

Scoped Hydrogeological Report Requirements for Development by Consent in Lanark County

Mississippi Valley Conservation Authority and Rideau Valley Conservation Authority

Version 1.0 July 2, 2015

1. Overview

The Mississippi Valley and Rideau Valley Conservation Authorities, through memorandums of understanding, provide technical advice to the County of Lanark and constituent municipalities about the suitability of hydrogeological reports that are produced in support of privately serviced development applications. The CA's advice, which is based on provincial guidance and current industry standards, aims to reasonably protect existing and future private groundwater supplies, thereby supporting the longevity of development at these sites and the health of existing and future residents.

Sections two (2) and three (3) of this document provide a summary of the reporting requirements and related policies and industry guidance, respectively. Section four (4) provides a checklist of reporting requirements that is to be interpreted and used by qualified professionals.

2. Summary of Reporting Requirements

When Lanark County and a constituent municipality have determined that a scoped hydrogeology study is required for development by consent, the hydrogeology report is expected to demonstrate a favourable:

I. Groundwater Quantity Assessment

Whereby an on-site well, of specified construction, will be able to provide enough water to run a household on an on-going basis and not interfere with the use of well water on adjacent properties.

II. Groundwater Quality Assessment

Whereby on-site groundwater, from a well of specified construction, will meet the *Ontario Drinking Water Standards, Objectives and Guidelines.* This is to include dissolved heavy metals, when the province has specified a related standard, and parameters associated with local land-uses.

III. Terrain Evaluation and Water Quality Impact Risk Analysis

Whereby the terrain at the site is suitable, from a planning and groundwater protection perspective, to attenuate the effluent from on-site wastewater treatment systems such that down gradient land is not impacted in excess of provincial standards. This requirement is substantially different from the requirements of the Leeds, Grenville and Lanark District Health Unit, which is to ensure that an on-site wastewater treatment system can be built on the site as per the Ontario Building Code construction requirements. These requirements are currently addressed separately from each other.

In addition, the hydrogeology report should provide:

IV. Conclusions and Recommendations

Where these are to be detailed site specific requirements, as determined by a qualified professional, that will be used to guide the municipality in their establishment of a development agreement or site plan agreement. The qualified professional provides a substantiated opinion, based on their interpretation of study findings, that the proposed development will have no adverse impact on the reasonable use of groundwater on existing and future adjacent properties.

3. Relevant Policies and Guidelines

The local conservation authorities provide advice to partner municipalities based on relevant policies in Lanark County's *Sustainable Communities Official Plan* (2012) and the official plans of individual municipalities; relevant provincial guidance; and current industry expectations. The relevance of the Ministry of the Environment and Climate Change's guidance to development by consent is given below.

I. Procedure D-5-4 Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment (1996) *http://www.ontario.ca/document/d-5-4-individual-site-sewage-systems-water-quality-impact-risk-assessment*

"Although MOEE (1) does not normally review development proposals consisting of 5 or fewer lots, municipalities are encouraged to retain, on their behalf, professionals with demonstrated expertise in hydrogeology with emphasis on development on private services, to review studies prepared in accordance with this Guideline. Municipalities are also encouraged to implement the provisions of this guideline in their consideration of developments by consent or severance."

Further, Procedure D-5-4 applies "to residential, commercial and industrial proposals which use individual on-site sewage disposal systems for the treatment of domestic waste."

II. Procedure D-5-5 Technical Guideline for Private Wells, Water Supply Assessment (1996) *http://www.ontario.ca/document/d-5-5-private-wells-water-supply-assessment*

"The guideline applies to all development proposals for residential development involving individual well water supplies. Development agreements between the proponent and the municipality … shall be used to bind development to the recommendations of approved hydrogeology studies." "The guideline also applies to developments for which a plan of condominium is required and to industrial, commercial or institutional developments where water is used for human consumption. "Procedure D-5-5 indicates that "Although MOEE does not normally review development proposals consisting of five or fewer private residences, the Ministry recommends that supplies serving five or fewer private residences should use the ODWOs(2) to ensure the quality of drinking water. This recommendation may apply to development by consent or at the official plan amendment stage…" "Where development by severance is considered, determination of the availability of a potable water supply should be made as early as possible in the severance approval process."

III. Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG) as explained in "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines" (MOECC 2003, Revised June 2006). http://www.ontario.ca/document/technical-support-document-ontario-drinking-water-standards-objectives-and-guidelines

(1) MOEE is now Ontario's Ministry of the Environment and Climate Change (MOECC). This review role was subsequently delegated to the municipal approval authorities of Ontario.

(2) ODWO is now the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG).

4. Consultant's Checklist

The following checklist is provided to assist qualified professionals in their scoping of a suitable hydrogeological investigation that would address the general reporting objectives given in the preceding overview. This checklist provides more explanation than is available in the equivalent subdivision checklist in order to more clearly define the level of effort required for applications for development by consent.

Technical pre-consultation to refine the scope of study was undertaken with RVCA / MVCA.	
A statement of professional qualifications is provided in the report. A qualified professional would be a member of the *Association of Professional Geoscientists of Ontario* (or equivalent as per the Professional Geoscientists Act).	
Groundwater Supply Assessment (Procedure D-5-5)	
Groundwater Quantity Assessment	
Water well records for the area around the site are provided and mapped in the report. MOECC's interactive mapping and well record downloads available here: http://www.ontario.ca/environment-and-energy/map-well-records; http://www.ontario.ca/data/water-wells	
The report contains a simple discussion of regional and site hydrogeology (incl. aquifer characteristics, groundwater flow regime etc.) and provides all related mapping if conditions vary within 500 m of the site. The groundwater flow regime is explained, at the regional scale, in Mississippi-Rideau Source Protection documents, which are available here: http://www.mrsourcewater.ca/en/library/reports. Information about groundwater flow could potentially also be interpreted from information in the MOECC's water well records.	
Information about well construction and well / aquifer yield (including recovery) from all available technically appropriate (representative) domestic wells up to one kilometer and at least 500 m from the site is evaluated in the report. At least one of the wells (*test well*) used in this evaluation is shown to represent site specific conditions, exhibit future well construction specifications and meet Ontario Regulation 903 requirements. This well is preferably located on-site. However, a nearby accessible well of known and representative construction may be located on an adjacent property and shown to be suitable for this assessment. Specific capacity is considered the most appropriate well yield parameter to evaluate in this analysis.	
The report demonstrates that future water wells can be pumped at or above the minimum test rate specified in the provincial guidelines. Where local well yields are found to be poorer as per the above analysis, a full pumping and recovery test and interference analysis may be required from an on-site or representative off-site well. Further consultation is highly recommended.	
The report demonstrates that the *test well* fully recovers during a 24-hour pumping cycle.	
Information from the owners of representative private wells in the vicinity of the site about their experience with well yield vs demand, groundwater levels, well replacement / repair etc. are evaluated in the report. [3]	
The report describes and evaluates those land uses that could affect well yield within a minimum of 500 m from the site; and accounts for this in the groundwater quantity assessment.	

[3] Documentation (staff ID, dates, method of contact, sample questionnaire etc.) is provided to outline the efforts taken to contact adjacent land owners and obtain study participation.

Groundwater Quality Assessment	
Field data is provided for raw groundwater samples from the *test well*. At minimum, field parameter measurements are to include: residual chlorine, pH, temperature, conductivity, dissolved oxygen, turbidity, colour, alkalinity and a hydrogen sulphide odour test. Where detected, hydrogen sulphide is also measured in the field. Methodologies for the measurement of field parameters are described in the report in reference to specific industry standards including field equipment make / model and calibration outcomes.	
Original laboratory reports are provided for raw groundwater samples from the *test well*. Lab analyses / calculations are provided for the common 'subdivision suite' of parameters including those listed in Table 1 of Procedure D-5-5; and fluoride, phenols, tannin & lignin, total kjeldahl nitrogen (TKN), organic nitrogen, phosphate and all naturally occurring dissolved heavy metals with provincial standards, objectives or guidelines (i.e. Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Uranium and Zinc).	
Methodologies for the collection and preservation of samples are described in the report in reference to specific industry standards including bottle types, filtration, preservation / treatment, holding times and temperature.	
Where TDS values are high, the report includes written rationale, with supporting analyses, that corrosion, encrustation or taste problems will not occur.	
Field data and professional opinion indicates that chlorine residuals were zero at the time of sampling; and that raw water turbidity is acceptable.	
The report explains how raw groundwater quality meets the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG) and/or is within the provincial treatability limits for aesthetic/operational parameters.	
Where raw water quality parameters exceed the Ontario Drinking Water Objectives and Guidelines but are within the D-5-5 reasonable treatment limits, water treatment recommendations are discussed.	
Where raw water quality parameters exceed the Ontario Drinking Water Objectives and Guidelines **and** the D-5-5 reasonable treatment limits, water treatment recommendations are discussed; and a favorable feasibility assessment is provided to explain the financial and maintenance efforts that would be required by future home owners if development proceeds via treatment.	
Where any health related parameters are found to exceed the Ontario Drinking Water Standards, development would not proceed based on test well construction specifications. * Other well construction specifications and /or re-sampling efforts could be explored. For all exceedances, consultation with the CA and municipality is required.	
Information from the owners of representative domestic wells in the vicinity of the site about their experience with well water quality are evaluated in the report. [(3)]	
The report describes and evaluates those land uses that could affect groundwater quality within a minimum of 500 m from the site; and accounts for this in the groundwater sampling program.	

[(3)] Documentation (staff ID, dates, method of contact, sample questionnaire etc.) is provided to outline the efforts taken to contact adjacent land owners and obtain study participation.

Individual On-site Sewage Systems: Water Quality Impact Risk Assessment (Procedure D-5-4)	
General Evaluation	
Representative background nitrate (as nitrogen) levels from the receiving groundwater and a description and justification of the sampling rationale and methodologies are presented. Background nitrate addresses D-5-4 guidance. If existing domestic wells are considered representative of the receiving groundwater, a suitable rationale is provided.	
The report demonstrates that the location of future septic systems is not obviously hydrogeologically sensitive (i.e. no karst, fractured bedrock exposed at surface, areas of thin soil cover, or areas with highly permeable soils). Simple justification is given based on appropriate technical information and analyses (e.g. airphotos, regional geological mapping, water well records etc.) Current Geological information, including karst and bedrock outcrop mapping, is available here: http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth. Overburden isopach data is available from the Ontario Geological Survey's GIS data-release associated with Aggregate Resources Inventory Paper, ARIP 189: http://www.geologyontario.mndmf.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=ARIP189	
Where soil depths are likely less than two (2) metres, simple on-site soil depth testing information, including photographs are provided and evaluated in the report.	
Where karst is likely present, such as along the eastern boarder of Lanark County, evidence of complete on-site terrain characterization, including photographs, is provided and evaluated in the report. The CA was consulted when determining the field program for this work.	
Where highly permeable soils are likely present, soil profiles and grain size analyses are provided and evaluated in the report.	
Where obviously hydrogeologically sensitive terrain is found on-site, best management practices that would be prescribed in the development agreement or site plan agreement to reduce the risk of impacts to on-site and off-site water wells, including but not limited to the following, are prescribed in the report recommendations: locating wells up-gradient from septic systems; increased casing lengths; increased separation distances between all down-gradient water wells and septic systems; tertiary septic systems with nutrient reduction technologies; separation of septic systems from constraints; etc. *	
If constraints that affect the location of septic systems and water wells exist on-site, then a lot layout plan that includes these constraints (hydrogeologically sensitive terrain, hazard set-backs, MDS set-backs etc.), the proposed septic system locations and the proposed water wells locations is provided.	
All field methods are described in the report and meet standard industry practice.	
Water Quality Impact Risk Analysis: Three-Step Assessment Process	
If lots are one hectare or greater and the site does not exhibit elevated nitrate levels or hydrogeologically sensitive terrain then no additional work is required.	
If lots are less than one hectare but are underlain by ten metres or more of massive clay (or sediment of similar low hydraulic conductivity), then no additional work is required.	

