May 13, 2026, 2026
Project #251527

Greg Kirton
Director of Planning
East Ferris Municipality
25 Taillefer Road
Corbeil, ON
P0H 1K0

Re: Clarification of Hydrogeological work completed for subdividing of Part of Lots 13 & 14, Concession 7 and Part of Lots 13 and 14, Concession 8; Township of East Ferris AND response to Public Comments received to date.

Dear Greg,

As per recent correspondence with Steve McAuthur regarding the work undertaken for the Hydrogeological Assessment for the proposed subdividing of the subject properties noted above, we are providing this letter to provide clarification with respect to the applicability of the report. Via this letter we are also providing a response to comments received from members of the public to date.

Applicability of Hydrogeological Assessment

In 2024, Tulloch completed a report entitled "*Hydrogeological Study For Proposed Estate Lots On and Around Corbeil, East Ferris Ontario*" in March, 2024 which was submitted in support of proposed subdividing of various properties by the proponent. The subject properties noted above were included within the scope of this report as noted in Section 1 of the report and shown on Figure 1 from the report attached to this letter. Although the exact number of proposed lots was not finalized at the time of the report, the following pertinent references from the report are provided.

Section 1.1 – Project Description, page 4 last paragraph.

"It is proposed to sever the subject properties into rural residential estate lots varying in size from 0.8 hectares and higher. Details for severance of Lot 15, Concession 7 are shown on Figure 2. Details for severances of the other subject properties are currently being considered, and will be provided at a later date. This hydrogeology study is being provided to ensure there will be suitable water supply from drilled wells and that any potential impacts to the surrounding properties from the new development water groundwater extraction and on-site sewage disposal will be acceptable."

In *Section 7, Conclusions*, the following statements were made.

"Review of 173 well records in the vicinity of the subject properties indicated that supply of enough water to support single family dwellings is highly likely. Five test wells and pumping tests were completed Based on the test well completion and pump testing, it is anticipated that there will be adequate domestic water supply for the proposed single family dwellings.

"Review of water quality data from samples taken at the end of the pump test show that the groundwater quality is generally acceptable for human consumption with all parameters below health criteria limits except some elevated levels of coliform and a 1 ppm result for ecoli. Proper well development, flushing and disinfection of all new systems prior to commissioning will address this."

"A review of on-site septic systems indicate that a minimum lot size of 0.5 hectares should be maintained and that standard filter bed construction with imported mantles where required for soil or groundwater conditions will be satisfactory."

Based on the statements above, it was confirmed that there would be no issues for water supply or on-site sewage as long as the lots are larger than 0.5 ha.

Proposed Development on Subject Properties

The lot layout for the subject properties now being proposed by the developer is shown on Figure 2 attached. The proposed development consists of dividing the subject properties into 41 estate lots. The total area of the subject properties is 134.12 ha while 2.55 ha will be allocated for road construction. This leaves 131.57 ha for estate lots. As shown on Figure 2, most of the lots (36) will be placed on the northeast portion of the property (yellow highlighted area) while the remaining 5 lots will be considerably larger as shown in the green highlighted area on Figure 2. The proposed lot sizes are summarized in the following table.

	Area (ha)	No. Lots	Minimum Size (ha)	Maximum Size (ha)	Average Size (ha
Lots 1-36 (Yellow)	47.06	36	0.80	2.80	1.31
Lots 37-41 (Green)	84.51	5	5.32	22.80	16.80
Lots 1 -41	131.57	41	0.80	22.80	3.21

In terms of how the current proposed development fits with the completed hydrogeology assessment, the following points are provided.

1. As shown in the table above, the minimum lot size is 0.8 ha which is larger than the minimum of 0.5 recommended to meet on-site sewage system requirements and consistent with the statement made in Section 1.1 of the hydrogeology report (proposed 0.8 ha and larger).
2. Due to the presence of wetlands or environmentally sensitive areas, the proponent has agreed to apply a much lower density development in the south part of the subject properties then originally considered when the hydrogeology report was completed in 2024. This results in an average lot size of 3.21 ha over the subject properties which is significantly higher than that envisioned at the time of completing the report.
3. The proposal now being put forth by the proponent will have less impact than projected in 2024 when completing the hydrogeological assessment.
4. Due to the overall lower lot density now being proposed, there will be even less risk of any noticeable groundwater impacts due to the preservation of natural areas and wetlands which will help with natural attenuation of on-site sewage system effluent and provide ample local sources of recharge for the bedrock aquifer.

