Bear Brook Watershed Study – Watershed Planning and Policy Framework Characterization Report

January 2025

Prepared for:

Ottawa

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Summary of Findings

South Nation Conservation (SNC) acknowledges that the area of the Bear Brook is within the unceded traditional territory of the Algonquin people also known as the Anishinaabe people. We also acknowledge that this area is also the traditional and treaty lands of the Haudenosaunee people and acknowledge the other First Nations, Metis, and Inuit peoples in Canada.

The Province of Ontario recognizes that watersheds are the ecologically relevant scale for land use planning (MECP 2022). The City of Ottawa retained SNC to conduct a watershed study for the Bear Brook Watershed due to increasing urban development pressure and land use change. A three-year project is underway that consists of three phases of study, beginning with a detailed characterization of existing conditions within the watershed.

- A Technical Advisory Committee (TAC) was formed to guide the project comprising staff from the City of Ottawa, National Capital Commission, United Counties of Prescott and Russell, and SNC. The Algonquins of Pikwakanagan First Nation are invited to all TAC meetings.
- Indigenous land use in the Bear Brook Watershed is estimated to have begun 9000-2950 years ago and continues to the present day. The lands in the Bear Brook Watershed are the traditional lands of the Algonquin, Anishinaabe, Haudenosaunee, and Mohawk people.
- Governance in the Bear Brook Watershed is provided at the upper tier by the City of Ottawa and United Counties of Prescott and Russell. Russell Township, the City of Clarence-Rockland, and Nation Municipality govern at the lower tier.
- The National Capital Commission oversees management and land use over large areas of land in the Bear Brook Watershed and South Nation Conservation regulates hazard lands, watercourses, and wetlands.
- At least 69 archaeological assessments have been completed within the watershed and an archaeological potential model indicates that most of the Bear Brook Watershed has archaeological potential.
- Various legislation and policies apply to watershed planning in the Bear Brook Watershed and guide land use decisions.
- Over 78,000 people call the Bear Brook Watershed home, mainly living in settlement areas as opposed to rural areas.

Milestones for the Bear Brook Watershed Study generally follow the following timelines:

Phase 1: Completion of Existing Conditions Reports – Winter 2025

Phase 2: Scenario Planning and Impact Assessment – Fall 2025

Phase 3: Bear Brook Implementation Strategy – Winter 2026

Public consultation and opportunity for review and comment on the Existing Conditions Reports will occur in 2025.

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Disclaimer

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1. Introduction

Located on the traditional unceded territory of the Anishinaabe Algonquin People, the Bear Brook Watershed is a subwatershed of the South Nation River Watershed and encompasses an extensive network of wetlands, forests, rivers, and tributaries that drain into the South Nation River. The 488-square kilometer subwatershed generally flows west to east through a mixture of natural channels, wetlands and agricultural drains, eventually draining to the Bear Brook within the City of Ottawa and downstream to the United Counties of Prescott and Russell (Figure 1).

The City of Ottawa retained South Nation Conservation to conduct a watershed study for the Bear Brook Watershed due to continued increasing urban development pressure and land use change. This three-year project consists of several steps and three phases of study, beginning with a detailed characterization of existing conditions within the watershed. Due to the size and complexity of the Bear Brook Watershed, the characterization effort includes several chapters that provide an analysis of current conditions related to socioeconomic systems, water, natural hazards, natural heritage and the long-term trends affecting the watershed.

Characterization serves as a foundational step in the watershed study process, informing subsequent phases that will explore future scenarios related to changes in land use and climate change. A comprehensive assessment of the watershed will guide strategies to protect, restore, and enhance the natural systems of the Bear Brook Watershed to ensure sustainability into the future.

Ultimately, the study aims to produce a collaborative watershed implementation plan, with policy recommendations, tools, funding instruments and monitoring frameworks. The goal is to ensure the sustainable use of water resources, the protection of people and property from flood and erosion hazards, the continuation of ecosystem functions and services, and to provide an overall benefit to humans and the environment. As the Bear Brook Watershed continues to evolve, the implementation plan will provide essential guidance for its sustainable management, ensuring that both natural and human systems thrive amid ongoing societal, environmental, and land use changes.

This chapter begins by describing the Indigenous territory of the Bear Brook Watershed. Then, the demographic and socioeconomic status of the Bear Brook Watershed is detailed to scope and frame context for the subsequent information. The provincial and municipal policy context for the Bear Brook Watershed Study is explained and the Watershed Planning Framework is introduced with a policy and legislative inventory. Finally, the next steps in the Bear Brook Watershed Study are outlined.

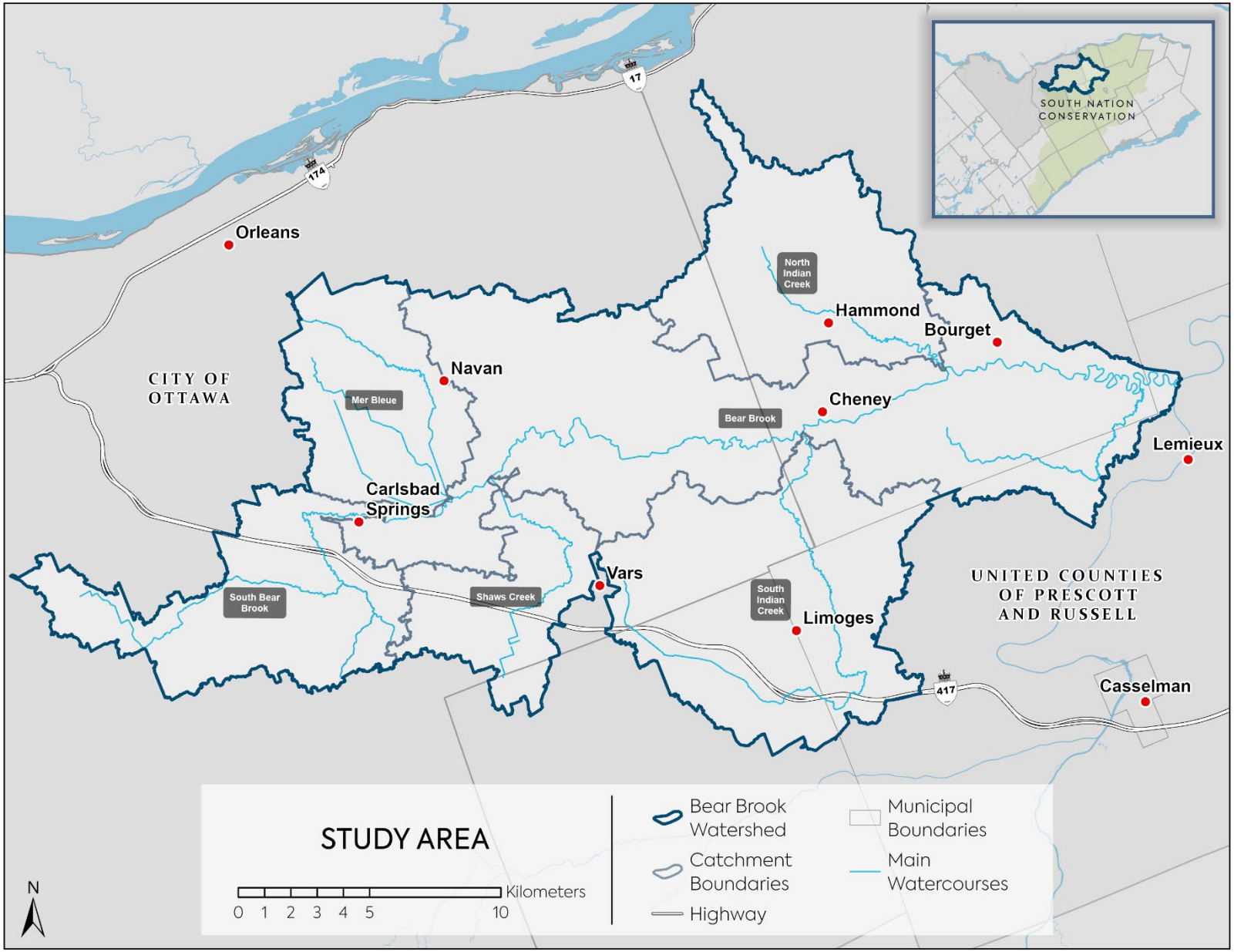

Figure 1. The Study Area and watershed boundary of the Bear Brook Watershed Study.

2. Indigenous Territory in the Bear Brook Watershed

Pre-European contact, the Algonquin Nation was well established in the Ottawa Valley and its tributary river systems; archaeological evidence reveals that the Algonquin people resided in this land for over 8000 years (AOO 2013). Indigenous land use in the Bear Brook Watershed is estimated to have begun 9000-2950 years ago and continues to the present day (True North Archaeological Services 2024). While there are no known Indigenous archaeological sites within the Bear Brook Watershed study area, sites have been found in the surrounding area near the City of Ottawa (True North Archaeological Services 2024). This suggests that Indigenous people were likely present and moving through the Bear Brook Watershed (True North Archaeological Services 2024). The lands in the Bear Brook Watershed are the traditional lands of the Algonquin, Anishinaabe, Haudenosaunee, and Mohawk people (Native Land Digital 2024).

Archaeological Screening

Archaeological assessments are crucial for Indigenous peoples because they provide tangible evidence of their ancestors' lives, cultures, and history. These assessments can help to verify traditions, identify sacred sites, and understand the complex relationship between Indigenous communities and the land. By uncovering the material remains of their past, Indigenous peoples can strengthen their cultural identity, advocate for their rights, and reclaim their ancestral heritage.

In addition to potential Indigenous archaeological significance, there exists the potential for sites of early European settlement in the Bear Brook Watershed. This period would mark the beginning of the transformation of the natural environment and resources of the area.

An archaeological screening of the Bear Brook Watershed was completed by True North Archaeological Services Inc. This type of screening was initiated to better understand what existing information was available with respect to archaeological history in the Bear Brook Watershed and what type of information and studies should be considered in the future.

The methodologies, results, key findings, and priorities of the screening are outlined in the Archaeological Screening Report, Bear Brook Watershed, 2024 which is included in Appendix A.

3. Governance in the Bear Brook Watershed

3.1. Municipalities

The Bear Brook Watershed covers a portion of the jurisdiction of several municipalities. The Bear Brook originates within the jurisdiction of the City of Ottawa, an upper-tier municipality, and flows eastwards through the lower-tier municipalities of Russell Township, the City of Clarence-Rockland, and Nation Municipality, within the upper-tier United Counties of Prescott and Russell. Figure 2 shows the municipal boundaries within the Bear Brook Watershed.