If lots are less than one hectare and do not exhibit elevated nitrate levels or hydrogeologically sensitive terrain, then a predictive contaminant attenuation assessment is provided as per Procedure D-5-4. The available water surplus, to be used in the assessment, can be obtained for site specific soils and local climate data from Environment Canada.	
Conclusions and Recommendations	
Substantiated professional conclusions, which reference key study findings, are provided in the report and stipulate that the proposed development will have no adverse impact on the reasonable use of groundwater on existing and future adjacent properties.	
A list of informative findings and recommendations, which can be reproduced in the development agreement or site plan agreement, is provided in the report. Recommendations include: OWTS location constraints; well and OWTS location, design and construction requirements; drilling supervision requirements; well water treatment recommendations; best management practices for water wells and OWTS; requirements for earth energy systems; warnings about hydraulic fracturing; reference to a constraint map etc.	

** Please note that the conservation authority will indicate that the on-site conditions do not address provincial guidance where the report recommends locating future on-site wastewater treatment systems on or adjacent to obviously hydrogeologically sensitive terrain; and / or where the report recommends treatment of aesthetic or operational parameters which were measured above the provincial treatability limits.*

Dated: _____ Signature:_____

(indicate **NA** if not applicable)

Consultant's Screening Checklist for **Hydrogeological Reports Submitted** in Support of Subdivision Plan Application Approval within the **County of Lanark**, Ontario

Overview

The Mississippi Valley and Rideau Valley Conservation Authorities, through a Memorandum of Understanding with the County of Lanark, provide technical advice to the municipal approval authority on hydrogeological reports prepared in support of privately serviced development applications.

Relevant Policies and Guidelines

The Conservation Authorities' technical advice informs local municipalities and the County about whether or not the hydrogeological reports address provincial guidance established in the following documents:

1. **Provincial Policy Statement,** Section 2.2 (Water), March 2005.

2. ***Procedure D-5-4, Technical Guideline for Individual On-Site Sewage Systems, Water Quality Impact Risk Assessment (MOE, August 1996);***

   Procedure D-5-4 "applies to the combined or total impact on groundwater of a development proposal of more than five individual on-site wastewater treatment units"; and "to residential, commercial and industrial proposals which use individual on-site sewage disposal systems for the treatment of domestic waste."

   "Although [the MOE did not] normally review development proposals consisting of 5 or fewer lots, municipalities are encouraged to retain, on their behalf, professionals with demonstrated expertise in hydrogeology with emphasis on development on private services, to review studies prepared in accordance with this Guideline. Municipalities are also encouraged to implement the provisions of this guideline in their consideration of developments by consent or severance."

3. **Procedure D-5-5, Technical Guideline for Private Wells, Water Supply Assessment (MOE, August 1996);**

   "The guideline applies to all development proposals for residential development involving individual well water supplies. Development agreements between the proponent and the municipality ... shall be used to bind development to the recommendations of approved hydrogeology studies." "The guideline also applies to developments for which a plan of condominium is required and to industrial, commercial or institutional developments where water is used for human consumption."

   Procedure D-5-5 indicates that "[although the MOE did not] normally review development proposals consisting of five or fewer private residences, the Ministry recommends that supplies serving five or fewer private residences should use the ODWOs to ensure the quality of drinking water. This recommendation may apply to development by consent or at the official plan amendment stage..." "Where development by severance is considered, determination of the availability of a potable water supply should be made as early as possible in the severance approval process."

4. Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG) contained in ***Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines*** (MOE 2003, Revised June 2006).

- *Applicants are strongly encouraged to ensure that meaningful pre-consultation occurs prior to the filing of a formal application with the approval authority.*
- *This checklist summary is derived from the requirements in Procedures D-5-5 and D-5-4; in no way is this document intended to replace or supersede the technical guidance in Procedures D-5-5 and D-5-4.*
- *Note: Current industry standards are expected to be applied.*

FILL OUT CHECKLIST ON FOLLOWING PAGE

Sign Off

This confirms that the report submitted in support of the application addresses provincial policy and has been undertaken based on the applicable provincial guideline.

Name of applicant | Cty. File No. |

Name of consulting firm |

Name of responsible professional |

Professional Designation | *(in good standing)*

Signature of responsible professional |

Date |

*** THIS FORM MUST BE ATTACHED TO THE REPORT SUBMITTED TO THE COUNTY.**

Consultant's Screening Checklist for **Hydrogeological Reports Submitted** in Support of Subdivision Plan Application Approval within the **County of Lanark**, Ontario

*	A statement of professional qualifications is provided in the report.	
Water Supply Assessment (Procedure D-5-5)		
1. Water Quantity Assessment		
1a	Water well records for the area around the site are provided, ***mapped and analysed**** in the report.	
1b	Technically appropriate hydrogeological cross-section(s) of the site is provided.	
1c	The report contains a discussion (conceptual model) of ***regional and site geology**** and hydrogeology (aquifer characteristics, groundwater flow regime, recharge and discharge areas, interaction with local surface water features, etc.) and provides all ***related mapping****.	
1d	A minimum number of technically appropriate test wells were used in the investigation; corresponding well logs and discussion are provided.	
1e	All test wells conform to O. Reg. 903, were drilled ***under the supervision of a professional geoscientist****, and are typical of wells proposed for the development.	
1f	***Aquifer testing methodologies are described in the report and meet standard industry practice.****	
1g	Test wells were pumped at or above the minimum rate and duration.	
1h	Raw (field) data and ***technical analyses**** are provided for (aquifer) pumping and recovery testing; and related observation well monitoring.	
1i	Analyses are provided to address the long-term safe yield of the aquifer and long-term sustainability of the proposed 24-hour pumping cycles; and for any potential supply interference.	
2. Water Quality Assessment		
2a	Field data, original laboratory reports and technical analyses are provided for at least two raw water quality samples from each test well. Field data and professional opinion indicates that chlorine residuals were zero at the time of all sampling; and that ***raw water turbidity**** is acceptable.	
2b	***Water sampling methodologies and analyses are described in the report and meet standard industry practice*;***	
2c	Lab analyses are provided for the common 'subdivision suite' of analyses, including: ***fluoride, hydrogen sulphide, phenols, tannin & lignin, total kjeldahl nitrogen, organic nitrogen and hydrogen sulphide****. High TDS values require written rationale, with ***supporting analyses****, that corrosion, encrustation or taste problems will not occur. Lab analyses should also include standard ***heavy metals**** (i.e. arsenic, cadmium, lead, mercury, uranium etc.)	
2d	Raw water quality from each well meets the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG) and/or is within the provincial treatability limits for aesthetic/operational parameters.	
2e	Where raw water quality parameters are within the D-5-5 treatment limits, water treatment recommendations are discussed and treatment interferences are explained. (indicate *NA* if not applicable)	
2f	The report describes land uses within a minimum of 500 m of the site; provides related documentation; and addresses the potential adverse impact of former or current adjacent land uses.	
2g	A well and septic owner survey and groundwater sampling results from representative raw well water are presented and evaluated in the report.	
Individual On-site Sewage Systems: Water Quality Impact Risk Assessment (Procedure D-5-4)		
3. General Evaluation		
3a	Representative background nitrate (as nitrogen) levels from the receiving groundwater and a description of the ***sampling rationale and methodologies*** are presented. Background nitrate does not exceed the ODWSOG. All nitrate levels are explained.	
3b	The report demonstrates that the site is not obviously hydrogeologically sensitive (i.e. no karst, fractured bedrock exposed at surface, areas of thin soil cover, or areas with highly permeable soils). ***Detailed justification is given based on appropriate technical information and analyses (e.g. test pit logs, borehole logs, grain-size analyses, regional geologic mapping, water well record analyses, hydrogeological conceptual model, terrain unit mapping etc.)*** *	
3c	***All field methods are described in the report and meet standard industry practice*.***	
3d	***A composite map of site constraints and proposed on-site wastewater treatment system locations and setbacks is provided*.***	
4. Water Quantity Impact Risk Analysis: Three-Step Assessment Process		
4a	**Step One: Lot Size Considerations** — No additional analysis, beyond items 3a to 3d above, is required if proposed lots are an average of 1 hectare in area and no lots are less than 0.8 hectares in area. (indicate *NA* if not applicable)	
4b	**Step Two: System Isolation Considerations** — A system isolation assessment was provided in the report. *this line of study is rarely used and the scope of related work should be site specific. Pre-consultation is highly recommended*. (indicate *NA* if not applicable)	
4c	**Step Three: Contaminant Attenuation Considerations** — A contaminant attenuation assessment was provided in the report. (indicate *NA* if not applicable)	
4c.1	A monitoring-based contaminant attenuation assessment was provided in the report. *this line of study is rarely used and the scope of related work should be site specific. Pre-consultation is highly recommended* (indicate *NA* if not applicable)	
4c.2	A predictive contaminant attenuation assessment was provided in the report and included the following items. (indicate *NA* if not applicable)	
	4c.2.1. The report considers a nitrate loading of 40 mg/L; and only dilution was considered as the attenuation mechanism.	
	4c.2.2. Site specific water surplus values, based on local climate station data, were provided in the report;	
	4c.2.3. ***Water surplus values and site infiltration factor(s) were based on areas with discrete combinations of overburden, topography, and land cover (impervious areas, type of vegetation, etc) and are accompanied by a terrain unit and topographic mapping with post-development land cover*.***	
	4c.2.4. The assessment makes use of no more than 1000 L/day per lot of on-site wastewater treatment system (OWTS) flow;	
	4c.2.1. The assessment includes an explanation of the validity and limitations of the model used to determine the nitrate attenuation at the property boundaries; and a sensitivity analysis of the model.	
4c.3	A predictive contaminant attenuation assessment, such as that in 4c.2, for an industrial/commercial development was provided in the report. (indicate *NA* if not applicable)	
Conclusions and Recommendations		
5a	A summary of conclusions and professional assertions that speak to the key areas above are provided in the report.	
5b	A list of recommendations, which will be reproduced in the subdivision agreement, is provided in the report. Recommendations should speak to: well and OWTS location, design and construction requirements; drilling supervision requirements; well water treatment recommendations, best management practices for water wells and OWTS; requirements for earth energy systems if applicable; provision of a final (original) digital report; etc.	

From: Sam Poole
Sent: March 4, 2025 10:33 AM
To: Koren Lam
Cc: Sean Derouin
Subject: RE: 09-T-25001 - Beckwith - Douglas Landing Subdivision - Notice of Complete Application & Consultation

Good Morning Koren,

I have reviewed the documents for the Douglas Landing development. Based on the SWM Report proposed peak flows will be equal or less than existing going into the Munro Municipal drain. There is only one County drainage Structure on Appleton Side Road which the Munro Drain crosses. The proposed peak flows should not adversely impact the culvert's ability to function in a flood event.

Public Works wouldn't have any concerns with the below noted development, it appears there will be no impact to the County Road network or drainage.

Thanks!

Sam Poole
Senior Technologist
Public works

Lanark County
99 Christie Lake Road
Perth, ON K7H 3C6
613-267-4200 x3116
www.lanarkcounty.ca

From: Koren Lam <klam@lanarkcounty.ca>
Sent: February 28, 2025 2:49 PM
To: Sam Poole <spoole@lanarkcounty.ca>
Subject: RE: 09-T-25001 - Beckwith - Douglas Landing Subdivision - Notice of Complete Application & Consultation

Thanks Sam. You as well and have a great weekend!

Koren

From: Sam Poole <spoole@lanarkcounty.ca>
Sent: February 28, 2025 1:08 PM
To: Koren Lam <klam@lanarkcounty.ca>

Koren Lam

From: Diane Reid <dreid@mvc.on.ca>
Sent: April 24, 2025 2:16 PM
To: Koren Lam
Cc: Zeyad Hassan; mayo.adenlolu@zdevelopment.ca; Mike Dwyer; Jacob Perkins; Beckwith Planner
Subject: RE: 09-T-25001 - Beckwith - Douglas Landing Subdivision - Notice of Complete Application & Consultation
Attachments: 09-T-25001 Douglas Landing - MVCA Comment Letter_Apr 2025.pdf; MVCA Technical Review Memo_Douglas Subdivision_EIS Review 1_Apr 2025.pdf; MVCA Technical Review Memo_Douglas Subdivision_SWMP Review 1_Apr 2025.pdf

Hi Koren,

Attached are MVCA's comments on the subject application.