Public Comment Responses

Two submissions were received from the township that were submitted by Philp Koning who resides at the Treadlightly subdivision off Hwy 94 roughly 2.5 km from the subject properties. Mr. Koning has raised concerns with the proposed development on the subject properties affecting his available water quantity. He has also provided AI generated comments on the 2024 hydrogeology report completed by Tulloch. The following points are provided to address Mr Koning's comments.

1. The Treadlightly subdivision, where Mr Koning lives, consists of 35 homes built on a total area of 33 ha. Accounting for the surface area of the roads and some green space, the average lot size is 0.8 ha. There are no known local water supply issues associated with the Treadlightly subdivision which has been fully developed for 10 years or so. Therefore, the Treadlightly subdivision is an example of a "case study" which indicates that at a lot density of 1 home per 0.8 ha, there is an adequate supply of groundwater. In the case of the proposed development on the subject properties, the overall lot density is much lower at 1 home per 3 ha.
2. The Treadlightly subdivision is located in a different local watershed than the subject properties. There is no direct hydraulic correlation between the two locations. There are two stream valleys between the two locations which flow north. Groundwater from both these areas likely flows north towards the same stream and as such the newly proposed development can not impact Treadlightly.
3. From an overall water budget perspective, rural residential estate lots do not constitute a 100 % water withdrawal from the environment. This is because all or most of the water that is extracted from each well is returned to the local groundwater regime

through the on-site sewage systems. On-site sewage systems are designed to locally treat the effluent and promote infiltration back into the local groundwater regime as much as possible.

4. A regional water budget analyses is presented within Section 4.6.2 of the 2006 NBMCA Groundwater Study Report for the study area of 4,600 km^2. The following Table summarizes the results of the analyses.

	Annual Depth	Annual Volume	Percentage
Precipitation	907.2 mm	4.173 million m3/year	100 %
Evapotranspiration Losses	630.8 mm	2,902 million m2/year	69.5 %
Recharge (Ground water)	100.0 mm	460 million m3/year	11.0 %
Runoff (Surface Water)	530.8 mm	811 million m3/year	19.5 %
Groundwater Use	0.004 mm	18,605 m3/year	< 1 %
Net Groundwater Surplus	99.996 mm	459.98 million m3/year	> 99%

Based on the above table results, currently less than 1 percent of the available groundwater within the study area was being utilized in 2006 and there certainly were no concerns with a shortage of groundwater.

5. From the table above, summarizing results from the NBMCA Groundwater Study Report, it is estimated that the recharge component of the precipitation in the area is 11 percent of the total precipitation or 100 mm per annum. This value can be used on more local scale for the proposed development on the subject properties. The following table provides a local groundwater budget just for the subject properties.

Groundwater Recharge Annual Depth	100 mm (0.1 m)
Property Surface Area	134.12 ha (1,341,200 m2)
Annual volume of Groundwater Recharge	134,120 m3
Annual recharge per lot (41 lots)	3,271.2 m3
Daily groundwater available per lot	8.96 m3 (8,962 litres)

Based on a water demand of 2,000 litres per day for a standard 4 bedroom home, it is apparent that groundwater recharge just within the subject properties boundary is more than 4 times the anticipated water demand. As noted above, most of the water that is extracted from the well will be locally infiltrated back into the local ground water regime through the on-site septic systems. Therefore, the net water withdrawal will be less than 25 percent of the available groundwater recharge.