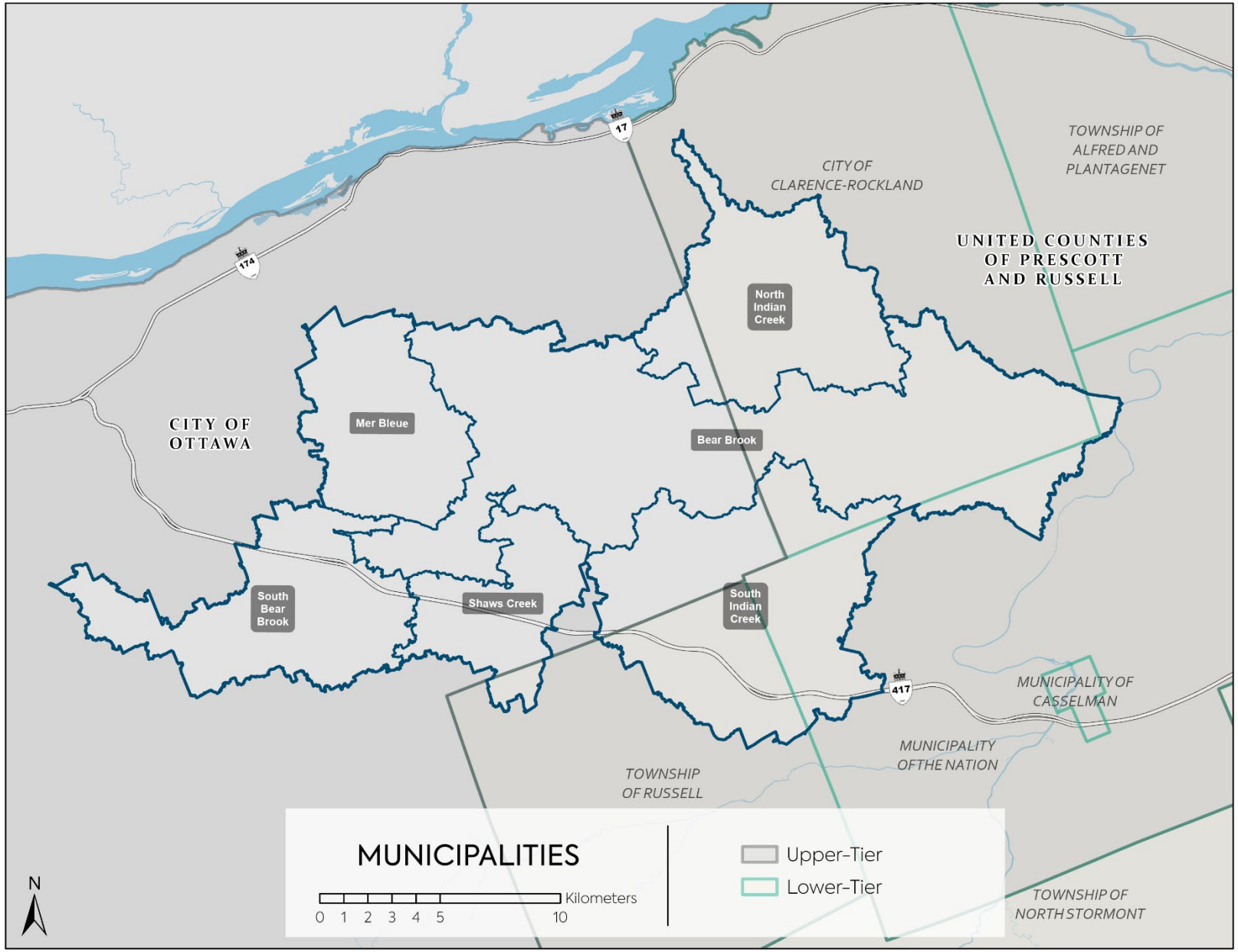

Figure 2. The Upper- and Lower-Tier Municpalities of the Bear Brook Watershed.

3.2. The National Capital Commission

The National Capital Commission (NCC) is the federal Crown corporation dedicated to ensuring that Canada's Capital is a dynamic and inspiring source of pride for all Canadians, and a legacy for generations to come. The NCC is a federal Crown corporation created by Canada's Parliament in 1959 under the *National Capital Act*. Its predecessors were the Federal District Commission, created in 1927, and the Ottawa Improvement Commission, created in 1899. The NCC is subject to the accountability regime set out in Part X of the *Financial Administration Act*. It reports to Parliament through the minister designated as minister responsible for the *National Capital Act.*

Building on more than a century of experience, the NCC provides unique value in the Capital Region by fulfilling three specific roles: long-term planner of federal lands, principal steward of nationally significant public places, and creative partner committed to excellence in development and conservation. As such, the NCC has an important role to play in protecting cultural, natural and archaeological resources and managing them as part of Canada's legacy. The NCC is the main federal urban planner in Canada's Capital Region and in this role works in collaboration with stakeholders to enhance the natural and cultural character of the Capital.

Within the Bear Brook Watershed, the NCC manages the Greenbelt, comprising of 20,000 hectares of green space, including farms, forests and wetlands (Figure 3). It was created in the 1950s to protect the rural land bordering the Capital from urban sprawl. It has since become the largest publicly owned greenbelt in the world. Most of the Greenbelt (14,950 hectares) is owned by the NCC. The Greenbelt protects natural areas like forests, wetlands, streams and sand dunes that sustain biodiversity and support human and ecological health in the National Capital Region.

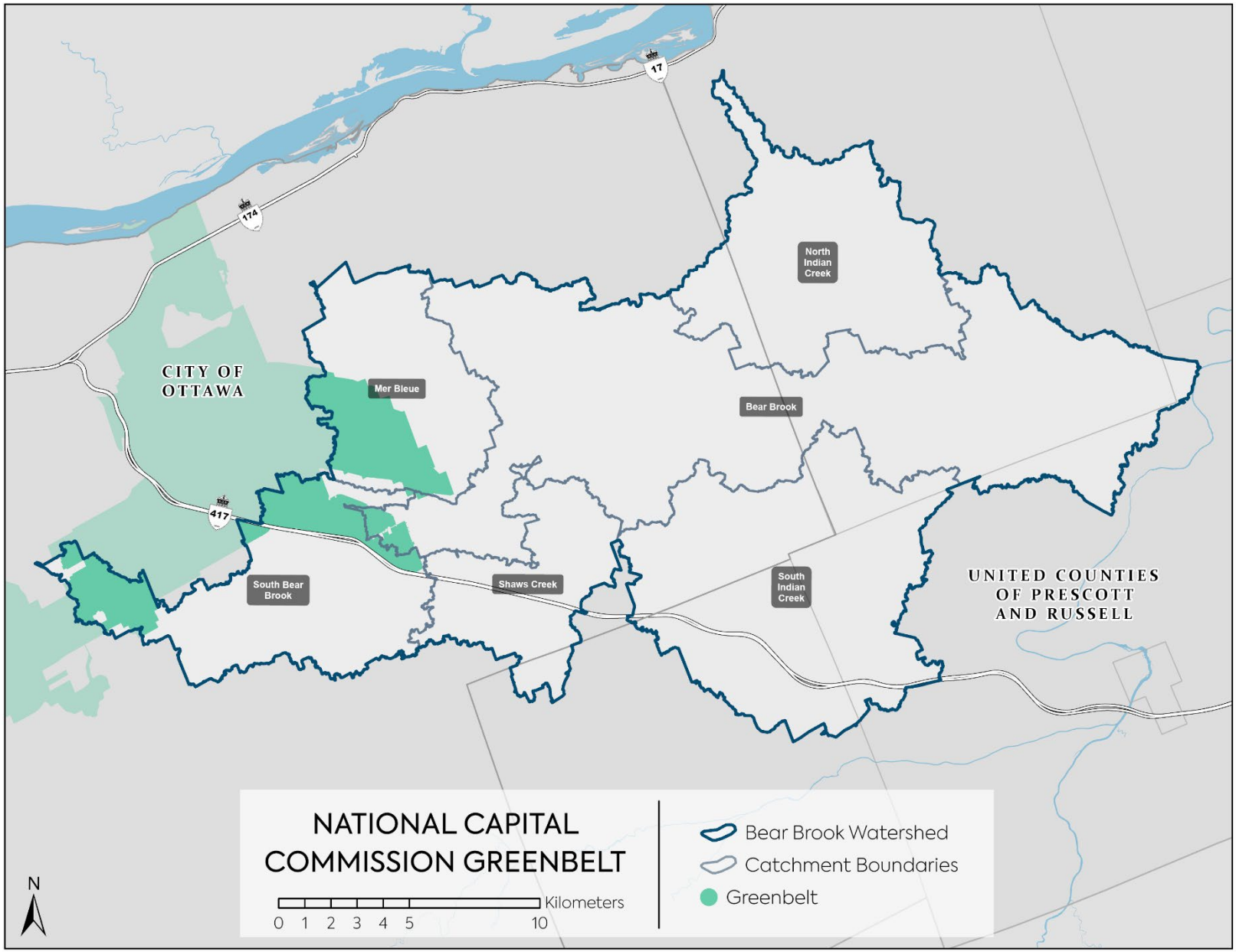

Figure 3. Lands owned by the National Capital Commission in the Bear Brook Watershed.

3.3. South Nation Conservation

In Ontario, conservation authorities develop and deliver local, watershed-based resource management programs on behalf of the province and municipalities. Conservation authorities are local public sector organizations established by the province and governed by the *Conservation Authorities Act*.

Each conservation authority was established by the province so that municipalities in a common watershed could work together on local resource management. Each conservation authority's membership is appointed by these participating municipalities, as set out in the *Conservation Authorities Act*.

Additionally, under the *Clean Water Act*, conservation authorities have a legislated role as source protection authorities in the provincial drinking water source protection program.

There are 36 Conservation Authorities located across Ontario. The Bear Brook is a tributary of the South Nation River and falls within the jurisdiction of South Nation Conservation under both the *Clean Water Act* and the *Conservation Authorities Act*.

South Nation Conservation was established in 1947 and has a strong history in watershed management and leadership in environmental planning. SNC's jurisdiction encompasses 4,480 km^2 across 16 member municipalities within the United Counties of Prescott and Russell; United Counties of Stormont, Dundas and Glengarry; United Counties of Leeds and Grenville; and the City of Ottawa.

SNC works with its member municipalities and the Province of Ontario to protect people and property within its jurisdiction by regulating development in areas prone to flooding and other natural hazards. SNC's work also includes management of conservation lands, including Conservation Areas that are open to the public for passive recreation, monitoring of watershed conditions across the SNC jurisdiction, and ecological stewardship and restoration. In addition, the 2024 Provincial Policy Statement (PPS) encourages municipalities undertaking watershed planning to collaborate with the local conservation authority to ensure effective and coordinated watershed management.

4. Demographic Profile of the Bear Brook Watershed

The Bear Brook Watershed has experienced considerable population growth over the past decade and is projected to continue to grow in population (Ontario Population Projections, 2021). Watershed planning needs to account for the interplay between environmental sustainability and socio-economic pressures and to find balance between these factors so that community resiliency can be attained. Central to understanding watersheds and effectively managing complex socio-ecological systems is the idea that humans are part of the system and not external to it (Callicot et al., 1999, Scown et al., 2017).

The vulnerability of residents and businesses to natural hazards and resources is linked to the sustainability of the environment and communities within the Bear Brook Watershed. Therefore, it is important to understand the socio-economic fabric of the watershed to understand where people are most vulnerable to environmental impacts and change. Assessing vulnerability will be an important component of future impact assessments related to water resources, natural hazards and natural heritage. Table 1 presents information from the 2021 Census of Population for various parameters of interest to provide context for who lives in the Bear Brook Watershed (Canada, 2021).

Table 1. Canada Census of Population Data (Statistics Canada, 2021) for Dissemination Areas Contained in the Bear Brook Watershed.