Regards,
Diane Reid

Conservation Partners
Partenaires en conservation

Mississippi Valley Conservation Authority

Rideau Valley Conservation Authority

09-T-25001

April 24, 2025

Koren Lam
Lanark County
99 Christie Lake Road
Perth ON K7H 3C6

Dear Ms. Lam,

Re: 09-T-25001 – Douglas Landing Subdivision
Lot 25, Con 12, Township of Beckwith
9243 McArton Rd

The Mississippi Valley Conservation Authority (MVCA) has been in receipt of the following documents for review:

- *Draft Plan of Subdivision* (Fairhall Moffatt & Woodland, no date);
- *Environmental Impact Study* (EIS) (Pinchin, Jan 13, 2025)
- *Preliminary Stormwater Management Report* (Tatham Eng, Jan 13, 2025)
- *Geotechnical Investigation* (Pinchin, Jan 21, 2025)

We have reviewed the above reports in the context of the following:

- Section 1.6.6 *Stormwater* & 3.1 *Natural Hazards* of the *Provincial Policy Statement* (PPS, 2020) under Section 3 of the Planning Act (Advisory Role);
- MVCA's Ontario Regulation 153/06 - *Development, Interference with Wetlands and Alteration to Shorelines and Watercourses*, issued under Section 28 of the Conservation Authorities Act;
- The Mississippi-Rideau Source Protection Plan (2014, revised 2022)

The objective of MVCA's natural hazards review is to ensure that the control of *flooding* and *erosion* are not impacted by the proposed development. This includes impacts to wetlands, watercourses, slope stability, and unstable soils.

PROPOSAL
According to the information provided, the purpose of the subject application is to obtain approval for a plan of subdivision to develop the subject lands (22 ha) with a total of 23 residential units.

10970 Hwy 7
Carleton Place, ON K7C 3P1

Tel: 613-253-0006
Fax: 613-253-0122

PROPERTY CHARACTERISTICS
In reference to the EIS, the following features exist on the subject property:

(3) Watercourses: The EIS identified one intermittent watercourse and two manmade drainage features as follows:

- (1) intermittent watercourse flows through the central wetland
- (2) man-made drainage features; one flows through the subject site and conveys water southward to the second drainage feature that is located off-site.

Non-evaluated Wetlands (Regulated by MVCA): Using Ontario Wetland Evaluation System (OWES) criteria, the EIS identified (3) non-evaluated wetlands on the subject property, as follows:

- (1) large wetland located in the central portion of the site
- (1) smaller wetland in the SE corner of the site
- (1) wetland that surrounds the aforementioned intermittent watercourse that flows through the central wetland
- All identified wetlands are regulated by MVCA.

Organic soils: Soils mapping from the Ontario Geologic Survey shows organic soils in the area of the wetlands.

REVIEW

NATURAL HAZARDS (ADVISORY REVIEW)
The objective of MVCA's natural hazards review is to ensure that the control of *flooding* and *erosion* are not impacted by the proposed development. This includes impacts to wetlands, watercourses, slope stability, and unstable soils. The **wetlands, watercourses** and **organic soils** are relevant to MVCA's advisory review.

Wetlands
This EIS has identified (3) wetlands on the subject property.

MVCA's Biologist has reviewed the EIS and provided comments. Of particular note, the following was identified in the review:

- Six of the proposed lots (# 5, 6, 7, 8, 10, and 20) show portions of the proposed house and/or septic system within 30 m of the wetlands. Under MVCA Regulation Policies, reduced wetland setbacks are generally only considered if there is insufficient area to achieve a 30 m setback. Sufficient area appears to exist on most of the sites to achieve this setback.

In addition, MVCA's Water Resources Engineer has reviewed the Stormwater Management Report. For the following reasons, they have concluded that the proposed development will change the wetlands drainage areas and hydrologic regime, with direct and indirect impacts to their hydrology:

- The proposed development will change the drainage areas and paths, thereby changing drainage to the local wetlands; and
- one of the proposed dry stormwater ponds (SWMF 2) is proposed to outlet to the central wetland.

Refer to the attached *MVCA Technical Review Memo_Douglas Landing Subdivision_**EIS** Review 1.pdf* and *MVCA Technical Review Memo_Douglas Landing Subdivision_**SWMP** Review 1.pdf* for additional details and recommendations.

Note: The EIS has refined the boundary of the wetlands, compared to MVCA mapping.

Watercourses
The EIS has identified (1) intermittent watercourse, and (2) drainage features.

MVCA's Biologist has reviewed the EIS and provided comments. Of particular note, page 19 of the EIS references a potential watercourse realignment. No additional information or discussion was provided.

Refer to the attached *MVCA Technical Review Memo_Douglas Landing Subdivision_EIS Review 1.pdf* for details and recommendations.

Organic Soils
Soils mapping from the Ontario Geologic Survey shows organic soils in the area of the wetlands. It is provincial policy that: *Development shall generally be directed, in accordance with guidance developed by the Province (as amended from time to time), to areas outside of: c) hazardous sites* (Provincial Policy Statement 2020, Section 3.1.1.). The document entitled *Understanding Natural Hazards* (Ministry of Natural Resources, 2001) was prepared as a guide to identify and provide direction to address these hazards. This document identifies Organic Soils as a *hazardous site*. Due to the poor drainage and unstable characteristics of these soils, they are not suitable for development. Therefore, development should be directed outside of these areas unless sufficiently mitigated. Refer to the *Geotechnical Investigation* for proposed mitigation.

Stormwater Management Report
The conceptual SWMP has been reviewed by MVCA's Water Resources Engineer, with a focus on stormwater quantity management and any potential flooding and erosion impacts on receiving watercourse(s), and ultimately the Mississippi River.

The stormwater management criteria for the subject site includes controlling the post-development peak flows to the pre-development rates for all storms up to and including 100-year storm events.

The site is proposed to be serviced by two dry ponds (SWMF1 and SWMF 2) and enhanced grass swales within the proposed municipal ROW. Both dry ponds are proposed to outlet to an existing ditch, with SWMF2 directing outflows first to the wetland and ultimately to the ditch. An area of approximately 2.7 ha would have uncontrolled run-off directed to the external agricultural lands, and an area of approximately 11.0 ha is proposed to drain uncontrolled to the existing ditch.

Refer to the attached *MVCA Technical Review Memo_Douglas Landing Subdivision_SWMP Review 1.pdf* for details of MVCA's review. Of particular note, on-site assessment of the receiving watercourses/drainage features is required before MVCA can provide further comments on quantity control and the proposed increase in drainage area (22%) to the downstream outlet2 ditch.

MISSISSIPPI-RIDEAU SOURCEWATER PROTECTION
No areas or matters of significance under the Mississippi-Rideau Source Protection Plan have been identified.

MVCA ONTARIO REGULATION 41/24 (Regulatory)

Pursuant to ONTARIO REGULATION 41/24, *Prohibited Activities, Exemptions and Permits*, written permission is required from MVCA prior to the following, on subject property:

- any interference (including outlets, regrading activity, development) within the (3) wetlands, or within 30 m thereof (Regulation Limit); and
- any alterations to the shoreline of regulated watercourses (including crossings, outlets, and realignments)

Notes:

- Under MVCA Regulation Policies, a reduced 30 m setback from wetlands is generally only permitted if there is insufficient area to achieve the 30 m.
- The EIS has identified (2) manmade drainage features on-site. However, it is unclear if these features meet MVCA's definition of a regulated watercourse. MVCA will visit the site to assess this.

RECOMMENDATIONS AND CONCLUSIONS

Prior to moving forward, MVCA recommends the following:

1. Conduct a Wetland Water Balance Risk Evaluation. MVCA will review the results of this assessment to determine if further analysis is required (i.e. Hydrologic Impact Assessment/Water Balance Calculation).

2. Address all recommendations in MVCA's review of the Stormwater Management Plan (refer to the attached *MVCA Technical Review Memo_Douglas Landing Subdivision_SWMP Review 1.pdf*. In addition, please provide LID techniques on-site to help maintain the local hydrologic conditions.

3. Address all recommendations in MVCA's review of the Environmental Impact Statement (refer to *MVCA Technical Review Memo_Douglas Landing Subdivision_EIS Review 1.pdf)*

Additional comments and recommendations will be provided once the above is addressed. In addition, further comments regarding stormwater quantity control will be provided following MVCA's on-site assessment of the receiving drainage features/watercourses.

If you have any questions, please contact the undersigned.

Yours truly,

Diane Reid

Diane Reid
Environmental Planner

cc. Enam Hoque, Township of Beckwith, email

Mississippi Valley Conservation Authority

Technical Review Memorandum

To:	Diane Reid, Environmental Planner
From:	Kelly Stiles, Biologist
RE:	EIS for Douglas Landing, 9243 McArton Rd, Beckwith Township
MVCA File No.:	09-T-25001
Munic. Ref. ID.:	09-T-25001
Date:	April 22, 2025

Mississippi Valley Conservation Authority (MVCA) has been circulated the following revised document in support of the development:

- "Environmental Impact Study, 9243 McArton Road, Beckwith Township, Ontario". By Pinchin, January 13, 2025.

Mississippi Valley Conservation Authority (MVCA) has been circulated the above noted report for review in terms of MVCA Regulations and Provincial Planning Policy for natural hazard concerns. The scope of the natural hazards review includes flood plain, erosion, wetlands, unstable slopes, and unstable soils.

The purpose of MVCA's review is to:

- Ensure that the site visit(s) and the submitted report(s) are complete and provide all supporting information required to conduct the technical review.
- Ensure the report meets the policy requirements of the MVCA.
- Provide clear informative documentation ensuring that all related impacts have been addressed; and that suitable mitigation is proposed.

<u>Proposal Summary</u>

The proposal is to develop the 21.9 ha site into 23 rural estate lots (proposed lot sizes vary from 0.40 – 1.43 ha), two stormwater blocks, and an access road. The property currently includes agricultural crop fields, forest cover, and two wetland features that outlet to the Munro Municipal Drain.

A site visit was conducted on November 6, 2020 for the EIS (Pinchin, 2025). Appended to the Pinchin Report is a Fish Habitat Assessment by Geofirma, who conducted field work in April and May, 2017 to support the initial severance of the site. MVCA notes that the EIS field work was conducted outside of the growing season and that the discussed EIS observations are almost 5-years old, while the fisheries' observations are now 8-years

old. For MVCA's review, an updated report is not essential; however, we note that the Ministry of Environment, Conservation and Parks (MECP) may require an addendum to the EIS to assess Species at Risk (SAR) updates.

Watercourses and Wetlands

The Geofirma Report (2017) details the watercourses within and adjacent to the site. They are predominately headwater drainage features associated with the Munro Municipal Drain which flows westward from the site towards the Mississippi River. Geofirma Figure A.2 and Pinchin Figures 2 and 3 illustrate the location of an abandoned channel that historically connected the south of the site to the northern MMD1 branch through the eastern forest community. Figure A.2 also shows a watercourse (MMD2-H1) flowing from north central, through the wetland community, to the MMD2 channel that is parallel to the southern parcel boundary. When there is sufficient water in the off-site channels, it is possible for a number of fish species to inhabit the drain, however "the MMD2 portion is not considered fish habitat due to absence of fish observed and the poor-quality habitat… However, it does contribute to base flow to downstream potential fish habitat."

Figure 5 of the Pinchin Report shows that the road alignment is intended to cross the MMD2-H1 water feature upstream of the central wetland. Section 7 discusses that "a re-alignment approach is being pursued to address this." However, while the Pinchin EIS Section 7 discusses the importance of "ensuring hydrological continuity of the watercourse, maintaining a natural flow patterns and minimizing disruption to the community", it does not go into further details.

The Pinchin Report (2025) identified and delineated two wetland communities within the property (Figures 3 to 5). There is a large specked alder mineral deciduous swamp in the south-central portion of the site that has a reed-canary grass mineral meadow marsh within it. The marsh habitat is associated with the intermittent watercourse that flows through the property from north to south (MMD2-H1). There is a second smaller speckled alder deciduous swamp community in the south-east corner of the site. Douglas Road currently ends at the edge of this smaller wetland community and will require extension to the proposed site access road location. The site access road is proposed to be located within an upland forest community in the eastern third of the site between the two swamp habitats, wraps around the north of the central wetland to access the north and west parts of the parcel in the western agricultural third of the site. The proposed road alignment passes through MVCA's Regulation Limit (30 m extent from wetland) in two locations; as it passes between the northern extent of the central wetland, and the northern parcel boundary; and near the site entry where the right of way zone is partially within the 15 m setback to the south-east swamp.