6. According to an AI review provided by Mr. Koning, concerns were raised whether the 2024 report fully complies with Sections 4.6 and 4.7 of Guideline D-5-5. The following comments are provided to address these concerns.

a. Section 4.6 refers to identifying existing land uses within 500 m of the proposed development. The surrounding area is a mixture of estate lot development and historical agricultural use. Based on the pump tests performed, there was very limited interference between two wells at 300 m separation in one instance. In addition, monitoring of each test well over a 24 hour period prior to testing showed there were no impacts or drawdown associated with existing users in the area. Based on this and the favourable groundwater yield results from the pump tests it is anticipated that any impacts to surrounding wells will be minimal and within acceptable ranges. An existing aggregate pit located about 1 km to the northeast of the subject properties is on the opposite side of stream valley and will have no impact on the bedrock aquifer in the area.

b. Section 4.7 refers to testing requirements for phased developments. The 2024 report was done for all of the subject properties and as such test wells were drilled and field work was conducted on all properties including the subject properties noted above. All relevant information and analyses were provided in 2024 to address potential impacts of the development of the subject properties referred to above. No additional work is required.

7. Mr. Koning provided a spreadsheet summarizing records for 355 wells in East Ferris dating back to 2003 and provided a basic analyses of pumping rates used by well drillers in 5 year increments from 2003 to present day. This analyses was used to suggest that a reduction in pumping rates was related to reduced yields or performance from the aquifer. This conclusion is incorrect for the following reasons:
    a) The pumping rates used have no bearing on expected well yield. They are simply the rate which the well driller chose to use for the standard one hour test they are required to do on each completed well.
    b) To understand yield or performance one must look at the associated drawdown of the well which occurs during the pumping test by calculating something called Specific Capacity. Specific Capacity is the rate of water discharge per unit drawdown or litres per minute per metre (lpm/m) of drawdown. A reduction of specific capacity values over time could suggest lower well or aquifer performance.
    c) By using the data from Mr. Koning's spreadsheet, Tulloch was able to calculate average specific capacity values for 5 year increments as shown in the following table.

2003 to 2007	1.14 lpm/m
2008 to 2012	0.83 lpm/m
2013 to 2017	1.28 lpm/m
2018 to 2024	0.88 lpm/m
2003 to 2024	1.01 lpm/m

As shown the values are consistent and there is no discernible trend in reduced aquifer performance.

8. Mr. Koning has asked that the township consider having the Tulloch hydrogeology assessment peer reviewed. Tulloch has had it's work peer reviewed on other projects

and has also conducted peer reviews of other consultants. Typically, peer reviews are done on projects that are higher density developments and /or in areas where there are higher demands on groundwater resources. In this case the overall proposed density of the development is quite conservative (i.e. 1 lot per 3 ha). Also, from an overall water budget perspective, the amount of water required will be significantly less than 25 percent of that available through groundwater recharge. In addition, historical performance of higher density developments such as Treadlightly, indicate that higher density developments are feasible. Obviously, it is ultimately up to the township if a peer review is warranted, but it is normal practice to have a peer review done soon after a report is submitted so that any concerns or issues can be dealt with in a timely matter to be fair to the proponent.

Closing

We trust that the above comments provide adequate clarifications and responses to address comments received to allow the proposed development to be approved. Should there be any questions or further clarification required, feel free to contact us.

Yours truly,

Matthew Parfitt, P. Eng.
Senior Geological Engineer

Attachments:

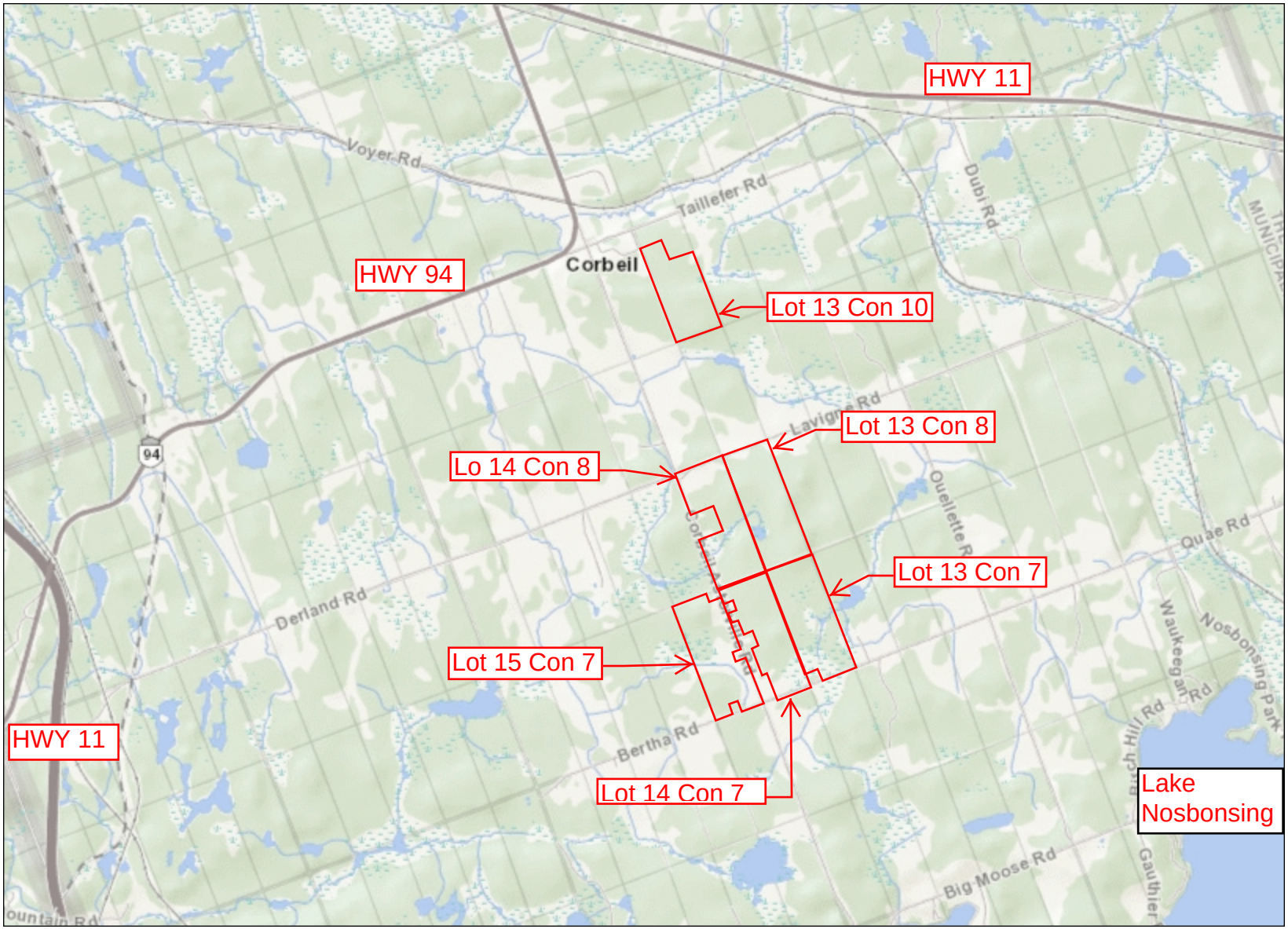
Figure 1 – Site Location Plan
Figure 2 – Draft Plan of Subdivision

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Figure 1 Site Location Plan



Legend

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

0 2.5 km

Projection: Web Mercator

DRAFT PLAN OF SUBDIVISION OF
PART OF LOTS 13 AND 14
CONCESSION 7
PART OF LOTS 13 AND 14
CONCESSION 8

TOWNSHIP OF EAST FERRIS

DISTRICT OF NIPISSING

TULLOCH GEOMATICS INC.