2021 Census of Population Statistic (Statistics Canada, 2021)	Result
Sum of Population (2021)	78,687
Average Age	40
Percent of Individuals 0 to 14 in Age	18%
Percent of Individuals Over Age of 65	14%
Total Number of Dwellings	27,393
Average of Median Household Income	$118,692
Average Percentage of People with Low Income (Low-income Measure threshold is calculated as 50% of the median adjusted after-tax income of private households)	5%

Figure 4 presents the geospatial location of populations in the Bear Brook Watershed by dissemination area. Dissemination areas (DA), are small, standardized geographic units used by Statistics Canada for the reporting of census data (Statistics Canada, 2022). It is the smallest area for which all census data are made publicly available. DA's are designed to be relatively uniform in terms of population size, typically containing between 400 and 700 people. Data is provided for all DA's contained within the Bear Brook Watershed even though a portion of the DA may be outside of the watershed boundary.

Statistics Canada data is themed to display natural breaks in the data using an ArcMap classification method called natural breaks or "jenks". Jenks classification seeks to minimize the variance within classes and maximize the variance between classes. It identifies "natural breaks" in the data, where there are significant jumps in values, and creates classes accordingly.

Overall, populations are low across large expanses of the Bear Brook Watershed, while populations of people are concentrated in specific DA's. These include the headwaters of South Bear Brook and Mer Bleue catchments in the City of Ottawa and the villages of Limoges and Bourget in the United Counties of Prescott and Russell. Figure 4 displays population by DA, while Figure 5 displays population density.

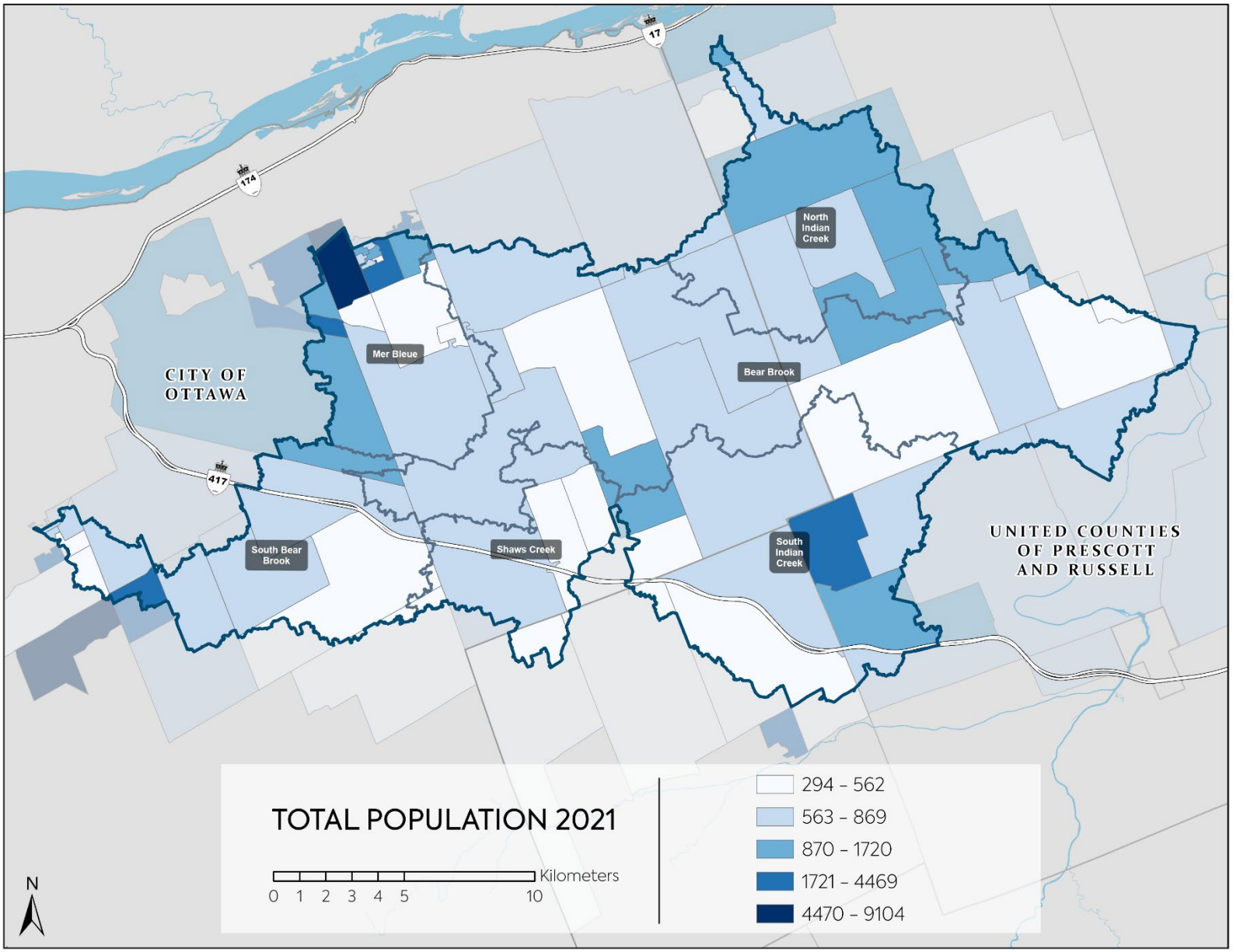

Figure 4. Total population by dissemination area in the Bear Brook Watershed according to Statistics Canada Census of Population (2021).

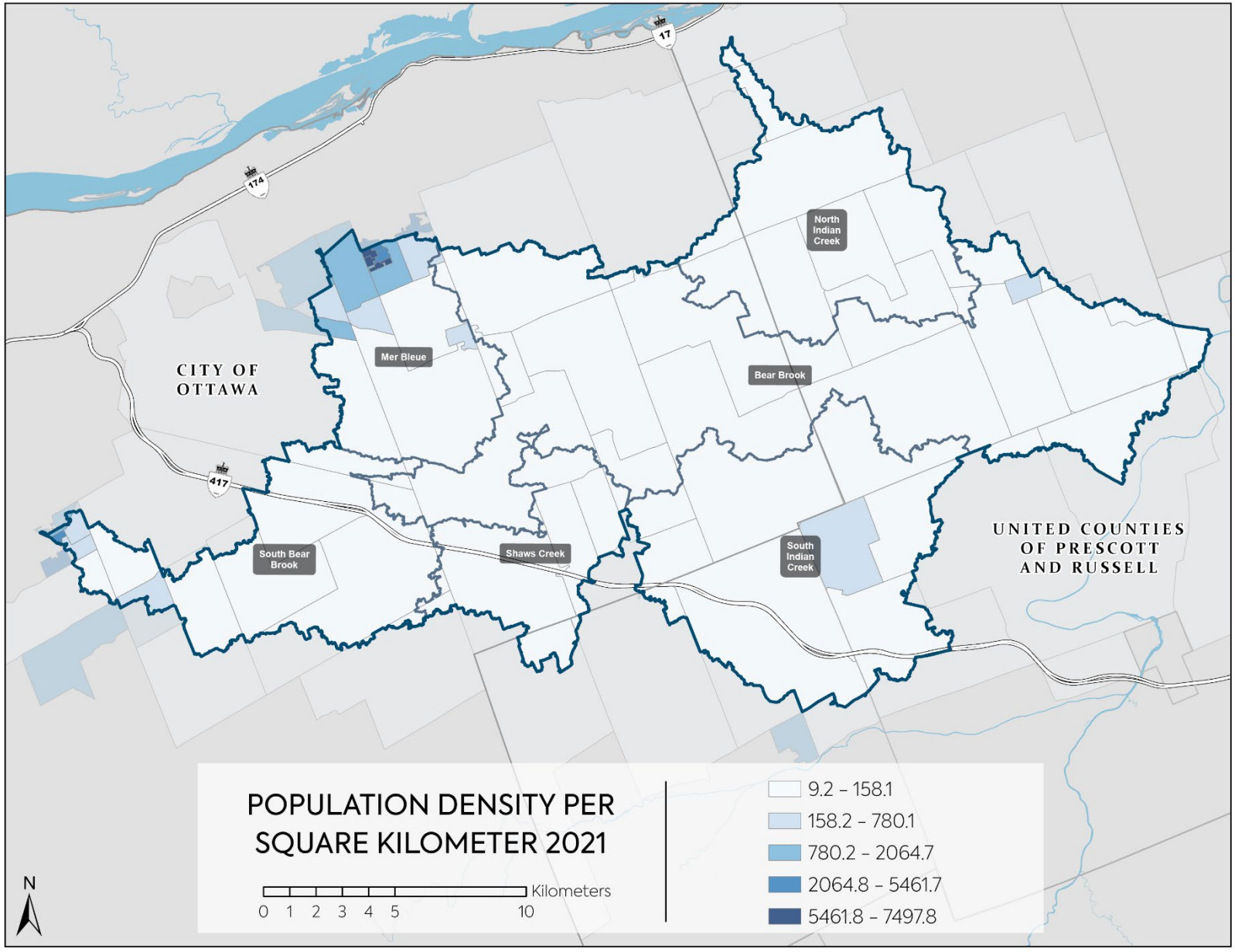

Figure 5. Population density by dissemination area in the Bear Brook Watershed according to Statistics Canada Census of Population (2021).

5. Watershed Planning

5.1. History of Watershed Planning in Ontario

The watershed planning concept and approach to land use planning has been encouraged in Ontario since as early as 1993 with the release of the Provincial Subwatershed Planning Guide. The Guide was created to support the consistent application of Ministry programs and to encourage municipalities to collaboratively address cross-boundary issues on a watershed basis. It was also the intent that Ministries gather experience to support the development of methods and processes for applying water management policies in the municipal land use planning process.

Watershed planning has been referenced in Provincial policy since at least 2005 through the Provincial Policy Statement, a document that establishes matters of Provincial interest in local land use planning and development. This important document encouraged municipalities to take a coordinated, integrated and comprehensive approach for planning matters within and across administrative boundaries for matters impacting ecosystem, shoreline and watershed related systems. The watershed was to be used as the ecologically meaningful scale for protecting and improving water quality and quantity and flood hazard limits were to be considered at the watershed scale when exceeding the 1:100-year flood standard in some regions of the province.

The support for watershed planning has been renewed and strengthened in Ontario in recent years. The Subwatershed Planning Guide was updated by the Province of Ontario and circulated for feedback in 2022. Although this document remains in draft form, it provides a useful resource for watershed planning, which is encouraged, or required in some cases, under the 2024 Provincial Planning Statement (PPS), which replaced the 2020 Provincial Policy Statement. The PPS retains the earlier supportive watershed policies and adds important new policy direction. It states that large and fast-growing municipalities, including the City of Ottawa, shall undertake watershed planning to inform planning for sewage and water services and stormwater management, and the protection, improvement and restoration of the quality and quantity of water. The watershed is noted to be the appropriate scale to consider cumulative impacts of development on stormwater management and may inform the identification of water resources systems to promote ecological and hydrological integrity. A watershed planning definition is provided which states:

"Watershed Planning means planning that provides a framework for establishing comprehensive and integrated goals, objectives, and direction for the protection, enhancement, or restoration of water resources, including the quality and quantity of water, within a watershed and for the assessment of cumulative, cross jurisdictional, and cross-watershed impacts. Watershed planning evaluates and considers the impacts of a changing climate on water resource systems and is undertaken at many scales. It may inform the identification of water resource systems."

Finally, new policies explicitly recommend collaboration between upper and lower tier municipalities, along with conservation authority partners. Through the Watershed Planning Framework, collaboration with Indigenous communities, members of the public and other interested stakeholders is also encouraged.