The Pinchin Report (2025) recommends a 15 m setback to the wetland features and has proposed building footprints, and two septic bed locations for each lot. MVCA's 30 m Regulation Limit (RL) is not currently included on the submitted figures.

Report Conclusions

Section 7.0 discusses recommended mitigation measures such as sediment and erosion controls, and "a minimum 15 m setback with exclusion fencing installed is recommended to protect the watercourses and wetlands prior to tree removal and other construction activities." "Encroachment into the wetland buffer is anticipated. Restoration planting within buffer on the Site is recommended to compensate for the encroachment."

Section 8.0 concludes that "with the above recommendations considered and diligently implemented on the Site, no adverse negative impacts on the ecological integrity of the adjacent natural heritage features will result from the proposed development."

MVCA's Review & Recommendations

Six lots (# 5, 6, 7, 8, 10, and 20) have portions of the proposed house and/or the septic bed within the 30 m RL. The alternative septic system, for several lots, is also within the 30 m RL.

Two onsite wetlands meet MVCA's definition of a regulated wetland, with a 30 m RL. Any interference within the RL require written permission from MVCA. Reduced wetland setbacks are generally only considered if there is insufficient area to achieve the 30 m setback. However, based on our review of the application, it appears that most of the lots have space to achieve the 30 m setback. MVCA recommends the following prior to moving forward:

1) An updated Concept Plan that shows:
    a. MVCA's Regulation Limit (i.e. 30 m extent from wetland boundary)
    b. Maximize the setback from the wetland, in an effort to develop outside the 30 m Regulation Limit.
2) Elaborate on the comment in Section 7.0 that "Encroachment into the wetland buffer is anticipated." Clarify if this refers to the EIS's recommended 15 m buffer, or to MVCA's 30 m RL?
3) Figure 5 of the Pinchin Report shows that the road alignment is intended to cross the MMD2-H1 water feature upstream of the central wetland. Elaborate on the comment in Section 7 that indicates "a re-alignment approach is being pursued to address this."
4) Clarify if the exclusion fence recommended in Section 7.0 is a temporary mitigation measure for protecting the wetlands during site development, or if

this measure is recommended for long-term mitigation of site use impacts such as rear yard creep.

Kelly Stiles, MVCA Biologist

Mississippi Valley Conservation Authority

Technical Review Memorandum

To:	Diane Reid, Environmental Planner
From:	Elyse Dickson, Water Resources Engineer
RE:	**SWM Engineering Review of the Draft Plan of Subdivision submission for Douglas Landing**
MVCA File No.:	09-T-25001
Munic. Ref. ID.:	
Date:	**March 25, 2025**

Mississippi Valley Conservation Authority (MVCA) was circulated the following reports regarding the above draft plan of subdivision submission:

- Douglas Landing Subdivision – Preliminary Stormwater Management Report, prepared by Tatham Engineering, dated January 13, 2025; and
- Revised Geotechnical Investigation – Proposed Residential Development, prepared by Pinchin dated January 21, 2025.

The above was reviewed with a focus on risks associated with natural hazards and any potential impact on the receiving wetland and downstream receiving watercourse, Mississippi River. This memorandum highlights key observations and comments for consideration by the approval authority.

Location

The site is approximately 22.2 ha in size and is located north of the west end of Douglas Side Road, west of the Ridgemont Subdivision, south and east of active agricultural lands, north of densely forested wetland areas. The proposed development includes constructing low rise residential dwellings, municipal right-of-way, and SWM blocks. The site is within the Mississippi River watershed.

Stormwater Control Criteria

The stormwater management criteria applied in the proposed SWM design is to control 2 to 100-year post-development peak flows to the pre-development levels.

Servicing and Stormwater Management Report Summary

Existing conditions: The site consists of woodland and wetland and is relatively flat, with a drainage divide across the site. The northwest corner of the site slopes northwest to an external agricultural field (Outlet 1), and the remainder of the site slopes towards the wetland central to the subject lands. The wetland outlets to an existing ditch (Outlet 2) tributary to the Munro Municipal Drain and ultimately to the Mississippi River.

Proposed stormwater management: The site is proposed to be serviced by two dry ponds and enhanced grass swales within the proposed municipal ROW. Both dry ponds are proposed to outlet to the existing ditch, with SWMF2 directing outflows first to the wetland and ultimately to the ditch. An area of approximately 2.7 ha would have uncontrolled run-off directed to the external agricultural lands, and an area of approximately 11.0 ha is proposed to drain uncontrolled to the existing ditch.

Post-development conditions: Catchment 201, primarily rear yards and roofs, is directed uncontrolled to Outlet 1. Runoff from Catchment 202 will be conveyed to a proposed dry pond (SWMF 1) before discharging to the existing ditch south of the site (Outlet 2). Runoff from Catchment 204 will be conveyed to a proposed dry pond (SWMF 2) before discharging to the wetland which outlets to the existing ditch south of the site (Outlet 2). The proposed SWM pond controls have not been identified. Both SWM ponds will overcontrol peak flows to account for the uncontrolled drainage area sent directly to the wetland (Catchment 204).

Observations

The following is noted from review of the submission:

1. Probable bedrock surface encountered at approximately 0.3 – 0.6 m below existing ground level.
2. Glacial till encountered underlying the surficial organics in all of the boreholes and extended down to the underlying probably bedrock surface. Material ranged from silty sand containing some gravel and some clay to silty sandy gravel containing trace clay.
3. Proponent drawing(s) show:
    a. Central unevaluated wetland with a proposed 15 m setback identified.
    b. Two existing outlets, one to the NW corner of the site receiving 6.2 ha (Catchment 101), and the second to the existing wetland in the middle of the site receiving 16.0 ha (Catchment 102).
    c. Four proposed drainage areas: 201 (2.7 ha) draining uncontrolled to Outlet 1, 202 (4.6) draining to SWMF 1 to Outlet 1, 203 (11.0 ha) drainage uncontrolled to wetland and Outlet 2, and 204 (3.9 ha) drainage to SWMF 2 to wetland and Outlet 2.
    d. ROW enhanced drainage swales conveying runoff from Catchments 202, 203, and 204 to their respective outlets.
4. Proponent post-development flows calculations with controls are as follows. Note, have modelled the 3 hour Chicago, 6 hour Chicago and 24 hour SCS II storms using Macdonald Cartier International Airport Climate station.

Table 3: Proposed Condition Peak Flow Summary – Outlet 1

DESIGN STORM	CATCHMENT 201 2.7 ha (m^3/s)		
	3-hr CHI	6-hr CHI	24-hr SCS Type II
25mm	0.014 (0.026)	-	-
2-Year	0.027 (0.051)	0.031 (0.059)	0.047 (0.090)
5-Year	0.051 (0.098)	0.058 (0.112)	0.084 (0.162)
10-Year	0.07 (0.135)	0.079 (0.153)	0.111 (0.216)
25-Year	0.096 (0.188)	0.108 (0.210)	0.149 (0.292)
50-Year	0.118 (0.232)	0.132 (0.258)	0.179 (0.352)
100-Year	0.143 (0.280)	0.159 (0.311)	0.211 (0.415)

Notes: (0.026) refers to the existing condition peak flow rate.

Table 4: Proposed Condition Peak Flow Summary – Outlet 2

DESIGN STORM	CATCHMENT 202 4.6 ha (m^3/s)			CATCHMENT 203 11.0 ha (m^3/s)			CATCHMENT 204 3.9.0 ha (m^3/s)			TOTAL OUTLET 2		
	3-hr CHI	6-hr CHI	24-hr SCS Type II	3-hr CHI	6-hr CHI	24-hr SCS Type II	3-hr CHI	6-hr CHI	24-hr SCS Type II	3-hr CHI	6-hr CHI	24-hr SCS Type II
25 mm	0.000	-	-	0.022	-	-	0.000	-	-	0.022 (0.022)	-	-
2-Year	0.000	0.001	0.001	0.047	0.055	0.089	0.001	0.001	0.002	0.048 (0.049)	0.056 (0.057)	0.090 (0.092)
5-Year	0.001	0.001	0.004	0.096	0.11	0.168	0.002	0.002	0.005	0.098 (0.102)	0.112 (0.117)	0.170 (0.178)
10-Year	0.001	0.003	0.006	0.136	0.155	0.229	0.003	0.005	0.009	0.138 (0.145)	0.157 (0.165)	0.235 (0.245)
25-Year	0.003	0.005	0.009	0.194	0.218	0.316	0.006	0.009	0.015	0.198 (0.208)	0.223 (0.234)	0.327 (0.342)
50-Year	0.004	0.007	0.013	0.242	0.271	0.385	0.009	0.012	0.019	0.248 (0.261)	0.278 (0.292)	0.403 (0.419)
100-Year	0.006	0.009	0.016	0.295	0.331	0.459	0.012	0.016	0.024	0.305 (0.320)	0.341 (0.357)	0.482 (0.501)

Notes: (0.022) refers to the existing condition peak flow rate.

5. The allowable release rates for the site presented in the report are as follows. Note, have modelled the 3 hour Chicago, 6 hour Chicago and 24 hour SCS II storms using Macdonald Cartier International Airport Climate station.

Table 1: Existing Condition Peak Flow Summary – Outlet 1

DESIGN STORM	CATCHMENT 101 6.2 ha (m^3/s)		
	3-hr CHI	6-hr CHI	24-hr SCS Type II
25mm	0.026	-	-
2-Year	0.051	0.059	0.090
5-Year	0.098	0.112	0.162
10-Year	0.135	0.153	0.216
25-Year	0.188	0.210	0.292
50-Year	0.232	0.258	0.352
100-Year	0.280	0.311	0.415

Table 2: Existing Condition Peak Flow Summary – Outlet 2

DESIGN STORM	CATCHMENT 102 16.0 ha (m^3/s)		
	3-hr CHI	6-hr CHI	24-hr SCS Type II
25mm	0.022	-	-
2-Year	0.049	0.057	0.092
5-Year	0.102	0.117	0.178
10-Year	0.145	0.165	0.245
25-Year	0.208	0.234	0.342
50-Year	0.261	0.292	0.419
100-Year	0.320	0.357	0.501

6. In order to achieve the target flow release rate, the SWM report states a total storage of 3,146 m^3 is required on-site.

7. The proponent proposes to:

   a. Outlet uncontrolled rear yard drainage via sheet flow to Outlet 1 (Catchment 201, 2.7 ha, 5% impervious). Peak flows in the post-development scenario are less than pre-development peak flows (Catchment 101, 6.2 ha, 0% impervious).

   b. Install a dry SWM pond (SWMF 1, SW corner) with approximately 2,159 m^3 of active storage at a depth of 0.7 m and 0.3 m freeboard, outletting to the SW corner of the site to Outlet 2. SWMF 1 receives drainage from Catchment 202 (4.6 ha, 15% impervious).

   c. Install a dry SWM pond (SWMF 2, NE of wetland) with approximately 1,216 m^3 of active storage at a depth of 0.95 m and 0.3 m freeboard, outletting to the east edge of the wetland, eventually releasing to Outlet 2. SWMF 2 receives drainage from Catchment 204 (3.9 ha, 8% impervious).

   d. Outlet uncontrolled ROW and lot drainage to Outlet 2 via sheet flow and two overland flow routes (Catchment 203, 11.0 ha, 4% impervious).

   e. Enhanced 0.5 m wide flat bottom grassed swales conveying up to the 100-year

peak flows are proposed along the ROW to the proposed SWMFs and uncontrolled outlets to the wetland.

f. Total peak flows to Outlet 2 in the post-development conditions (Catchment 202, 203, and 204, 19.5 ha, 7% impervious) do not exceed pre-development peak flows (Catchment 102, 16.0 ha, 0% impervious).

g. Proposed storage, conveyance and ponding elevations in the dry ponds and enhanced grassed swales will be confined within the SWM pond blocks and municipal ditches and easement.