SCALE 1 : 2000

0 50 100 150m

2026

METRIC UNITS
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

LAND USE ANALYSIS

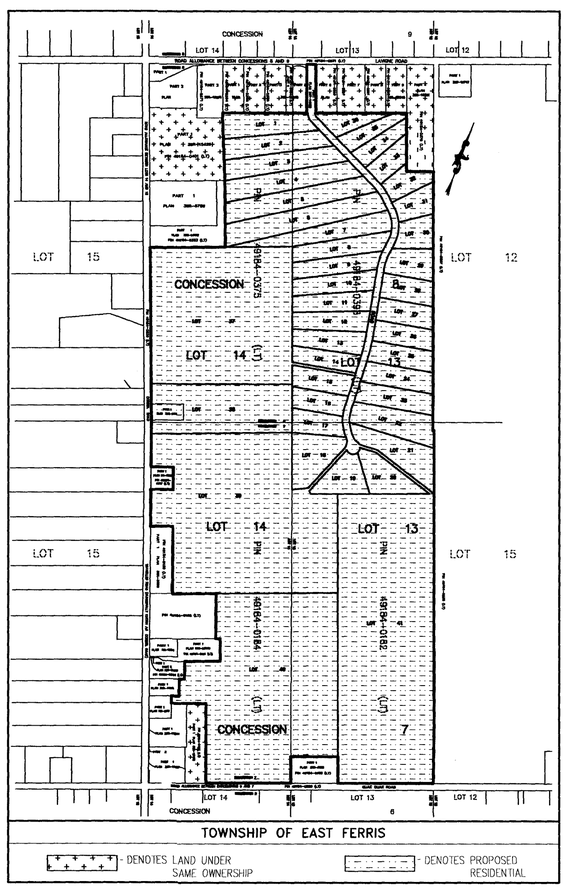
LOT/BLOCK/UNIT	INTENDED USE	No. OF UNITS	AREA (HECTARES)
LOTS 1 TO 41	RURAL	41	131.5672
ROAD	ROAD	1	2.5485
TOTAL		41	134.1157

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 (17) OF THE ONTARIO PLANNING ACT

(A) AS CERTIFIED ON THE FACE OF THE PLAN
(B) AS SHOWN ON THE FACE OF THE PLAN
(C) AS SHOWN ON THE FACE OF THE PLAN
(D) THE PURPOSE FOR WHICH THE LOTS ARE TO BE USED ARE; LISTED IN THE LAND USE ANALYSIS.
(E) THE EXISTING USES OF THE ADJOINING PROPERTIES ARE;
NORTH – RURAL
EAST – RURAL
SOUTH – RURAL
WEST – RURAL
(F) AS SHOWN ON THE FACE OF THE PLAN
(G) AS SHOWN ON THE FACE OF THE PLAN
(H) PRIVATE WATER SYSTEM
(I) THE NATURE AND POROSITY OF THE SOIL IS SANDY LOAM
(J) AS SHOWN ON THE FACE OF THE PLAN
(K) THE MUNICIPAL SERVICES TO BE AVAILABLE TO THE LANDS ARE;
EMERGENCY SERVICES– POLICE, FIRE, AMBULANCE
MUNICIPAL SERVICES – GARBAGE, RECYCLING, ROAD MAINTENANCE, SCHOOL BUSING, SNOW REMOVAL
PUBLIC SERVICES – ELECTRICITY, TELEPHONE, CABLE, INTERNET
(L) THERE IS NO DRAINAGE EASEMENT AFFECTING THE PROPERTY.

KEY PLAN

SCALE 1 : 10,000



OWNER'S CERTIFICATE

I HEREBY CONSENT TO THE FILING OF THIS DRAFT PLAN FOR DRAFT APPROVAL.

NORTH BAY, ONTARIO
Feb -10-2026, 2026

MARCEL DEGAGNE – PRESIDENT
I HAVE THE AUTHORITY TO BIND THE CORPORATION
1000328150 ONTARIO INC.
REGISTERED OWNER OF PINS 49184–0402 (LT), 49184–0398 (LT), 49184–0182 (LT) AND 49184–0404 (LT)

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJOINING LANDS ARE CORRECTLY SHOWN.

NORTH BAY, ONTARIO
FEBRUARY 3rd, 2026

R. D. MILLER
ONTARIO LAND SURVEYOR
FOR: TULLOCH GEOMATICS INC.

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTH LIMIT OF PART 4 AS SHOWN ON DEPOSITED PLAN 36R–15231, HAVING A BEARING OF N69°01'50"E.

TULLOCH GEOMATICS INC.
621 MAIN STREET WEST
UNIT B
NORTH BAY ON
P1B 2V6
T. 705–474–1210
F. 705–474–1783
northbay@tulloch.ca

DRAWN BY: M.M.WINTERFIELD | FILE No. 251527

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