5.2. The Watershed Planning Framework

A watershed/subwatershed is delineated by the drainage boundary of a river and its tributaries. Whereas conservation authority administrative boundaries generally align with watersheds, municipal boundaries and the scale of municipal development review generally do not. As a result, approved development and unmanaged land uses in one jurisdiction can negatively impact water resources in another, causing significant issues for neighbouring municipalities. Watershed planning attempts to address this risk.

In addition to the benefits accrued to surface water ecology and hydrology highlighted in the 2024 PPS, planning at the watershed scale can mitigate potential risks of natural hazards to public health and safety, reduce negative and costly impacts to private property and infrastructure, and help protect drinking water resources. Watershed planning can be an effective land use planning approach as it helps to integrate the priorities of stakeholders over the long term (in the current case, the City of Ottawa and United Counties of Prescott and Russell). This is particularly useful for a municipality when managing competing land uses and planning for water, wastewater and storm water servicing.

A watershed plan developed in anticipation of growth pressures can streamline the approval process by establishing clear constraints and opportunities. It can evaluate and mitigate upstream, downstream and cumulative effects as well as the potential impacts of climate change. It can inform the allocation of municipal growth and facilitate complete and diverse communities that operate within natural constraints.

Watershed planning broadly has two purposes.

- It establishes a baseline of watershed conditions; and
- It works with stakeholders within the watershed to identify and prioritize opportunities and constraints for human land use and activities.

The outcomes of a watershed planning process will directly impact a variety of stakeholders: land managers and approval agencies; sectors of industry such as the agricultural, development, and aggregate industries; Indigenous communities; special interest groups and environmental organizations; and individual landowners and businesses.

Outcomes may be reflected in municipal official plans and zoning by-law policies and schedules. They may support growth management strategies and Environmental Compliance Approvals for stormwater management systems. Effective watershed planning recognizes the relationships between these stakeholders and includes them in the creation and implementation of the plan to

foster a shared vision, and a common understanding of the specific criteria, objectives, actions, thresholds, targets and best management practices that may result from the planning process.

The watershed planning process involves five steps as shown in Figure 6, taken from the draft Subwatershed Guide (2022).

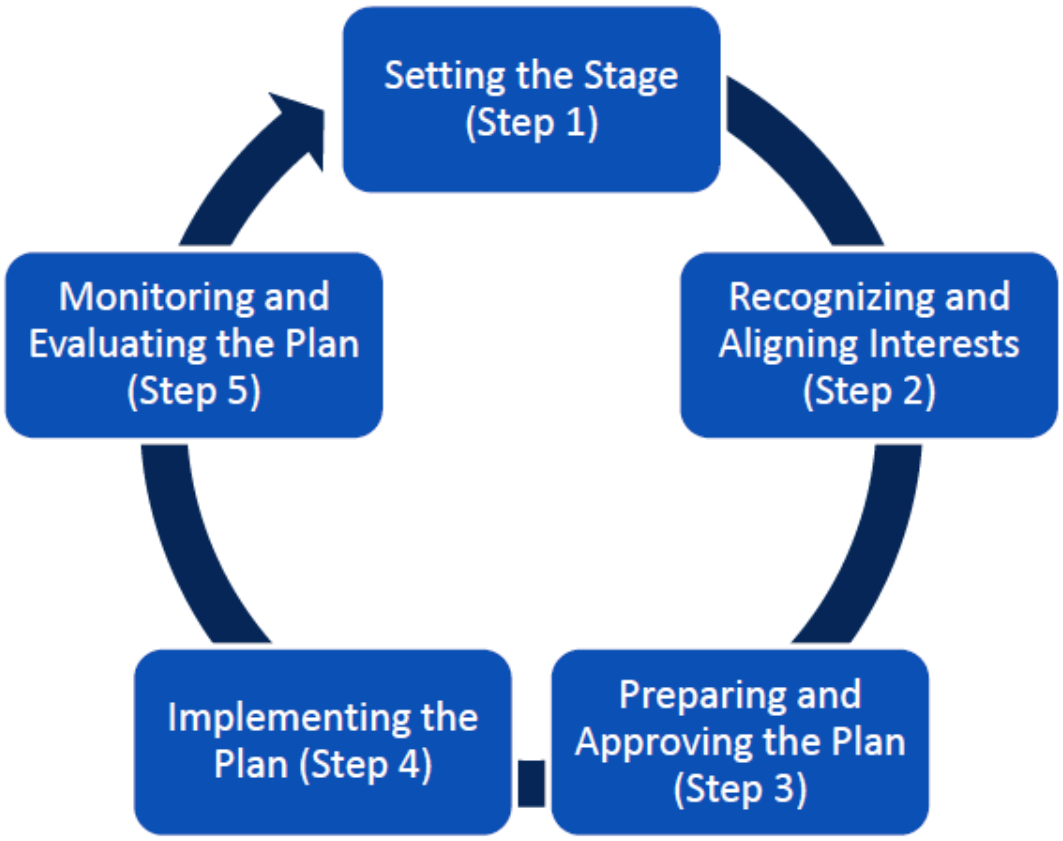

Figure 6. The five steps of the Watershed Planning Process.

Step 1: The initial stage identifies the partners and establishes agreement at a high level of the purpose, timing, geography and desired outcomes of the exercise. A lead agency is selected, agency responsibilities are discussed, and funding is confirmed.

Step 2: Formalizes the relationship and expectations of the partners with formal agreements and a Terms of Reference for the project. A Steering Committee, representing the stakeholders, and working groups may be developed at this step to oversee and undertake the work.

Step 3: Involves the creation and approval of Watershed Study documents. For the Bear Brook Watershed Study this involves separate phases with milestones and outputs including the following:

PHASE 1: Characterizing Existing Conditions

This involves the collection of existing technical studies and data, monitoring and collection of new data where necessary to assess the current state of the watershed. According to the draft Subwatershed Planning Guide (2022), analyses should include:

- Characterization of land uses and land cover, including significance and sensitive natural features and systems;
- Identification of hydrologic features, areas and functions and the inter-relationships between them;
- Development of a water budget;
- Identification and modelling of natural hazards; and
- Water quality assessment.

PHASE 2: Developing and Identifying Scenarios and Evaluating and Selecting a Preferred Land Use Scenario.

Modelling and scenario-testing are then employed by the partners to assess development impacts on the water resource system and natural heritage system. A technical assessment of land use scenarios using a water budget analysis and climate change scenarios sheds light on potential impacts to drainage, natural hazards, natural features, existing and planned development and critical infrastructure in the Bear Brook Watershed. Scenario-testing may identify land use alternatives, mitigation practices and opportunities for restoration and enhancement works. Once a draft scenario is identified that is acceptable and achieves the stated objectives of the planning exercise, it can be circulated to the broader public and stakeholders for feedback. According to the draft Subwatershed Planning Guide (2022), analyses should include:

- Climate change projections, and consideration of impacts;
- Scenario modelling and assessment of impacts of growth projections, servicing options and mitigation measures; and
- Objectives, strategies and targets for land and water management.

PHASE 3: Developing Strategies for Implementation, Monitoring, and Adaptive Management.

Recommendations for land use planning policies are formalized into an implementation plan, and monitoring and management responsibilities of participants are defined. Implementation policies and funding instruments are also outlined. Where information gaps or urgent issues have been noted, follow-up recommendations should be provided. According to the draft Subwatershed Planning Guide (2022), the following should be detailed:

- Recommendations for the protection of hydrologic features, areas and functions;
- Criteria for evaluating the protection of water quality and quantity;
- Targets for riparian area protection and restoration;

- Direction for applying environmental best management practices, programs and performance measures; and
- Environmental monitoring plan.

Step 4: The implementation plan is approved by municipalities and is adopted into municipal planning documents. The participating agencies continue to play an important role by endorsing the plan and implementing recommendations through the scope of their mandates.

Step 5: Development of a monitoring and evaluation plan to determine whether the objectives of the plan are being realized and where interventions should occur. Monitoring trends and key indicators is critical for guiding the process and ultimately achieving long term success. It is recommended that a monitoring program be established based on a Terms of Reference with clearly defined agency responsibilities. The monitoring program should continue to engage the partners, stakeholders and larger public to maintain their engagement and support. The plan should be updated at an interval that reflects changes in the watershed, updates to information, and changes to technology.

6. The Bear Brook Watershed Study

Section 4.9.1 of the City of Ottawa Official Plan details the City's commitment to preparing watershed and subwatershed plans to inform land use decision making. A commitment to preparing and updating watershed and subwatershed plans is made, prioritizing areas experiencing development pressure, and changing land uses. Further, the City recognizes that Conservation Authorities are well positioned to provide watershed planning expertise by allowing them to lead the development of watershed plans.

The need for the Bear Brook Watershed Study was triggered by existing and proposed communities within the City of Ottawa in the headwaters of the Bear Brook Watershed, including the Tewin Community, the East Urban Community and the South Orleans Urban Expansion Areas. The City of Ottawa retained South Nation Conservation to develop a Terms of Reference for the Study, and a contribution agreement between the City of Ottawa and South Nation Conservation was signed in June 2023.

A Technical Advisory Committee was formed comprising of staff from the City of Ottawa, National Capital Commission, United Counties of Prescott and Russell and South Nation Conservation. Additional guests invited to TAC meetings include Algonquins of Pikwakanagan First Nation. Milestones for the Bear Brook Watershed Study generally follow the following timelines:

Phase 1: Completion of Existing Conditions Reports – Winter 2025

Phase 2: Scenario Planning and Impact Assessment – Fall 2025

Phase 3: Bear Brook Implementation Strategy – Winter 2026

6.1. Planning Policy Context in the Bear Brook Watershed

As stated above, Provincial policies require municipalities to use the watershed as the ecologically meaningful scale for integrated and long-term planning. As part of the watershed characterization, South Nation Conservation, in collaboration with its municipal partners, has compiled an inventory of existing policies that are relevant to the overall planning of the Bear Brook Watershed. This inventory does not assess the effectiveness of these policies but rather, opportunities for improving policies and their implementation will be identified in subsequent stages of the watershed planning process.

As part of the inventory of existing policies, Official Plans, Master Plans, major strategies, Secondary Plans, development standards or guidelines and municipal by-laws were reviewed. As municipal plans and policies are regularly updated, this inventory is not intended to be exhaustive, but rather to provide a general overview of the existing policy framework as it relates to the Bear Brook Watershed. Furthermore, this inventory does not list studies or Environmental Assessments related to infrastructure planning or natural hazard mitigation.

Within the Bear Brook Watershed, land use management and change, along with the protection and conservation of natural resources is the responsibility of landowners, municipalities, federal and provincial agencies, and conservation authorities. Planning policy is determined by a combination of:

- Provincial legislation, policy statements, and guidelines;
- Municipal legislation, such as Official Plans and Zoning by-laws, as well as strategic plans, master plans, and guidelines at the municipal level;
- Conservation Authority policies and guidelines;
- Plans and strategies of the National Capital Commission;
- Consultation with Indigenous communities; and
- Public consultation.

7. Legislative Framework

7.1. Planning Policy Framework in Ontario

The responsibility for long-term planning in Ontario is shared between the province and municipalities. The province sets the ground rules and directions for land use planning through the Planning Act and PPS. The legislative requirements and policies set out by the province are applied to the local level through the Official Plan, Secondary Plans, Zoning By-laws, and municipal guidelines, master plans, and strategies. The hierarchy of planning policy documents in Ontario is illustrated in Figure 7 below.