Comments

MVCA offers the following comments for your consideration:

1. Given the proposed development will change the wetland drainage areas and hydrologic regime, please provide a Wetland Water Balance Risk Evaluation. MVCA will review the risk assessment to determine the level of study and mitigation measures required.
2. Water quality review, including water being directed to the wetland, is deferred to the municipality.
3. Further assessment of the downstream receivers, by MVCA, is required before MVCA can provide further comments on quantity control and the proposed increase in drainage area (22%) to the downstream outlet2 ditch and further downstream receivers.
4. Please provide a digital copy of the hydrology model for MVCA review alongside a model schematic. MVCA will provide detailed comments on the water quantity control once the model has been provided.
5. It is unclear how the storage volumes for SWMF 2 have been calculated. The volume column appears to be correct based on the accumulated area and depth columns using the average end method, however, the values in the storage volume column do not appear correct. Please review and revise as required for accuracy to ensure the proposed SWM pond blocks have been sized adequately.
6. It is difficult to verify the ditch capacity calculations as the contributing area appears low and is not shown on the proposed drainage plan. Additionally, the 100-year peak flow of 0.296 m^3/s does not appear to have been applied in the ditch capacity calculations as 0.048 m^3/s was used instead. Please review and revise the ditch capacity calculations as required to ensure the full uncontrolled 100-year peak flows from the propose drainage catchments will be fully conveyed within the proposed enhanced grassed swales to the receiving outlets.
7. At the detailed design submission, the following calculations and details will be required.
    a. Permanent erosion control at each outfall demonstrating the proposed protection has been sized to withstand the expected erosive velocities.
    b. Orifice calculations to confirm the discharge from the proposed SWMFs will be

controlled to ensure the total peak flows to each outlet does not exceed the allowable release rates.

c. SWMF drawings including relevant details and cross sections to confirm the stage storage discharge calculations and rating table in the hydrology model.

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive
Ottawa, ON, Canada
K2K 2A9
613.836.1422
ottawa@gemtec.ca
www.gemtec.ca

April 1, 2025

File: 101275.005

Township of Beckwith
2022 Beckwith Park Lane
Carleton Place, Ontario
K7C 3P2

Attention: Enam Hoque, M. Pl. – Planning Administrator

Re: Environmental Impact Study Peer Review
1st Submission Comments
9243 McArton Road, Beckwith Township, Ontario

Please find enclosed, the GEMTEC Consulting Engineers and Scientists (GEMTEC) Peer Review of the Environmental Impact Study (EIS) dated January 13, 2025, for the property referred to as 9243 McArton Road, Beckwith Township, Ontario.

In summary, GEMTEC believes that insufficient data is provided in the EIS to confirm that the proposed project will comply with both the Township of Beckwith Official Plan and the Provincial Planning Statement (2024) policies. Until such time as natural heritage features, including species at risk, are fully characterized and assessed for impacts from the proposed development, the viability of the concept, as currently presented in the EIS, is unclear. Opportunities exist within the EIS to provide further information on the existing conditions and natural heritage features present on the Site, and to provide project and natural heritage feature specific impact assessment and appropriate mitigation measures to limit or otherwise mitigate against environmental impacts to the natural environment.

Sincerely,

Taylor Warrington, B.Sc.
Biologist

TW/DP

Enclosures
N:\Projects\101200\101275.005\05_Technical Work\EIS Peer Review\101275.005_LTR_EIS Peer Review_2025-04-01_Rev0.docx

EIS Section	GEMTEC 1st Submission Comment	Pinchin Response
1.0 Introduction	This section of the EIS provides an overview of the site, proposed project and purpose of the EIS report. This section was completed in general accordance with industry standards.	No response required.
2.0 Overview of Policy Framework	The EIS references the applicable policies for the EIS, and has been completed in general accordance with industry standards.	No response required.
2.1 Provincial Policy Statement	The Provincial Policy Statement, 2020 was replaced with the Provincial Planning Statement on October 20, 2024. GEMTEC acknowledges that there were no significant changes to natural heritage policies between the 2020 and 2024 documents. The EIS should be revised to reference the Provincial Planning Statement, 2024, as it currently references the Provincial Policy Statement. This minor change should be revised throughout the document.	
3.0 Study Methodology	This section of the EIS provides an overview of site methodologies used to complete field investigations and determine evaluation criteria for the natural heritage features within the EIS report. This section was completed in general accordance with industry standards. Overall GEMTEC agrees with the methodologies employed for this EIS.	
3.0 Study Methodology	GEMTEC notes that surveys were completed in general accordance with industry standards, however it appears that the site has only been visited in the fall (November), which generally limits the results and conclusions of the surveys. Additional discussion on any assumptions made or limitations of conclusions with respect to the results presented in the EIS should be discussed.	
3.0 Study Methodology	Additional surveys are recommended in Section 7.0, including breeding bird, bat suitability, amphibian breeding, and basking turtle surveys, which GEMTEC agrees with completing in order to confirm the presence or absence of various natural heritage features as the absence of these studies limits the current report findings and conclusions.	
3.0 Study Methodology	A summary of dates, times and weather conditions for completed surveys in this section would benefit the reviewers understanding of the results and limitations of the scope.	
3.1 Desktop Background Review	A fish habitat assessment report prepared by Geofirma Engineering (2017) is referenced in this section, however no results or data is discussed further. The EIS should include a discussion on whether the results of the Geofirma report are still valid and applicable to the site, or if the site conditions have changed with respect to fish habitat on-site. The EIS does not provide any further discussion on fish habitat on-site or within the study area, this should be added to relevant sections including Existing Conditions, Impact Assessment and Recommended Mitigation Measures.	
4.0 Existing Conditions	This section of the report provides an overview of the property, including a discussion on landforms, soils and geology, and provides results of the field investigations described in Section 3. Overall GEMTEC agrees with the general conclusions and identification of natural heritage features and ecological functions on-site. Specific comments/required clarification are provided as needed below.	
4.0 Existing Conditions	This section should provide additional discussion on fish habitat availability on-site, including comments on the function of HDFs, watercourses, and local wetlands as well as their contribution to collective fish habitat functions.	
4.1 Landforms, Soils, and Geology	Minor error in paragraph two, Beekmantown group instead of Beckmantown Group.	
4.2.1 Vascular Plants	Vegetation surveys for vascular plants were completed on November 6, 2020. This survey data is fairly old, have any updates to vegetation communities been provided since 2020? Have there been any changes to ELC communities or wetlands between 2020 and 2024 when the watercourse assessment was completed?	
4.2.2 Vegetation Communities	This section provided an overview of vegetation communities identified on-site. The application of Ecological Land Classification and the botanical inventory for the site is accurate and sufficiently described to provide the reviewer the necessary information to evaluate the natural environment on-site and within the study area. Overall GEMTEC agrees with the vegetation descriptions, consideration should be given to illustrate the location of soil core samples on the ELC figure, as well as providing a discussion on moisture regimes and drainage patterns to further support the conclusions of upland vs wetland vegetation communities. Inclusion of community areas would provide context to the reviewer that would assist with confirming conclusions related to size criteria (e.g. for significant woodlands and several significant wildlife habitats).	
4.3 Wetland Assessment	This section provided an overview of wetland communities identified on-site. Overall GEMTEC agrees with the assessment of wetlands on-site.	No response required.
4.3 Wetland Assessment	It is noted that soil core samples were taken for each vegetation community to assist with determining upland or wetland communities. Similar to the above comment, consideration should be given to illustrate the location of soil core samples on the ELC figure, as well as providing a discussion on moisture regimes and drainage patterns to further support the conclusions of upland vs wetland vegetation communities.	
4.4 Watercourse Assessment	A field watercourse assessment was completed on November 28, 2024. This is generally late for assessing habitat availability and functions, and the hydroperiod for intermittent features. The EIS should discuss limitations and assumptions made due to the timing of the site investigation.	

EIS Section	GEMTEC 1st Submission Comment	Pinchin Response
4.4 Watercourse Assessment	Is there information on the hydroperiod of the watercourse or HDFs available? What is the hydroperiod for the intermittent features? Paragraph 2 of Section 3.2.3 (watercourse assessment methodologies) indicates that important, valued, and contributing functions were analyzed through field data collected and observations of suitable, seasonal, or contributing fish habitat on-site. However none of the collected data is provided for review and no discussion is provided on the results of this assessment with respect to watercourse functions or fish habitat.	
4.4 Watercourse Assessment	Was the 2017 fish habitat assessment used to determine fish habitat presence/absence? Are the conclusions of the 2017 document still valid and applicable to the site? Were any updates to headwater feature assessments or fish habitat assessments completed for the watercourses? This section should comment on availability of fish habitat within the watercourses on-site based on more recent field observations.	
4.5 Woodland Assessment	Overall GEMTEC agrees with the conclusion for significant woodlands on-site however, further discussion regarding fish habitat on-site is required to determine if the woodlands are adjacent to fish habitat, which has the potential to impact the conclusion of the significant woodland assessment.	
4.7 Species at Risk Screening	Overall GEMTEC agrees with the assessment of SAR and identification of SAR habitat on-site. Some clarifications and revisions are requested, as outlined below.	No response required.
4.7 Species at Risk Screening	Paragraph 2 states that no species were confirmed present on the Site, however the vegetation community descriptions provided in Section 4.2.2 note the presence of black ash within the Speckled Alder Mineral Deciduous Swamp. This section should be revised to clarify the presence of black ash on-site.	
4.7 Species at Risk Screening	Paragraph 6 discussed SAR bat species, given that eastern red bat, hoary bat and silver-haired bat are now listed as endangered under Ontario Regulation 230/08 (Species at Risk Ontario List), this paragraph should be revised to reflect these changes.	
4.7 Species at Risk Screening	Paragraph 7 discussed black ash, this species should be added to Table 1 in Appendix E.	
4.7 Species at Risk Screening	SAR turtles and turtle habitat is not discussed in this section however, the SWH section identifies candidate turtle wintering habitat. These sections should be revised to clarify whether suitable turtle habitat is present on-site.	
4.7 Species at Risk Screening	Further discussion on Blanding's turtle and suitable habitat is warranted. While not identified on the NHIC squares that directly encompass the site there are Blanding's turtle observations for squares within 2km of the Site. These occurrences could indicate the presence of regulated habitat based on the general habitat description for Blanding's Turtle. Habitat suitability for Blanding's turtle should be further clarified and discussed.	
4.7 Species at Risk Screening	Points to clarify within Table 1 are outlined below.	No response required.
Table 1	The following SAR should be added to the screening table and habitat potential assessed: black ash, eastern red bat, hoary bat, silver-haired bat, and red-headed woodpecker.	
Table 1	In general GEMTEC agrees with the assessment of SAR and identification of SAR habitat on-site. However some of the conclusions, particularly for SAR birds indicates suitable habitat is present but the species was not observed. The table should be revised to clarify that observation of these seasonal species would not be expected given the timing of the site investigations. GEMTEC would note that breeding bird surveys are recommended in Section 7.0, and agrees with this recommendation to confirm SAR bird habitat.	
Table 1	The reptile section of Table 1 indicates that no suitable wetland habitat is present for turtles. This section should also discuss the potential for the watercourses on-site to provide habitat for turtles. The SWH Screening Table (Table 2) identifies candidate turtle nesting areas, but the SAR screening table (Table 1) does not discuss this habitat with respect to Blanding's turtle, snapping turtle or musk turtle. Turtle basking surveys are recommended in Section 4.8, and Section 7, which generally indicates that suitable candidate habitat for turtles is present on-site. This should be clarified in the text and tables of the EIS report.	
Table 1	Eastern whip-poor-will should be revised to reflect its change in status (from threatened to special concern).	
4.8 Significant Wildlife Habitat Screening	Overall GEMTEC agrees with the assessment of SWH and identification of candidate SWH habitat on-site. Some clarifications and revisions are requested, as outlined below.	No response required.
4.8 Significant Wildlife Habitat Screening	Paragraph 1 of this section states that field assessments were undertaken to assess the quality of habitat in relation to Significant Wildlife Habitat. This section (and Section 3.0 Study Methodology) should be revised to clarify which surveys were completed or which results were used to assess SWH. Based on review of Section 3.0 no targeted SWH surveys were completed for the Site.	
4.8 Significant Wildlife Habitat Screening	A screening table for SWH is provided in Table 2 in Appendix E, however no in-text citation provides reference to this table. The EIS should be revised to make note of this table.	
4.8 Significant Wildlife Habitat Screening	If wetlands are present on-site, breeding amphibians should be further considered. Given the timing of the field investigations it is difficult to state that no water is present within the wetlands during the spring and early summer when amphibians would be using the habitat to breed. Amphibian breeding surveys are recommended in Section 4.8, and Section 7, which generally indicates that suitable candidate habitat for breeding amphibians is present on-site.	

EIS Section	GEMTEC 1st Submission Comment	Pinchin Response
4.8 Significant Wildlife Habitat Screening	Points to clarify within Table 2 are outlined below.	No response required.
Table 2	The reptile hibernacula row indicates that no rock piles or similar features observed on the Site. However Section 4.2.2 Vegetation Communities paragraph 5 states that rock piles and old building foundations were found throughout the Fresh-Moist Mixed Meadow community. Clarification and discussion of these features as they relate to reptile hibernacula habitat should be provided in Table 2.	
Table 2	Specialized Habitat for Wildlife. Waterfowl nesting area indicates wetlands are on-site and candidate SWH is present. Woodland amphibian breeding indicates no wetlands, ponds or woodlands with vernal pools within woodlands are on the Site and the SWH is not present. Wetland amphibian breeding indicates no wetland with water are found on the Site and SWH is not present. Further in marsh bird breeding habitat it is stated that marshes with shallow water were observed and candidate SWH is present. These four conclusions are in conflict with each other. Please revise to clarify.	
Table 2	The special concern and rare wildlife species section identifies black ash. However black ash is listed as Endangered under the ESA and should be discussed in Table 1 (Species at Risk Screening).	
Table 2	The special concern and rare wildlife habitat section should consider other special concern or rare species such as snapping turtle, eastern wood-pewee, eastern whip-poor-will, wood thrush, olive-sided flycatcher and monarch butterfly, all of which were identified in Table 1 (Species at Risk Screening) has having suitable habitat available on-site.	
4.9 Natural Heritage System and Ecological Connectivity	The author should further discuss the statement provided in Paragraph 3 with respect the potential PSW on-site, as it relates to the recommendations and mitigation measures presented in Section 7 for protection of wetlands.	
5.0 Proposed Development	The EIS should provide more detail on the proposed plan for impacted surface water features. Section 8.0 briefly discusses an encroachment and relocation but does not provide details. It would be beneficial to better understand the magnitude of in-water work. While it is understood that DFO is the principal approval authority on the matter, a more detailed description of in-water work would allow for a better understanding of potential impacts. The proposed relocation of the watercourse should be indicated on a site plan or figure.	
5.0 Proposed Development	This section should provide an overview of site servicing, stormwater management plans and grading. This information would be beneficial for understanding the overall impact of these activities on natural heritage features for Section 6.0.	
6.0 Impact Assessment	Overall this section discussed high level impacts anticipated to occur from the proposed development, but does not discuss impacts posed to specific natural heritage features.	
6.0 Impact Assessment	No project-specific impact discussion is provided. The proposed development for the site includes development of a roadway, and 20 lot subdivision all on private services. Two stormwater management blocks are illustrated on the figure in Appendix F but no further details are provided. Discussion on stormwater management should be provided. How will site grading and road construction impact the wetlands? How will septic systems impact adjacent wetlands and surface water features? How are these potential impacts being addressed?	
6.0 Impact Assessment	There is no discussion of encroachment into the wetland and watercourse setback to allow for the road and ROW between Lot 4 and 5. How does the proposed development impact the function of wetlands, the vegetation of the wetland, the riparian functions of the wetland? This should be addressed in both Section 6.0 Impact Assessment and 8.0 Mitigation and Opportunities for Enhancement.	
6.0 Impact Assessment	The EIS does not provide sufficient discussion on the proposed relocation of surface water features. If they are being relocated, where will they be moved to? Will relocated features be provided buffers to protect their functions and maintain terrestrial habitats? The plan for the surface water features not being protected should be clearly outlined and the impacts of the development on the HDF features should be discussed in this section. How will the diversion of surface water flows impact the ecological and hydrological functions of natural heritage features on-site, including but not limited to fish habitat, local wetlands, HDFs and SWH associated with these aquatic features.	
6.0 Impact Assessment	The section would benefit from a discussion of impacts to SAR habitat, including but not limited to bobolink, eastern meadowlark, Blanding's turtle, black ash, and SAR Bats. Little to no discussion on impacts to Species at Risk or their habitat is provided. The EIS needs to address impacts to SAR species in this section. Black Ash were identified on-site, but the EIS does not clarify if any will be impacted by development. Impacts to SAR bats are not discussed or identified.	
6.1 Direct Impacts	This section makes reference to development envelopes but doesn't detail where these are located, how large these are, and its not clear on the figure in Appendix F where tree removal or tree retention will occur. The report should be revised to clarify what the development envelopes are referring to and determine how much habitat (area) will be impacted by the proposed development.	
6.2 Indirect Impacts	This section indicates that over time wildlife will likely return to the watercourse and wetlands, but the EIS overall has not provided sufficient discussion on what wildlife is currently present and utilizing the watercourse. Further discussion is warranted in the relevant sections.	
6.2 Indirect Impacts	This section identifies potential alterations of water quality and flow regime in the adjacent natural heritage features but does not discuss specifics. Which features will be impacted? How will features be impacted?	

EIS Section	GEMTEC 1st Submission Comment	Pinchin Response
7.0 Recommended Mitigation Measures	This section identifies a 15m setback from wetlands on-site. It is GEMTECs opinion that there is currently insufficient information with respect to the wetland functions to support a reduced 15m wetland setback. GEMTEC agrees with the recommendation for further field surveys (breeding amphibians, basking turtles, breeding bird surveys) that will help to identify the functions of the wetlands to ensure that the proposed setback is sufficient to protect and preserve these functions.	
7.0 Recommended Mitigation Measures	This section identifies that encroachment into the wetland buffer will occur but does not provide sufficient discussion on where and how much of the buffer will be encroached. GEMTEC agrees with the recommendation of restoration planting but requires more details to determine if the proposed mitigation is sufficient. What will restoration planting include? How much of the buffer will be restored? What plant or vegetation cover is recommended? How will the restoration planting compensate for the encroachment?	
7.0 Recommended Mitigation Measures	The watercourse is proposed to be realigned, however the EIS does not provide sufficient discussion on the function and habitat offered by the watercourses on-site. Further the EIS does not provide a proposed realignment for review. The EIS needs to present the functions of the surface water features on-site, provide an appropriate discussion of impacts associated with the proposed relocation, present the relocation plans and provide a discussion on appropriate mitigation measures to minimize identified impacts. The EIS does not provide any discussion of fish habitat for the property. If fish habitat is present or has the potential to be impacted consultation with the Department of Fisheries and Oceans will also be required. The EIS should be revised to clarify.	
7.0 Recommended Mitigation Measures Tree and Vegetation Removal	Bullet 2 should be revised to include the timing window of eastern small-footed myotis. As established by MECP the timing window for eastern small-footed myotis in southern Ontario is March 15 to November 30. Further based on recent discussion with MECP staff, the anticipated timing window for eastern red bat, hoary bat and silver-haired bat is anticipated to be April 1 to November 30. If vegetation removal cannot adhere to the timing windows consultation with MECP should occur to ensure no impacts to SAR bats.	
7.0 Recommended Mitigation Measures Erosion and Sediment Control	GEMTEC acknowledges that the proposed Stormwater Management Report and Erosion and Sediment Control Plan is sufficient for mitigation of impacts during construction. However, in conjunction with the above comment, the EIS does not sufficiently address erosion and sediment control impacts post-construction, specifically as it relates to generated stormwater runoff and their impact on adjacent surface water features. More details on proposed SWM for the subdivision post-development is required to ensure protection of surface water features. The EIS should discuss the proposed outlets for SWM ponds/proposed management features. The EIS should discuss pre- and post-construction changes to water quality and quantity.	
7.0 Recommended Mitigation Measures Significant Wildlife Habitat	GEMTEC agrees with the recommendation to complete further site surveys including breeding amphibian, breeding bird, bat suitability and turtle basking to identify impacts to SWH and SAR from the proposed development and recommends they be completed and the EIS revised to include these additional survey results.	
7.0 Recommended Mitigation Measures Species at Risk	GEMTEC agrees with the recommendation to complete further site surveys including breeding bird, bat suitability and turtle basking to identify SAR habitat on-site and recommends they be completed and the EIS revised to include these additional survey results.	
7.0 Recommended Mitigation Measures Species at Risk	GEMTEC agrees with the requirement for further black ash work, however notes that a black ash health assessment be conducted in place of, or in conjunction with, the detailed tree inventory. The black ash health assessment should be completed in accordance with the guidance documents provided by the MECP for assessing the health of black ash trees. Following the black ash health assessment, healthy trees are prescribed a 30m habitat protection. Encroachment into this 30m setback or removal of healthy black ash trees will required MECP consultation. Impacts to black ash should be identified and discussed in the EIS.	
7.0 Recommended Mitigation Measures Species at Risk	The EIS should consider further mitigation measures for SAR to be to be considered including: wildlife exclusion fencing during construction, pre-construction sweeps by a qualified biologist and SAR and wildlife training for construction and sub-contractor staff.	
7.0 Recommended Mitigation Measures Wildlife and Species at Risk Encounter Protocol	The following mitigation is recommended to be added to the report: A pre-construction sweep completed by a qualified biologist should be completed to ensure no wildlife have entered the construction zone. SAR and wildlife training should be provided to construction staff and sub-contractors. This training should include how to identify likely SAR in the area, and what to do if wildlife species and/or SAR species are encountered during construction. The encounter protocol outlined in this EIS should be included in the training to construction staff.	
7.0 Recommended Mitigation Measures Restoration and Enhancement	GEMTEC is in general agreement with the recommendations of this section. However the restoration plan and compensation requirements should be discussed with relevant approval authorities, and be established and discussed in the revised EIS, prior to EIS approval from the Township.	

EIS Section	GEMTEC 1st Submission Comment	Pinchin Response
8.0 Closure	GEMTEC is in general agreement with the methodologies of field studies and results of the field studies presented in this EIS report. Methodologies and results were generally completed and discussed in accordance with industry standards. GEMTEC cannot comment on the appropriateness of the proposed 15m setback until further surveys are completed. Until such time as natural heritage features, including species at risk, are fully characterized and assessed for impacts from the proposed development, the viability of the concept, as currently presented in the EIS, is unclear. Opportunities exist within the EIS to better outline the proposed development and discuss project and site specific impacts and mitigation to ensure that the EIS and the project are in compliance with the policies of the Provincial Planning Statement, 2024, the Township of Beckwith Official Plan, and Lanark County Official Plan.	
Figure 5	The figure should identify the proposed relocation of surface water features.	
Figure	Grading and SWM activities (outlet locations, pond locations, ditching etc.) should be illustrated on a figure in order to assess impacts to surface water features.	

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive 613.836.1422
Ottawa, ON, Canada ottawa@gemtec.ca
K2K 2A9 www.gemtec.ca

April 1, 2025 File: 101275.005

Township of Beckwith
1702 9th Line Beckwith
Carleton Place, Ontario
K7C 3P2

Attention: Enam Hoque, M. Pl

Re: Third Party Review of Terrain Analysis and Hydrogeological Investigation
Douglas Landing Development
9243 McArton Road, Beckwith Township, Ontario

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by the Township of Beckwith to provide a review of Pinchin Ltd.'s (Pinchin) report titled "Servicing Option Statement, Terrain Assessment and Hydrogeological Study in Support of Development, 9243 McArton Road, Beckwith Township, Ontario, Pinchin File: 283258.001" dated January 13, 2025, herein referred to as the 'Pinchin report'.

The peer review was undertaken following the technical guideline documents for land development applications on private services identified below:

- Ministry of the Environment, Conservation and Parks (MECP), August 1996. Procedure D-5-4 Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment.
- Ministry of the Environment, Conservation and Parks (MECP), August 1996. Procedure D-5-5 Technical Guideline for Private Wells: Water Supply Assessment.
- Ministry of the Environment, Conservation and Parks (MECP), April 1995. Hydrogeological Technical Information Requirements (TIR) For Land Development Applications.

The peer review is limited to the hydrogeological investigation and terrain analysis and does not include a review of the servicing options statement, which follows MECP Procedure D-5-3 Servicing Options Statement.