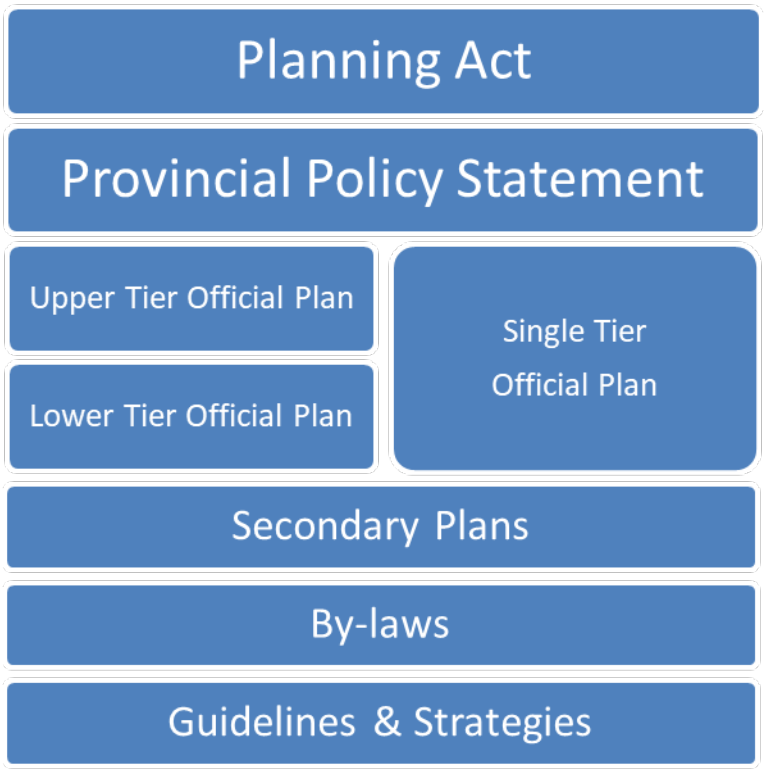

Figure 7. The Hierarchy of planning policy documents in Ontario.

7.2. Planning Act

The *Planning Act* is provincial legislation that sets out the ground rules for land use planning in Ontario. It describes how land uses may be controlled, and who may control them.

The *Planning Act*:

- provides for planning processes that are fair by making them open, accessible, timely and efficient;
- promotes sustainable economic development in a healthy natural environment within a provincial policy framework;

- provides for a land use planning system led by provincial policy;
- integrates matters of provincial interest into provincial and municipal planning decisions by requiring that all decisions be consistent with the Provincial Planning Statement and conform/not conflict with provincial plans;
- encourages co-operation and coordination among various interests; and
- recognizes the decision-making authority and accountability of municipal councils in planning.

The Planning Act identifies the roles, rights, and responsibilities of different stakeholders in the planning process, including the Province, municipalities, individual landowners and residents. It provides the basis for considering provincial interests, such as providing for a full range of housing options, including affordable housing, and protecting and managing our natural resources. The Planning Act defines the approval process for various planning applications, such as subdivisions, consents, Official Plan amendments, Zoning By-law amendments, minor variances, and Site Plan control. It also sets the requirements for Municipalities to follow when preparing official plans and planning policies that will guide future development.

7.3. Provincial Planning Statement

The Provincial Planning Statement (Ontario, 2024) is a streamlined province-wide land use planning policy framework that provides municipalities with the tools and flexibility they need to build more homes. It enables municipalities to:

- plan for and support development, and increase the housing supply across the province
- align development with infrastructure to build a strong and competitive economy that is investment-ready
- foster the long-term viability of rural areas
- protect agricultural lands, the environment, and public health and safety.

The PPS 2024 requires large and fast-growing municipalities, including the City of Ottawa, to undertake watershed planning. Collaboration with Conservation Authorities is encouraged.

Generally, when decision-makers exercise any authority that affects planning matters, the *Planning Act* requires that they “shall be consistent with” the PPS. This means that a decision-maker must ensure that the policies in the PPS are applied as an essential part of the land use planning decision-making process. Decision makers implement the PPS in the context of other planning objectives and local circumstances.

7.4. Municipal Act

The *Municipal Act* is a consolidated statute governing the extent of powers and duties, internal organization and structure of municipalities in Ontario. It sets out rules for Ontario municipalities (excluding the City of Toronto, which has its own separate Act) and recognizes them as a responsible and accountable level of government. The *Municipal Act* gives municipalities broad powers to pass bylaws and govern within their jurisdiction. The act also outlines requirements for municipalities including practices and procedures, accountability and transparency, and finance.

7.5. Conservation Authorities Act & Ontario Regulation 41/24

Conservation Authorities are governed by the *Conservation Authorities Act*, which is administered by the Ministry of Natural Resources. The *Conservation Authorities Act* was legislated by the Province of Ontario in 1946 in response to poor forestry practices, drought, deforestation, soil loss, and flooding concerns. The *Conservation Authorities Ac*t provided a means by which the Province and the municipalities of Ontario could join to form an authority based on watershed boundaries to manage programs for natural resources at a local level.

Ontario Regulation 41/24 - Prohibited Activities, Exemptions and Permits, made under Part VI of the *Conservation Authorities Act*, came into effect on April 1, 2024, and consolidated the existing 36 distinct Conservation Authority regulations. Previously, there was an SNC specific regulation: *Ontario Regulation 170/06 South Nation River Conservation Authority: Development, Interference with Wetlands and Alteration to Shorelines and Waterways.*

Ontario Regulation 41/24 makes SNC permission necessary to undertake development in:

- an existing channel of a river, creek, stream, or watercourse;
- wetlands;
- river or stream valleys;
- hazardous lands; and
- areas affected by flooding, erosion, or dynamic beaches.

A section on SNC Regulation Policies to administer Ontario Regulation 41/24 and the *Conservation Authorities Act* is found below.

8. Municipal Planning Policies

Provincial policies require municipalities to use the watershed as the ecologically meaningful scale for integrated and long-term planning.

The following table lists the municipal plans, strategies, guidelines, by-laws, and standards in effect in the Bear Brook Watershed.

Table 2. Municipal planning policy documents in effect in the Bear Brook Watershed.

Municipality	Official Plans and Secondary Plans	Master Plans / Major Strategies	By-laws, Guidelines & Standards
City of Ottawa	City of Ottawa Official Plan Consolidated Villages Secondary Plan Mer Bleue Developing Neighbourhood Secondary Plan East Urban Community Phase 3 Secondary Plan	Transportation Master Plan Infrastructure Master Plan Climate Change Master Plan	City of Ottawa Zoning By-law Tree Protection By-law Site Alteration By-law Hydrogeological and Terrain Analysis Guidelines Slope Stability Study Water Budget Assessment Wellhead Protection Study Environmental Impact Study Guidelines Environmental Management Plan
United Counties of Prescott and Russell	Official Plan of the United Counties of Prescott and Russell	Economic Development Strategy and Action Plan	
Russell Township	Russell Township Official Plan	Township of Russell Transportation Master Plan Update	
City of Clarence-Rockland			City of Clarence-Rockland Zoning By-law Design Guidelines: Subdivisions and Site Plans
Nation Municipality	Bourget Official Plan		Nation Municipality Zoning By-law

8.1. Official Plans

The primary method of planning at the municipal level is the Official Plan (OP). This is a legal document that is used by the council and landowners as a decision-making guide. The OP sets out objectives and policies that establish the basis for land pattern change and for protecting and conserving natural resources. To implement the OP policies and objectives, municipalities pass zoning by-laws which establish certain land use rights on individual properties. Area municipalities approve the creation of new lots and their supporting services through plans of subdivision and consents to sever.

At present, the study area is covered by four OPs:

- The City of Ottawa Official Plan;
- The Official Plan of the United Counties of Prescott and Russell (UCPR OP);
- The Russell Township Official Plan; and
- The Bourget Official Plan (within the City of Clarence-Rockland).

The following is a summary of the basic policies directing development with respect to natural resources as contained in the OPs of the Bear Brook Watershed.

8.1.1. Water Resources

Both the City of Ottawa and the United Counties of Prescott and Russell Official Plans contain policies regarding water resources. These policies are intended to protect surface water and groundwater resources for future generations.

The City of Ottawa OP section 4.9 – Water Resources identifies the following actions to be taken to protect water resources:

- Development of Watershed and Subwatershed plans to protect, improve, or restore the quality and quantity of surface water features and groundwater features and to guide growth, intensification, and development. The development of these plans will be led by Conservation Authorities and shall include consideration of future climate conditions.
- Keep watercourses in a natural state while managing erosion, slope stability and flooding concerns.
- Restrict or limit development and site alteration near surface water features by implementing development setbacks from watercourses.
- Ensuring that development and site alteration near groundwater features does not impact their hydrologic functions.

The UCPR Official Plan Section 5.5.10 River Corridors seeks to encourage the preservation of shoreline areas in order to enhance the recreational and economic benefits which can be derived from enhanced public access and the preservation of natural shoreline states. Policies

include requiring setbacks from watercourses and waterbodies and encouraging public ownership of shoreline lands through the development approvals process.

8.1.2. Significant Groundwater Recharge Areas

The UCPR OP Section 5.5.9.2 sets policies for Significant Groundwater Recharge Areas and requires major developments in these areas to prepare a water budget to assess mitigation measures to maintain a given water budget state.

Significant Groundwater Recharge Areas were identified as part of the initial implementation of the Clean Water Act within the Raisin-South Nation Source Protection Region. The mapping of Significant Groundwater Recharge Areas (SGRAs) within a Source Protection Region (SPR) was a requirement under the Clean Water Act to provide regional water budget insight.

An SGRA is defined as an area where groundwater is recharged at a rate of 1.15 or greater than the average recharge rate for the SPR.

The average groundwater recharge rate for the Raisin-South Nation SPR (with a land mass of approximately 7000 km²) was estimated to be 183mm/year; therefore, SGRAs are present where the estimated groundwater recharge exceeds 208.5 mm.

The SGRA mapping is based on regional-scale data. The groundwater recharge is a function of the precipitation, surficial geology (i.e. soil type), slope, and land cover.

SGRAs are generally found where infiltration rates are higher (e.g. gravel and/or sandy soils). SGRAs are not generally associated with areas where there are significant clay deposits.

Local-scale assessments are more suitable to evaluate the impacts on groundwater recharge.

Generally, a site-specific assessment at the Site Plan stage (or plan of subdivision) demonstrating a hydrologic balance can be maintained through pre/post land cover, drainage, and stormwater management should be adequate to demonstrate minimal impacts to groundwater recharge.

8.2. Official Plan Land Use Schedules

Land use designations establish the permitted uses on any parcel of land. Within the Bear Brook Watershed, the most predominant land use designations are rural and agricultural. Other land use policy designations in the area include Provincially Significant Wetlands, urban areas and villages, and industrial areas. Land use schedules are identified in the City of Ottawa Official Plan (2023) and the UCPR Official Plan (2022).

8.2.1. Settlement Areas

Within the Bear Brook Watershed, several communities have been identified in municipal Official Plans as Settlement Areas; areas to which development will be directed.

Urban Areas are areas where full municipal water and sewer services are available. These areas are the focus of growth. They permit a density of development and the permitted land uses include residential, commercial, and institutional uses. The community of Limoges is designated as an Urban Area in the UCPR OP.