1.0 BACKGROUND

The Pinchin report relates to the development of 23 residential lots on individual private water supply wells and septic systems. The development property has an area of approximately 21.9 hectares. The proposed residential lots range from approximately 0.40 to 1.43 hectares,

averaging approximately 0.60 hectares per lot. The work undertaken by Pinchin in support of the residential development includes:

- Review of background information, including land use and MECP water well record database;
- Supervision of the installation and hydraulic testing (i.e. pumping tests) of four on-site test wells;
- Water level monitoring of four on-site test wells and three neighbouring private well users;
- Water quality sampling from four on-site wells; and
- Excavation of nine test pits as part of the hydrogeological investigation (including reference to 10 boreholes advanced as part of a geotechnical investigation completed for the site).

2.0 HYDROGEOLOGICAL SETTING

2.1 Hydrogeological Characterization by Pinchin

The Pinchin report identifies the current land use of the subject site consists of farmland, woodland, unevaluated wetland and drainage features from previously severed farmland. The Pinchin report indicates that the off-site area includes approximately 40 residential properties along Ridgemont Drive, Douglas Side Road and McArton Road. A review of the MECP water well record database by Pinchin indicates 40 well records were identified within 500 metres of the site, which are all drilled wells terminated within limestone. The Pinchin report notes that many well records indicated layers of shale or sandstone within the limestone unit that were considered to be indicative of the transition to the sandstone unit that underlays the limestone in the area.

The Pinchin report indicates that the overburden thickness, as characterized by nine on-site test pits ranges from 0.15 to 0.30 metres with the exception of test pit TP-4 advanced to 1.98 metres below ground surface and did not encountered bedrock. Further, the report references ten boreholes advanced as part of a geotechnical investigation where the overburden thickness is reported to range from 0.15 to 0.61 metres.

The test well records indicate limestone bedrock was encountered at all four test well locations to depths of up to about 55 metres below ground surface.

The Pinchin report states that greater than 15 metres of bedrock isolates the water bearing fractures from the surface based on the results of the test pit program and review of MECP water well record database.

2.2 Hydrogeological Characterization – GEMTEC Comments

GEMTEC is of the opinion that the hydrogeological characterization completed by Pinchin is not sufficient to adequately characterize the site. While the test pits, test wells and boreholes (advanced as part of the geotechnical investigation) provide adequate coverage across the site to delineate surficial and bedrock geology, there is no discussion of the physical setting, mapped geologic conditions or groundwater flow directions. Available background resources, namely the Ontario Geologic Survey surficial and bedrock geology maps must be presented and incorporated into the hydrogeological characterization of the site. It is noted that the Environmental Impact Statement (EIS) prepared by Pinchin includes a description of landforms, soils and geology.

Also, the report references 'a separate geotechnical investigation' but does not provide a reference to the report, which should be included.

There is limited discussion or interpretation of the proposed water supply provided; limestone was indicated on all test well records, but the Pinchin report notes that background well records indicate shale layers that may be indicative of the transition to the sandstone unit underlying the limestone in the area. Additional discussion is required to support the hydrogeological characterization and identification of the proposed water supply aquifer / target drilling depths. Further, discussion on groundwater flow is required, to be supported by background studies and/or on-site test well water levels.

With regards to the hydrogeological sensitivity of the site, the Pinchin report does not clearly state whether or not the site is hydrogeologically sensitive, but concludes that the ground surface is isolated from the water bearing fractures of the target aquifer. GEMTEC does not agree with Pinchin's conclusion that the ground surface is isolated from the proposed water supply in accordance with MECP Procedure D-5-4 without additional supporting evidence. Generally, areas consisting of thin soils, taken to be less than two metres in thickness are considered to be hydrogeologically sensitive. Pinchin's assessment of the hydrogeological sensitivity of the site must be substantiated, which can include boreholes advanced within the upper bedrock and door-to-door survey / homeowner sampling of neighbouring private well users (i.e., does the water quality of existing well users support the assessment of the hydrogeological sensitivity of the site). To note, two of the four test wells reported detectable nitrate concentrations in the proposed water supply aquifer that is concluded to be isolated from surface impacts.

3.0 MECP PROCEDURE D-5-5: WATER QUANTITY ASSESSMENT

3.1 Water Supply Assessment by Pinchin

Pinchin notes the procedure for water supply assessment is described in MECP Procedure D-5-5 and includes pumping tests and water quality sampling completed in four on-site test wells. All four on-site test wells were constructed with 12.2 metres (40 feet) of casing below ground surface. The on-site test wells were completed in limestone bedrock to depths of 30.5 to 54.9 metres.

Six-hour pumping tests, including recovery were completed in all four test wells at rates of 90.0 to 90.9 litres per minute for three test wells and 68.2 litres per minute for one test well. The Pinchin report indicates that the minimum well yield required is 13.7 L/min as specified in MECP Procedure D-5-5.

The assessment of mutual well interference was based on monitoring from all test wells not being pumped and three neighbouring water supply wells along Ridgemont Drive. Water levels in all on-site and off-site wells were measured manually using a water level tape and dataloggers. Minimal drawdown of less than 0.48 metres was noted in three of the four test wells, whereas drawdown of 2.21 metres was observed at well 4 (A360959). The Pinchin report states that approx. 75% of all water level interactions from the monitoring wells were less than 0.05 metres attributable to pumping activities. Larger water level drawdowns were noted in observation wells which were attributed to domestic wells coming on to repressurize the water supply systems at the residences.

Pinchin concludes that the water supply wells installed on site are capable of providing sufficient quantity for the proposed residential development and that no unacceptable adverse interference is expected to surrounding groundwater users from the proposed development.

3.2 Water Supply Assessment – GEMTEC Comments

GEMTEC is of the opinion that the Pinchin report does not meet the procedural requirements of MECP Procedure D-5-5. The outstanding information required to support the assessment of groundwater quantity is listed below:

1. Four test wells is the minimum number of test wells for developments more than 15 and up to 25 hectares, with the proposed development being 21.9 hectares. However, that assumes that the test wells are technically representative of the proposed water supply aquifer. One of the test wells (Well 4 Tag #A430959) had lower yield compared to the other three test wells. The proponent must provide supporting rationale that Well 4 is technically representative. Further, all four on-site test wells were constructed with 12.2 metres (40 feet) of casing below ground surface which is greater than the *Wells Regulation* (O.Reg 903) minimum casing length of six metres below ground surface for wells completed in bedrock; rationale for the extended casing length is required to support the proposed water supply aquifer selection.

2. The minimum well yield required to support the residential development is stated to be 13.7 litres per minute, the minimum specified in MECP Procedure D-5-5; however, MECP Procedure D-5-5 requires that the minimum well yield be calculated for the particular development. For septic system design on page 20, four-bedroom dwellings are considered, but the groundwater quantity sections do not specify the water demand requirements. Information on the proposed development is not provided and the calculation of the minimum well yield is required.

3. Section 4.3 Well Water Quantity Testing indicates that the report must contain *"…site aquifer characteristics such as hydraulic gradient, transmissivity and boundary conditions*". Assessment of aquifer properties such as transmissivity and storativity were not completed and are required to meet MECP Procedure D-5-5. The assessment of aquifer properties may also serve to support whether Well 4 is technically representative of the proposed water supply aquifer and/or comment on expected variability in aquifer properties.

4. Section 4.6 Land and Water Use Conflicts: "*where wells exist on or adjacent to the site, a survey of well owners, and sampling and analysis of representative well water, should be performed and reported*." The lack of off-site private well survey information does not allow for the identification of potentially existing conditions with respect to water quality that may be exacerbated and impact the neighbouring well users. A private well survey and private well water sampling program should be conducted to assess background conditions prior to the construction of the proposed development. The private well survey and sampling program would provide key information pertaining to the well performance and water quality on properties where wells and septic systems have been present for a significant period. It is noted that three off-site well users were incorporated into the groundwater quantity and interference assessment.

5. The interference assessment included monitoring of on-site and off-site private wells, with minimal well interference noted. The observation well spacing of approximately 175 to 742 m is significantly greater than that expected for future on-site wells and the interference assessment should further comment on this using the pumping test data and water level monitoring of nearby existing private wells if they are considered to be technically representative of the proposed water supply aquifer. The conclusion that no adverse interference between wells should be re-evaluated once aquifer properties are assessed.

4.0 MECP PROCEDURE D-5-5: WATER QUALITY ASSESSMENT

4.1 Water Quality Assessment by Pinchin

The water quality testing included the collection of one water sample during the six-hour constant rate pumping tests, after approximately six hours of pumping, submitted to an accredited laboratory (Caduceon) for the chemical, physical and bacteriological analyses in MECP Procedure D-5-5.

All test wells were reported to exceed the Ontario Drinking Water Quality Standards (ODWQS) operational guideline (OG) for hardness, aesthetic objective (AO) exceedances for manganese (one well) and health related warning level (WL) exceedances for sodium (one well). No bacteriological exceedances were identified. A summary of the ODWQS exceedances identified are provided below:

- The manganese concentrations are reported to be within MECP Procedure D-5-5 treatability limits and treatment recommendations are provided.
- As noted in the Pinchin report, the hardness concentrations exceed the operational guideline for hardness in all samples. The Pinchin report concludes that the hardness concentrations are within treatable limits using water softeners.
- The Pinchin report notes that sodium exceedances call for the local Medical Officer of Health be notified and that if sodium concentrations pose a dietary or medical concerns, revise osmosis treatment systems can be implemented.

The Pinchin report concludes that the raw water quality is considered good and suitable as a potable water source and that if users find the elevated hardness to be unpalatable or cause objectional staining, water softeners can be utilized for treatment.

4.2 Water Quality Assessment – GEMTEC Comments

The Pinchin report concludes that the water quality in on-site test wells is considered good and suitable as a potable water source. While the parameters tested are all within the ODWQS maximum acceptable concentrations (MAC) and maximum concentrations considered to be reasonably treatable (MCCRT), GEMTEC is of the opinion that the additional testing is required to confirm safe drinking water quality. Field measured water quality parameters and calibrations records (if available) should be included in the revised report.

MECP Procedure D-5-5 indicates the minimum parameter set required for testing and notes that other parameters may be required. Further, "*the consultant must also determine whether conditions specific to the site or its surrounding area require the inclusion of additional parameters"*. Locally, 'trace' metals are recommended for analysis by the City of Ottawa and Lanark County. Although the site is not within those boundaries, trace metals such as barium and strontium have been identified in the surrounding area at concentrations above their respective ODWQS and Health Canada's health-related maximums. Where health-related maximum acceptable concentrations may be encountered, sampling is required to confirm acceptable concentrations.

Further, there is a commercial/industrial property located within 500 metres of the site and the proponent should comment on whether additional parameters should be tested (e.g., volatile organics compounds, petroleum hydrocarbons, etc.), especially in the absence of known groundwater flow direction. For future studies, it is recommended that a technical pre-consultation with the Township and their technical reviewers be initiated to identify and confirm the minimum parameters to be considered.

With regards to the manganese concentration in Well 1 of 0.144 mg/L, it is acknowledged that this concentration is within the ODWQS AO and MCCRT; however, it exceeds Health Canada's (2019) MAC of 0.12 mg/L. While the federal drinking water quality standards are not necessarily

applicable for development applications in Ontario, future drinking water users should be informed of health-related exceedances.

As noted in the Pinchin report, the hardness concentrations exceed the operational guideline for hardness in all samples. The hardness concentrations exceed 100 mg/L and as per MECP Procedure D-5-5 the groundwater is considered to be hard. There is no upper treatable limit listed in MECP Procedure D-5-5 but concentrations of less than 500 mg/L are considered to be acceptable for most domestic purposes. GEMTEC agrees that the hardness concentrations are within treatable limits.

Once additional water quality sampling is completed, the report recommendations should provide a consolidated list of exceedances, treatment options and recommendation for the local Medical Officer of Health be notified that sodium concentrations may exceed the ODWQS warning level for persons on sodium restricted diets. It is further recommended that the Township include the sodium notification on the Notice of Title.

5.0 MECP PROCEDURE D-5-4: WATER QUALITY IMPACT RISK ASSESSMENT

5.1 Septic Systems - Pinchin

The Pinchin report provides recommendations for conventional Class IV sewage systems, with the septic leaching area calculated to be 300 m^2 for a 4-bedroom single family dwelling. Pinchin indicates that some lots may require additional lower permeability material be incorporated where 0.25 m of natural materials are not present. Further, tertiary septic systems are also presented as a means to provide more flexibility in locating the septic systems as the footprint is smaller and that they provide a greater overall degree of treatment thereby increasing the protection for the environment.

Figure 2 of the Pinchin report illustrates that each proposed lot has sufficient area for a primary and alternative infiltration bed location.

5.2 Septic Systems – GEMTEC

GEMTEC is of the opinion that Pinchin has not adequately demonstrated that the proposed lots can accommodate septic systems while meeting all applicable setbacks / site constraints. The Pinchin report does not reference the EIS report, also completed by Pinchin, which indicates that the proposed development will be constrained within development envelopes, although the size and location of the development envelopes are not clearly indicated. A Conceptual Lot Development Plan incorporated wetland setbacks, development envelopes (if applicable) and other site-specific constraints must be prepared to demonstrate the proposed lots can be developed.

The proposed leaching bed area of 300 m^2 should be justified. For consideration, assumed septic flows of 2,500 to 3,000 litres per day with a conservative loading rate of 4 L/m^2/day to account for

fully raised septic beds over shallow bedrock would result in a leaching bed area of 625 to 750 m^2. Replacement septic bed areas are not required.

5.3 Terrain Analysis and Septic Impact Assessment by Pinchin

The septic impact assessment is discussed on page 20 of 25 of the Pinchin Report and follows the MECP Procedure D-5-4 water quality impact assessment steps. The Pinchin report identifies that the proposed development does not meet *Step 1 – Lot Size Considerations* as the average lot size is below the 1.0 hectare considered to be sufficient to naturally attenuate septic impacts and proceeds to *Step 2 – Isolation*.

The supporting rationale provided by Pinchin for Step 2 aquifer isolation and assessment of the hydrogeological sensitivity is based on the following:

- The surface of the limestone bedrock exhibits weathering, but such weathering is thin with competent bedrock below.
- Based on a review of MECP water well records, there is in the order of greater than 15 metres of bedrock above the water bearing zones isolating the proposed water supply aquifer from the surface.
- The use of tertiary treatment septic systems would provide additional protection to the aquifer by reducing effluent strength.

The Pinchin report interprets that the bedrock aquifer would be protected from any potential impacts resulting from sewage system effluent.

5.4 Terrain Analysis and Septic Impact Assessment – GEMTEC Comments

GEMTEC does not agree with Pinchin's assessment of aquifer isolation. It is GEMTECs opinion that insufficient information has been provided by Pinchin to conclude that the site is not hydrogeological sensitive and isolated from surface impacts; comments are provided below for each of the bullet points identified above.

1. Weathered bedrock is thin with competent bedrock below.

   GEMTEC Comment: The report does not contain sufficient information to support this statement, e.g., identification of the geologic formation, detailed visual observations, photos, etc.

2. There is at least 15 metres of competent bedrock above the water bearing zones in all on-site test wells.

   GEMTEC Comment: System isolation requires evidence that approximately 10 metres of low permeability materials (typically taken to be clay) underly the site, including beyond

the development boundary in the downgradient direction. The identification of water bearing fractures reported by well drillers does not provide sufficient evidence that bedrock fractures do not exist.

The Pinchin report does not identify the geologic formation or groundwater flow directions, which would be needed to support the conclusion that greater than 10 metres of competent bedrock is in place on-site and in the downgradient direction.

Further, detectable nitrate concentrations were identified in two of the four on-site test wells, which would not typically be expected in an isolated water supply aquifer. No discussion of nitrates or other surface water quality indicators were included as supporting evidence of aquifer isolation.

It is recommended that additional discussions and/or assessment be completed to support system isolation or that Pinchin proceed to MECP Procedure D-5-4 *Step 3 – Contaminant Attenuation Considerations*. Determination of the hydrogeological sensitivity of the site is also required and identification of mitigation measures to support safe and sustainable development (if applicable, e.g., increased well casing lengths, increased separation between well and septic systems, clay liners beneath leaching fields, etc). Significant effort including additional field investigations are expected to support system isolation and should the proponent consider this approach, it is highly recommended that a technical consultation is carried out beforehand to discuss the proposed approach and scope of work. For consideration, GEMTEC is of the opinion that the site is considered to be hydrogeologically sensitive, and the water supply aquifer is not likely to be isolated from surface impacts unless a detailed assessment of the bedrock proves otherwise.

6.0 ADDITIONAL CONSIDERATIONS

GEMTEC has identified the need for additional justification to support the hydrogeological conceptual model and incorporate recommendations from other studies (i.e., setbacks, developments envelopes indicated in the EIS). Once the additional assessment(s) are completed, the preparation of a Conceptual Lot Development Plan is required to support the development. The Conceptual Lot Development Plan must clearly demonstrate that all lots are capable of accommodating well and septic systems using conventional septic leaching beds and incorporating any other site-specific considerations should they be identified (e.g., protective measures to account for the hydrogeological sensitivity of the site, development envelopes or setbacks as identified in the EIS, etc).

Also, it is recommended that the report comment on the ability of future lots to accommodate secondary dwellings (i.e., coach houses) and/or identify whether supplemental hydrogeological investigations will be required if future secondary dwellings are contemplated.

7.0 CONCLUDING REMARKS

Based on a review of the Pinchin report, GEMTEC has identified the need for supporting analyses and discussion to meet the technical requirements of MECP Procedure D-5-4 and D-5-5 guidelines. The comments provided by GEMTEC herein should be addressed prior to approval of the development.

8.0 REFERENCES

Health Canada. 2019. Guidelines for Canadian Drinking Water Quality, Guideline Technical Document, Manganese. Published 2019-05-10.

9.0 CONDITIONS AND LIMITATIONS

This report was prepared for the Township of Beckwith and is intended for the exclusive use of the Township of Beckwith. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and the Township of Beckwith. Nothing in this report is intended to provide a legal opinion.

The review undertaken by GEMTEC with respect to this report and any recommendations or conclusions made in this report reflect the best judgments of GEMTEC based on the findings as conveyed by Pinchin and the professional opinions of the qualified professional who conducted and signed the hydrogeological report. GEMTEC has not completed an independent site investigation to confirm the validity of the data presented in the hydrogeological report prepared by Pinchin.

Should new information become available during future work, including excavations, laboratory results or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the recommendations and conclusions presented herein.

10.0 CLOSURE

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Andrius Paznekas, M.Sc., P.Geo.
Hydrogeologist

AP / DP

April 4, 2025

BY EMAIL

Township of Beckwith
1702-9th Line Road
R.R. #2
Carleton Place, ON K7C 3P2

Attention: **Enam Hoque, Planning Administrator**

Reference: **Douglas Landing Subdivision**
Part Lot 25, Concession 12
Township of Beckwith, County of Lanark
Engineering Peer Review – Preliminary Stormwater Management Report
Tatham File No.: 522650
Novatech File No.: 125020

As requested by the Township, Novatech has completed a peer review of the Preliminary Stormwater Management Report in conjunction with supporting reports for the proposed Douglas Landing Subdivision.

The following document has been reviewed, and we are providing comments on the engineering, from a Township perspective. Comments from the Conservation Authority would need to be addressed as well.

- Preliminary Stormwater Management Report, prepared by Tatham Engineering Limited dated January 13, 2025

Preliminary Stormwater Management Report

1. Background reports
   a) The Douglas Side Road - Fish Habitat Assessment prepared by Geofirma Engineering dated June 12, 2017, was not provided for reference or coordination.

2. Internal Roadways
   a) The proposed pavement structure should be reviewed in consultation with Pinchin's Geotechnical Investigation, January 21, 2025.

   b) Typically, in the Township of Beckwith paved road platforms are 6.1m with 1.5m shoulders, Public Works to review and confirm narrow shoulder (1.0m proposed) is sufficient for maintenance.

3. Douglas Side Road Extension
   a) A preliminary level of detail should be provided for the extension of Douglas Side Road including proposed pavement structure and typical cross-section to ensure that the proposed road extension (including grading) can be accommodated within the municipal right-of-way.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

4. Grading
   a) Detailed grading should be completed along Street A between STA 0+360 and 0+530 to ensure that the roadside ditch, culvert, proposed utilities, backslope and grading to match existing property line will be accommodated within the 20.0m right-of-way and within the subdivision property limits.

5. Existing Watercourses
   a) The existing watercourses depicted in the Environmental Impact Study prepared by Pinchin, January 13, 2025, are not shown on the Preliminary the Grading Plan. These watercourses, including any possible alterations should be reviewed and addressed by the design team.

6. Stormwater Management
   a) We agree with the assessment that there are no overland flows from the Ridgemont Subdivision draining onto the subject site.

   b) Clarify the headings in Table 4 to indicate peak flows are the outlet flows from the ponds and not the uncontrolled peak flows from the catchments.

   c) Review and update Tables 1 to 4 to be consistent with the peak flows from the model results.

   d) Describe how the ponds were sized including a discussion on the difference in peak flow, in all storm events, from each outlet.

   e) At the detailed design stage, review all outlets to the wetland in conjunction with environmental constraints.

7. Servicing:
   a) Septic Sizing: Septic system footprints shown on design plans should reflect the size indicated in the Hydrogeological Study.

   b) Well Locations: Designer should review and document wells suitable for domestic use. Notes should added to detailed drawings stating test wells that do not meet O.Reg 903, or Ontario Building Code setbacks must be abandoned.

8. Species and Risks and Fencing:
   a) Based on the supporting studies, it appears that there is suitable habitat for many species at risk on the development property. It is recommended that further review be completed prior to Draft Plan Approval.

   b) At the detailed design stage, the designer should provide further information on permanent exclusion fencing including type, location access points.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

9. Additional comments:

   a) The Township of Beckwith should confirm future ownership SWM Facility Blocks (24 and 25), and ownership of Block 26, Unevaluated Wetland with the Developer.

Yours truly,

NOVATECH

Lisa Bowley, P.Eng.
Senior Project Manager
Land Development Engineering

Kallie Auld, P.Eng.
Project Manager
Water Resources

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com

Koren Lam

From: Jamey Mack
Sent: April 19, 2025 8:50 PM
To: Koren Lam
Cc: Jamey Mack
Subject: County File No. 09T25001

Please notified me if any updates. Question? Shouldn't there be two entrance's to this Subdivision for emergency vehicle's if one is blocked.

Jamey Mackenzie
President
Mack Metal Mechanical Installations

Koren Lam

From: Neil & Melissa Hamilton
Sent: April 17, 2025 4:40 PM
To: Koren Lam
Subject: County File No.: 09-T-25001 Comments

[You don't often get email from . Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

This communication is intended to make known the concerns of adjacent land owner 9367 McArton Rd. These concerns/questions are as follows:

• This property has active farming operations ongoing including the use of pesticides as part of a 4R nutrient management plan.
• The proposed subdivision must be responsible for any future shared landowner costs of the municipal drain maintenance, being as it will be connected to the storm water management design.
• Will the increased volume of traffic on McArton Rd be addressed? i.e. previous subdivision work has reduced the width of this road and depth of ditches to be not adequate for the movement of farm equipment meeting oncoming traffic • Increased use of McArton Rd because of previous/future subdivisions has/will result in an increase of volume and speed of traffic. This road should be reduced to 60km/hr as well as stop signs at intersections.

Please send any updates to this application to:

Barb Hamilton
674 Ramsay Concession 12
Almonte, ON
K0A1A0

Sent from my iPhone

Koren Lam

From: Todd Shaver
Sent: April 16, 2025 6:00 PM
To: Koren Lam
Subject: Douglas Landing site development traffic

[You don't often get email from . Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Koren,

I was concerned about the traffic flow of heavy equipment for Douglas landing and wondered about the plan for this.

Douglas road doesn't allow commercial traffic.
Ridgemont Drive with many young families sees a lot fast moving vehicles as a result. The development seems likely to increase this traffic with large equipment.

Would there be another access point for the land development?

Thank you,

Todd Shaver
Ridgemont Drive, Ashton

Sent from my iPhone

Koren Lam

From: Ping Cui
Sent: March 10, 2025 12:50 PM
To: Koren Lam
Subject: Information regarding Ridgemont Estate.

Hi Koren,

Thanks for the Notice of the Project, Douglas Landing Developments, County File No. 09-T-25001.

My name is Ping Cui. I am the current property owner of 162 Ridgemont Drive, Ashton, ON.
I am wondering if it is possible that I can have a copy of similar document of our current community- Ridgemont Drive Estate which had public notices about 2015.

Thank you very much for your help.

Best regards,

Ping Cui