The Urban Policy Area of the UCPR OP permits a range and mix of low, medium and high-density housing types, including affordable housing; institutional uses, community facilities, retail, service, and business uses, recreational facilities, and open spaces within the community core areas; and the establishment of commercial and industrial areas.

Villages (within the City of Ottawa) and Community Policy Areas (within the United Counties of Prescott and Russell) are smaller rural settlement areas where municipal services may not be available, or where municipal water is available but development is on the basis of private on-site septic systems. The following communities fall within these land use designations: Carlsbad Springs, Notre-Dame-des-Champs, Navan, Sarsfield, Vars, Hammond, Cheney, and Bourget.

The City of Ottawa Official Plan, Schedule C17 – Urban Expansion Areas designates an area just south of the Greenbelt, partially within the Bear Brook Watershed as the proposed “New Tewin Community”. The Official Plan directs that Tewin is to be a sustainable, connected and complete 15-minute community that reflects Algonquin design and placekeeping principles, makes a national statement about design of new communities and establishes a North American benchmark for community design based on the Five Big Moves. The One Planet Living (or similar) framework is to be followed, premised on the aspiration to make this a fundamentally different suburban community than those of the 20th and early 21st centuries.

To date, no final policies have been established for this area, however, a comprehensive planning process has begun. The planning of the new community will require a suite of integrated studies, culminating in a Community Design Plan, a Secondary Plan, and a Financial Implementation Plan. To prepare a community design plan, various constraints and issues need to be addressed. The Bear Brook Watershed Plan will inform this planning process.

Further information on the Tewin Community can be found in the City of Ottawa Official Plan, Annex 10 (Tewin Community Design Planning Process and Studies; 2021).

8.2.2. Commercial and Industrial Areas

Commercial and Industrial areas are primarily located along Highway 417. Proximity to the provincial highway system is strategic and facilitates the efficient movement of goods while limiting disruption to local rural traffic.

Within the United Counties of Prescott and Russell, two Trade and Industry Protected Areas are located within the Bear Brook Watershed; the 417 Industrial Park in Russell Township, and an area south of the community of Limoges, adjacent to Highway 417 and Limoges Road in Nation Municipality. The Trade and Industry Policy Area land use designation permits manufacturing, warehousing, storage, and industrial park uses. Heavy industrial use is permitted, and policies apply to ensure adequate mitigation of adverse impacts. Policies for this land use designation protect the area for future employment uses and restrict conversion to other uses.

The City of Ottawa Official Plan identifies a Rural Industrial and Logistics land use designation for an area just south of the Boundary Road exit off Highway 417. Lands designated as Rural Industrial and Logistics are intended to support uses that are not suitable in the Urban area or Rural Countryside due to the requirements for large areas of land or separation from their noxious activity. These uses provide for a full range of activities across multiple industry sectors, which include warehouse, distribution, light and heavy industrial uses and small offices.

The Vars Industrial Park is located on lands surrounding the interchange of Highway 417 and Rockdale Road. Area-specific policies of the Official Plan permit the following uses: light industrial uses, commercial uses, manufacturing and processing, warehousing and distribution, and contractor material storage and services.

8.2.3. Natural Heritage

The City of Ottawa and United Counties of Prescott and Russell Official Plans include sections on natural heritage and natural heritage system maps identifying core natural areas and linkages. Further details are provided in the Natural Heritage Systems report.

8.3. Master Plans / Major Strategies

The City of Ottawa and UCPR have several Master Plans and Major Strategies which guide planning and development across the watershed, and these are documented in Table 1. The City of Ottawa's Climate Change Master Plan is of particular interest to the current study given its role and use for subsequent phases of the Bear Brook Watershed Study.

8.3.1. Climate Change Master Plan

The Climate Change Master Plan is the City of Ottawa's overarching framework to reduce greenhouse gas emissions and respond to the current and future effects of climate change.

The plan aims to take unprecedented collective action to transition Ottawa into a clean, renewable and resilient city by 2050. Ottawa City Council has adopted short, mid, and long-term greenhouse gas reduction targets based on 2012 levels, with the intention of eliminating emissions from the community by 2050 and from City operations by 2040.

The Climate Change Master Plan is guided by the following principles:

- Responsibility - everyone has a responsibility to manage energy consumption and to mitigate risks
- Collaboration – all levels of government, utilities, stakeholders, and the broader community must work together to effect change and develop joint solutions
- Municipal leadership – the city needs to take a lead role to ensure an integrated and comprehensive approach across the corporation and the community
- Coordination – all the City's long-term plans need to be coordinated to ensure a strategic and harmonized approach
- Equity and inclusion – all decision-making processes must incorporate equity and inclusion considerations

The Climate Change Master Plan identifies eight priority actions for the next five years (2020-2025):

- Implement Energy Evolution: Ottawa's Community Energy Transition Strategy
- Undertake a climate vulnerability assessment and develop a climate resiliency strategy
- Apply a climate lens to the new Official Plan and its supporting documents
- Apply a climate lens to asset management and capital projects
- Establish a carbon budget and accounting framework and explore the feasibility of including embodied carbon
- Explore carbon sequestration methods and the role of green infrastructure
- Encourage community action through education, incentives, support and advocacy to senior levels of government
- Develop a governance framework to coordinate stakeholder efforts and mobilize the community

City staff provide annual progress reports to track the progress being made to reduce greenhouse gas emissions.

8.4. By-laws

8.4.1. Zoning By-laws

Municipal Zoning By-laws regulate the use of land, providing details of how land may be used, where buildings and structures can be located, building heights, densities, setbacks, and parking requirements, as well as many other important aspects of development. All municipalities in the Bear Brook Watershed have a zoning by-law that covers the entirety of the municipality. These by-laws impact watershed conditions by including environmental protection zones in riparian areas, by setting requirements for stormwater management and the proportion of permeable to impermeable surface areas, and by restricting the locations of polluting industrial uses. Municipal Zoning By-laws also include provisions requiring additional studies to be completed for new development close to watercourses and provincially significant wetlands.

8.4.2. Tree Protection By-laws

The City of Ottawa and City of Clarence-Rockland have enacted by-laws to regulate removal or damage of trees, however, these by-laws are primarily concerned with trees within urban areas or on City-owned properties. Clear-cutting of wooded areas on rural lands for the purpose of agriculture is permitted by these by-laws.

The City of Ottawa's Tree Protection By-law protects trees of a certain minimum size within the urban area. The by-law also provides protection to all City-owned trees and natural areas. Any activities that would injure or destroy a tree protected by this by-law are prohibited unless a permit has been issued. The by-law also identifies guidelines to follow when working around trees since trees can be seriously injured if their roots are compacted, cut or damaged.

The City of Clarence-Rockland's Tree Cutting By-law regulates the removal of trees located in the front yard of a built property or on any part of a vacant property, on significant woodland and for subdivision agreement.

8.4.3. Site Alteration By-laws

The City of Ottawa's Site Alteration By-law is intended to protect its agricultural resources and some natural heritage features from negative impacts caused by site alteration, and to prevent drainage issues and public nuisances resulting from site alteration activities.

Section 5.5.10 of the UCPR Official Plan provides that municipalities may enact Tree Cutting By-laws and/or Site Alteration By-laws to control or prevent the degradation of shoreline areas which could be caused by the removal of vegetation or the disturbance of native soils. However, no such by-laws have yet been adopted.

9. Agency Policies

9.1. National Capital Commission

The National Capital Commission (NCC) has published several planning documents which guide development on NCC lands throughout the National Capital Region.

The *Plan for Canada's Capital 2017-2067* provides the direction and future vision for federal lands in the region over a 50-year period and serves as the foundation for all NCC planning work.

9.1.1. Greenbelt Master Plan

Within the Bear Brook watershed, the NCC's *Greenbelt Master Plan* (2013) describes the purpose of the Greenbelt and its role at a national and a regional level. It outlines the values that should inform any decisions made pertaining to the Greenbelt. It also defines the roles and function of each unique area within the Greenbelt, and sets policies for the following:

- a connected system of natural lands
- protected views
- visitor interpretation
- a recreational pathway system
- sustainable farming and forestry
- research and high-technology campuses

The Bear Brook Watershed contains significant portions of the Greenbelt, including the core natural areas of Mer Bleue and Pine Grove, as well as agricultural lands and natural linkages.

Policies for the Mer Bleue sector focus on enhancing the visual experience for visitors to the area and promoting ecological integrity. Policies for the Pine Grove sector focus on improving natural linkages to bolster the Greenbelt's long-term ecological health and contribute to establishing a connected regional ecological network.

9.1.2. Mer Bleue Management Plan

The *Mer Bleue Wetland Management Plan* (2007) is intended to ensure ongoing conservation, monitoring, and management of the Mer Bleue wetland. The Management Plan's strategic goals include maintaining the ecological character of the wetland; preserving natural areas and rural or agricultural lands, recognizing the interdependence between sustainable agriculture and biodiversity conservation; and encouraging public access to the area for recreation, education and scientific research, all while ensuring the protection of the ecological character of the wetland.

9.1.3. Strategies

The NCC has produced key strategy documents that guide its operations, including the Forest Strategy and Sustainable Development Strategy.

9.2. South Nation Conservation

The role of South Nation Conservation in planning is fourfold:

- Assisting municipalities with long-term and watershed planning, including the development of Watershed/Subwatershed Plans;
- As a commenting agency for applications under the *Planning Act*;
- Administering Part VI of the *Conservation Authorities Act* and Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits; and
- As a Source Protection Authority within the Raisin-South Nation Source Protection Region under the *Clean Water Act*.

SNC works with its partner municipalities to develop and implement policies under the *Conservation Authorities Act* and under the *Clean Water Act*. The relevant policy documents are described in the following sections.

9.2.1. SNC Policies under the Conservation Authorities Act

SNC Regulation Policies for the administration of Ontario Regulation 41/24 are approved by the SNC Board of Directors, and ensure a consistent, timely, and fair approach to the review of applications, and guide the decisions of the SNC Board of Directors and Staff.

The document contains policies and objectives for the administration of Ontario Regulation 41/24 that are not repeated in this watershed plan. The hierarchy of *Conservation Authorities Act* legislation and policies is shown in Figure 8.

9.2.2. Raisin-South Nation Source Protection Plan

Ontario's *Clean Water Act*, 2006, was created to protect existing and future Municipal drinking water sources. Under the *Clean Water Act*, 2006, source protection plans were developed by source protection committees representing municipal, First Nation, and public interests. The Raisin-South Nation Source Protection Plan (SPP) applies in the Bear Brook Watershed.

For more information on Source Water Protection policies, please refer to the Raisin-South Nation Source Protection Plan in the Water Resources Section of the Bear Brook Watershed Study.

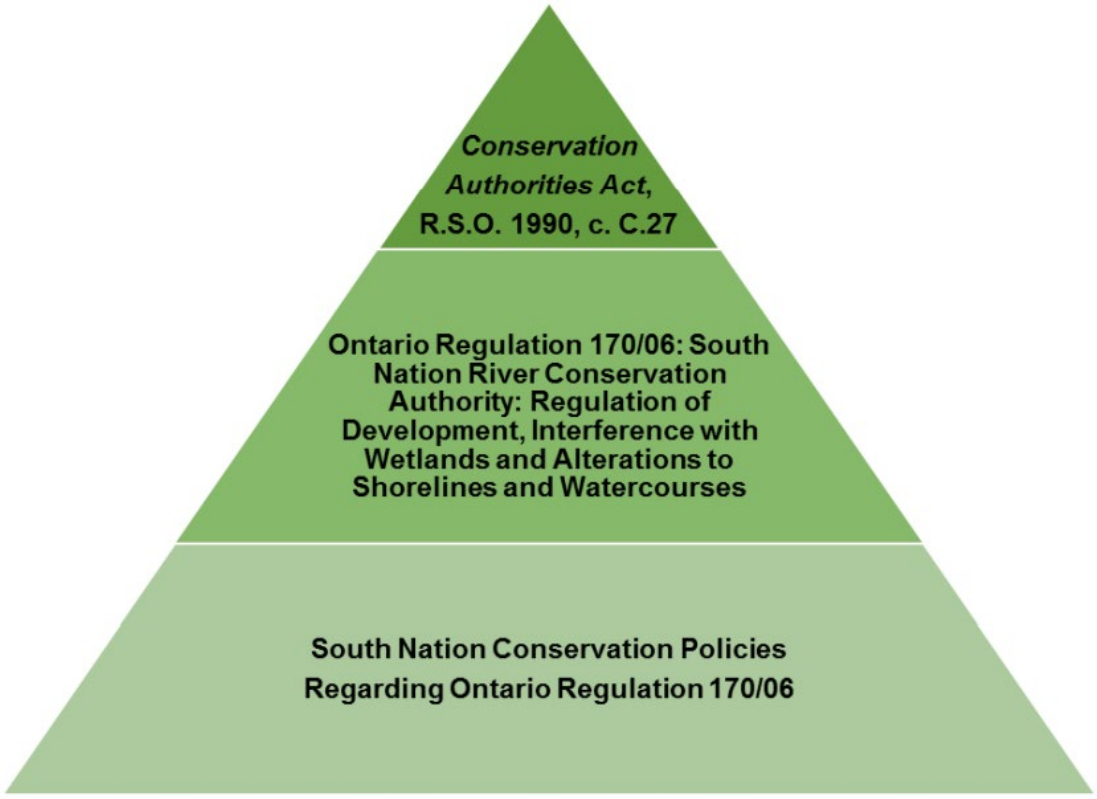

Figure 8. The Hierarchy of Conservation Authority Act Legislation and Policies. *

*The figure has not been updated to show the consolidated Ontario Regulation 41/24 and instead, shows the previous SNC specific regulation, Ontario Regulation 170/06.

10. Next Steps

The requirement to complete the Bear Brook Watershed Study was triggered by existing and proposed communities within the City of Ottawa in the headwaters of the Bear Brook Watershed, including the Tewin Community, the East Urban Community and the South Orleans Urban Expansion Areas. The City of Ottawa retained South Nation Conservation to develop a Terms of Reference for the Study and a contribution agreement between the City of Ottawa and South Nation Conservation was signed in June 2023.

A Technical Advisory Committee was formed comprising of staff from the City of Ottawa, National Capital Commission, United Counties of Prescott and Russell and South Nation Conservation. The Algonquins of Pikwakanagan First Nation are invited to all TAC meetings.

Milestones for the Bear Brook Watershed Study generally follow the following timelines:

Phase 1: Completion of Existing Conditions Reports – Winter 2025

Phase 2: Scenario Planning and Impact Assessment – Fall 2025

Phase 3: Bear Brook Implementation Strategy – Winter 2026

Public consultation and opportunity for review and comment on the Existing Conditions Reports will occur in 2025.

The Bear Brook Watershed is home to over 78,000 people. Large areas of the watershed are retained in forest cover and wetlands that provide immeasurable ecosystem services to the City of Ottawa and UCPR. The City of Ottawa and UCPR have multi-layered policies and strategies in place to guide planning and development in the watershed and major land managers (NCC) help retain naturally vegetated lands.

Housing and development of future communities is a priority of the Province of Ontario. Thus, sustainable, forward thinking, and responsible planning is pertinent to the future health of the watershed and its residents as land use priorities and watershed systems evolve.

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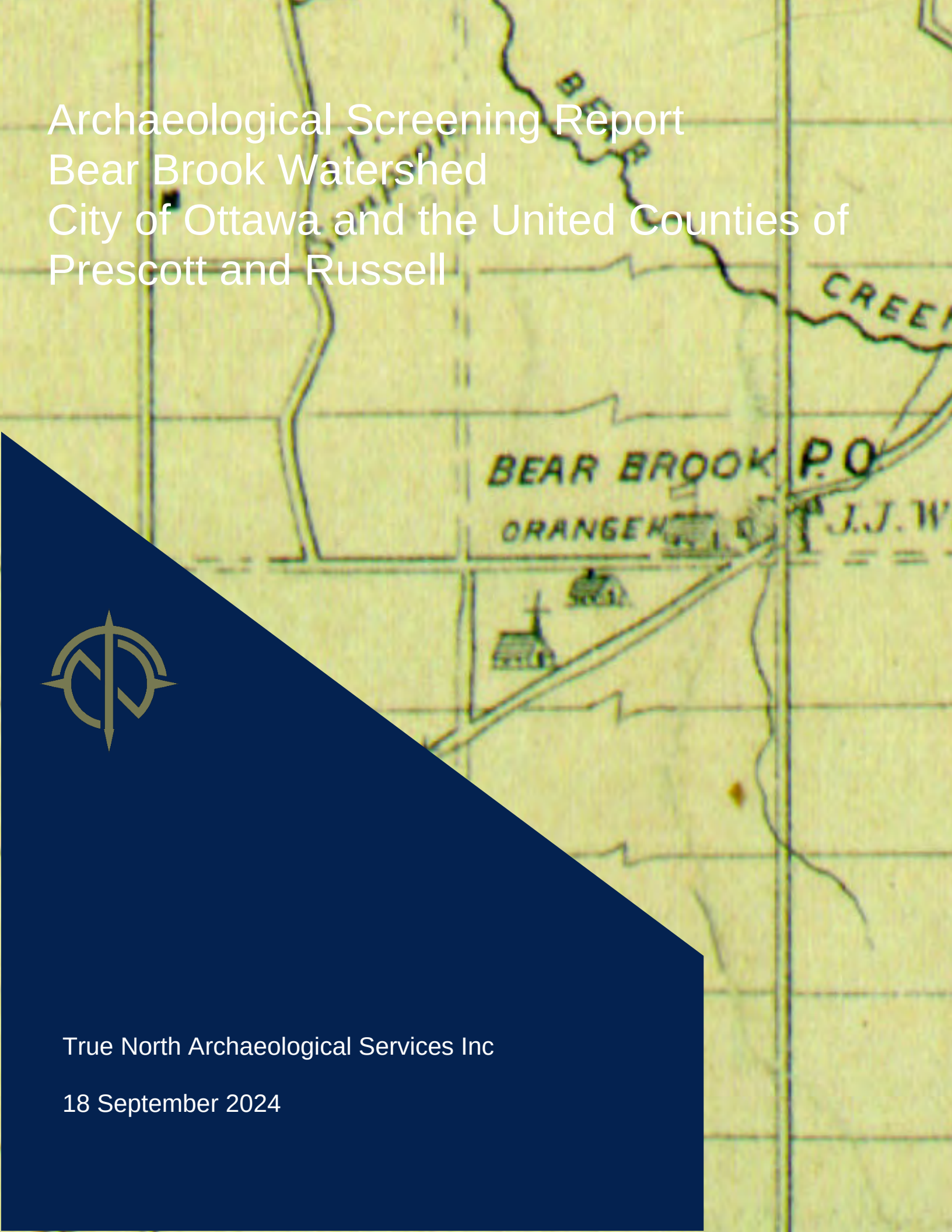
Appendix A Archaeological Screening Report, Bear Brook Watershed

Archaeological Screening Report
Bear Brook Watershed
City of Ottawa and the United Counties of Prescott and Russell



True North Archaeological Services Inc

18 September 2024

DRAFT REPORT

Archaeological Screening Report

Bear Brook Watershed, City of Ottawa and the United Counties of Prescott and Russell

Submitted to:

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18 September 2024

Distribution List

1 e-copy – South Nation Conservation

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Report Abbreviations

TNAS	True North Archaeological Services Inc.
MCM	Ministry of Citizenship and Multiculturalism
PIF	Project Information Form issued by the MCM
ASDB	Archaeological Sites Database maintained by the MCM
CHVI	Cultural Heritage Value or Interest
BP	Years Before Present
ha	Hectare
km	Kilometre
m	Metre

Executive Summary

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.

True North Archaeological Services Inc. (TNAS) was retained by South Nation Conservation to prepare an archaeological screening report for the Bear Brook Watershed. The Bear Brook Watershed covers an area of approximately 48,943 ha and is located primarily within the City of Ottawa and the United Counties of Prescott and Russell.

This archaeological screening report provides an historical overview of the Bear Brook Watershed, summarizes previously completed archaeological studies relevant to the study area, provides an archaeological potential model, and includes general recommendations based on the screening overview assessment. The determination of archaeological potential attributes utilized for the potential model follows the Ministry of Citizenship and Multiculturalism's (MCM) *Standards and Guidelines for Consultant Archaeologists* (MCM 2011).

The Bear Brook Watershed is a subwater shed of the South Nation River Watershed which drains into the Ottawa River. The western portion of the watershed includes the Mer Bleue Bog, an internationally significant wetland. Indigenous land use of its vicinity dates to at least the Early Archaic Period (9,000 to 8,000 BP). At the time of European contact, several Algonquin Nations were residing along the Ottawa River and adjacent watersheds including the Petite Nation River to the north in modern day Quebec. Significant Euro-Canadian immigration began in the early 19th century. Much of the early immigration occurred in the western portion of the study area due to its proximity to the City of Ottawa and the Rideau River. Lumbering and the transition of forests to agricultural land during the 19th century significantly altered the watershed's natural environment. The western portion of the watershed was amalgamated into the City of Ottawa in 2001.

At the time of the production of the archaeological screening report, at least 69 archaeological assessments have been previously completed within the watershed. Most of these assessments have been conducted by consultant archaeologists for development projects and are located along the western and northern boundaries of the Bear Brook Watershed which has seen development through the expansion of the City of Ottawa. There are a total of eight registered archaeological sites located within 300 m of the watershed. All eight archaeological sites are the remains of 19th century historical sites. The nearest Indigenous archaeological site is the Mer Bleue Site (BiFv-22), a lithic findspot located within 1 km to the northwest of the watershed.

The archaeological potential model indicates that most of the Bear Brook Watershed has archaeological potential. Indigenous archaeological potential is present within proximity to water sources, distinct landforms, and pockets of well-drained sandy soil. Euro-Canadian historical archaeological potential is present within proximity to registered historical archaeological sites, locations of early Euro-Canadian settlement identified using historical plans, and historical transportation routes. Data gaps present in the potential model include large areas that have not been subject to previous archaeological assessment, a lack of registered Indigenous archaeological sites, and a small number of previous archaeology reports that were not available.

The archaeological screening report has resulted in the following recommendations:

1) The portions of the Bear Brook Watershed identified as having archaeological potential on Map

13 and are not within an area previous subject to archaeological assessment should be subject to Stage 1 archaeological assessment by a licensed archaeological prior to ground disturbance. Areas identified as having archaeological potential will likely also require Stage 2 archaeological assessment should the Stage 1 archaeological assessment find the archaeological potential has not been previously impacted.

2) The portions of the Bear Brook Watershed identified as having been previously assessed and requiring further archaeological assessment as shown on Map 13 may require additional archaeological assessment following the specific recommendations of those assessments. A licensed archaeologist should review the recommendations of the previous archaeological assessments and comply with legislative requirements prior to any land altering activities.

3) The portions of the Bear Brook Watershed identified as having been previously assessed and recommended for no further archaeological assessment on Map 13 do not retain cultural heritage value or interest. No additional archaeological assessment is required these areas.

4) The portions of the Bear Brook Watershed with no archaeological potential and have not been previously assessed may still require archaeological assessment to follow municipal policies to ensure that all property to be impacted by development projects are assessed in compliance with legislative requirements. A licensed archaeologist should conduct a Stage 1 archaeological assessment to confirm the low archaeological potential of these areas.

5) Waterways within the Bear Brook Watershed may retain archaeological potential. The Ministry of Citizenship and Multiculturalism should be consulted prior to impacts to determine whether a marine archaeological assessment is required.

6) Should any Indigenous artifacts or human remains be encountered within the Bear Brook Watershed, Indigenous communities should be consulted as part of the archaeological assessment process.

7) If human remains are encountered, immediately stop all activities and notify the police or coroner. If the coroner declares that foul play is not suspected, the coroner will notify the Registrar, Funeral, Burial and Cremation Services Act and the owner of the land will take whatever steps are necessary to preserve the site, the human remains, and any artifacts until final disposition is made in accordance with the Funeral, Burial and Cremation Services Act and its regulations.

8) Additionally, in order for this archaeological screening report to remain relevant as a planning tool, the report and archaeological potential model should be periodically updated to include additional archaeological assessments completed within the watershed or changes to the requirements for archaeological assessments. It is recommended that updates occur at a minimum of every five years to ensure continued relevance.

Table of Contents

1.0 Introduction

This archaeological screening report for the Bear Brook Watershed provides a high-level overview of the archaeological potential of the watershed landscape. Archaeological resources in Ontario are protected under the *Ontario Heritage Act*. Under the *Heritage Act*, only an archaeologist holding a valid archaeological license issued by the Ministry of Citizenship and Multiculturalism (MCM) and having registered an assessment under a Ministry issued Project Information Form (PIF) are allowed to disturb or alter an archaeological site. This archaeological screening report is intended as a planning tool to assist South Nation Conservation (SNC) identify areas where archaeological assessments will be required prior to ground disturbance and to assist South Nation Conservation meet their requirements for protecting archaeological resources under the *Ontario Heritage Act* (1990). This report has also been prepared with the following objectives:

1) Summarize the history in the Bear Brook Watershed;
2) Provide a literature review of known archaeological studies and information available within the Bear Brook Watershed;
3) Provide geospatial mapping of known previously completed archaeological studies, where available
4) Identify areas with higher probability of archaeological significance; and,
5) Analyze data gaps and provide recommendations for further study.

The report is divided into sections to meet the above objectives. Section 2.0 summarizes the history and environment of the Bear Brook Watershed and the Ottawa Valley. This includes an overview of evidence for Indigenous land use from the Paleo Period through to the Post-Contact Period. The Post-Contact Period summary includes information on early Euro-Canadian immigration into the watershed and the development of several of its communities. The summary of the environment of the watershed includes the physiography, surficial geology, and soil drainage, which are applicable for assessing the potential for archaeological resources.

Section 3.0 provides a summary of previously completed archaeological assessments and registered archaeological sites within the watershed. Where available, the geospatial limits of previously completed archaeological assessments are mapped, and includes shading indicating whether previously assessed areas may require additional archaeological assessment.

Section 4.0 presents an archaeological potential model for the watershed. This section discusses the features used to identify archaeological potential following the MCM's criteria defined in the (2011) *Standards and Guidelines for Consultant Archaeologists*. Mapping is provided to highlight the different sources of archaeological potential to indicate areas that are likely to have Pre-Contact Indigenous or historical archaeological sites. A combined archaeological potential map is also provided, which shows the archaeological potential from all sources within the watershed.

Section 5.0 provides an analysis of data gaps in the model. These include known previous archaeological assessments where the reports were not available, the absence of archaeological field investigations and ground truthing. The analysis discusses how future archaeological assessments (e.g., Stage 1) will be able to account for these gaps and provide further guidance in regards to the assessment and mitigation of archaeological resources within the watershed.

Finally, Section 6.0 provides recommendations for further archaeological assessments, Indigenous engagement, and initial steps to take for the inadvertent discovery of human remains. Additional recommendations include considerations for updating the archaeological screening report to maintain its relevance as a planning tool for SNC.

2.0 History and Environment

2.1 Regional Indigenous Context

The following historical narrative is intended to provide a general overview of the interpreted land use during the "Pre-Contact and Post-Contact Periods" within the Bear Brook Watershed and surrounding vicinity. This historical overview generally reflects inferences and interpretations based on archaeological and historical interpretations primarily made by non-Indigenous representatives.

This section is intended to provide a general historical overview that can be referenced when determining the potential for archaeological resources within the current project study area. The text and comments below, including the cited references, may reflect archaeological literature within general publications, but may not represent the opinions of those Indigenous communities whose history it is purported to reflect.

Paleo Period (13,000 – 9,000 BP)

The Paleo Period represents a temporal classification developed by archaeologists and does not reflect any inferences of initial human habitation. This period extends from around 13,000 years before the present (BP), when glacial ice began to recede within the modern-day area of the Ottawa Valley.

Following the period of deglaciation, the Ottawa Valley was inundated by the Champlain Sea, which is interpreted to have extended from Rideau Lakes in the south, along the Ottawa Valley and St. Lawrence areas and terminating around Petawawa in the west (Watson 1999a). The exact western boundary is undetermined as current elevation levels reflect the isostatic adjustment of the land following the melting of the glaciers and cannot be used to determine the exact location of the Champlain Sea at the time of its existence (Chapman and Putnam 1984). The eastern portion of the sea extended into the Atlantic Ocean.

During the Early and Middle Paleo Periods (13,000 – 9,500 BP) the Bear Brook Watershed would have remained inundated by the Champlain Sea, although as the Champlain Sea receded during the Late Paleo Period (9,500 – 9,000 BP) it is likely that people migrated along the changing waterfront landscape where vegetation was being re-established (Watson 1999a). The ridges and old shorelines of the Champlain Sea and early Ottawa River channels reflect areas most likely to contain evidence of Paleo Period land use in the region. Archaeological and geological investigations in the Ottawa Valley have indicated these early sites may be identified within the 550 ft (167.6 m) or higher contour topography, although additional research may be required to confidently assess this correlation (Kennedy 1976).

By the Late Paleo Period (9,500 - 9,000 BP), enclosed coniferous forests with some minor deciduous elements became established in eastern Ontario, with contemporary populations traversing large territories in response to seasonal resource fluctuations. The transition to the Late Paleo Period also included projectile points comprised of smaller unfluted projectiles along with lanceolate parallel flaked stemmed and non-stemmed Plano points, while hunting strategies may have transitioned from communal groups to more individualized pursuits (Ellis and Deller 1997).

The identification of Paleo Period sites in the Ottawa Valley region has been hindered by the erosion of accessible locations during the environmental changes associated with the transition from the Late Paleo Period to the succeeding Archaic Period. The potential use of watercraft by Paleo Period inhabitants (Jodry 2005; Engelbrecht and Seyfert 1995) and evidence for the abundance of marine resources (Robinson 2012; Loring 1980) raises the possibility of land use within accessible landscapes such as those exposed as isolated islands above the 167 m elevation contours. As the Ottawa River delta prograded eastward during the regression of the Champlain Sea (Fulton *et al* 1987), these isolated exposed landscapes would have been impacted by periods of overflow from glacial Lake Agassiz. The inundation of flood waters from the glacial lake may have caused significant erosion (Fulton and Richard 1987), with another possibility being that the sediment transport facilitated by the moving water may have buried cultural materials within these potential occupation areas.

Evidence suggesting land use within the Ottawa Valley during the Paleo Period includes the recovery of two bi-facially fluted projectile points found near the Rideau Lakes that would have been situated near the contemporary Champlain Sea shoreline (Watson 1999b) and an isolated projectile point near Quyon, Quebec (Laliberté 1991), with additional interpretations of Paleo Period material identified during archaeological investigations near Greenbank Road (Swayze 2003), Albion Road and Rideau Road (Swayze 2004). No Paleo Period archaeological sites have been registered within the Bear Brook Watershed. The closest site with a potential Late Paleo Period component is situated just over 23 km west of the project area where several lithic artifacts interpreted to represent a cotemporary campsite have been recovered at the Holy Spirit site (registered as Borden Number BhFx-33) (MCM 2024).

Archaic Period (9,000 – 2,950 BP)

During the Early Archaic Period (9,000 – 8,000 BP), a gradual increase in atmospheric humidity in conjunction with warmer summers influenced the environmental landscape within the general study area vicinity. Fossil pollen and spore identification from sedimentation cores lifted from Lovesick Lake provide evidence of climate change, with jack pine forests becoming dominant during the beginning of the Early Archaic Period (Teichroeb 2007). Land use within the Ottawa Valley increased during this early environmental transition, with evidence of an Early Archaic Dovetail projectile point recovered in the Ottawa area (Pilon and Fox 2015) confirming contemporary land use within the regional landscape.

Concurrent with the environmental evolution were notable diagnostic technological changes including the appearance of side and corner-notched projectile points used for hunting. Other significant innovations included the introduction of ground stone tools such as celts and axes, which may reflect an emerging woodworking industry.

Populations in Ontario during this period primarily utilized maritime landscapes during the spring, summer and fall seasons with large base camps on islands, near river mouths, and on the shores of embayment's where a variety of flora, fish, and wild fowl resources could be obtained. Smaller hunting and specialized campsites were also established in the uplands and along smaller watercourses. The waterways were the preferred method of travel, and many burials are located along these waterways (Taylor 2015), as well as the traditionally visited islands. Access to islands and mainland shorelines would have been facilitated by a variety of contemporary watercraft such as bark canoes, skin boats and dugout canoes (Monk 1999).

Indigenous community members utilized watercraft to travel along navigable waterways such as the Ottawa, Gatineau and Rideau River systems to meet, trade and exchange information. These waterways represented the historical highways facilitating the movement of both people and materials through the

general study area vicinity. Archaeological discoveries made in the area around the Ottawa River system and associated tributaries illustrate the existence of an extensive, continent-scale network of communication and trade with the discovery of a variety of raw materials used for stone tool production including Ramah chert from the tip of Labrador, Mistassini quartzite from the centre of Québec, Hudson's Bay Lowland chert from the region bordering Hudson Bay, abundant Onondaga chert obtained from the Onondaga Escarpment region south and west of Lake Ontario, as well as distinctive Mercer and Burlington Formation cherts from modern-day Ohio and Illinois (Pilon and Boswell 2015).

The Ottawa River and tributary waterways were also an important route for the movement of copper, either through direct trade between individual groups, or through expeditions to Lake Superior to access local copper deposits (Chapdelaine *et al* 2001). Copper artifacts similar to those documented on Allumette Island in the Ottawa River have been discovered in Wisconsin, Michigan, New York State and Manitoba (Kennedy 1970). This commodity, as well as other tradable goods, were presumably transported by canoes and other vessels along regional waterways.

The Ottawa Valley was also one of the primary corridors that facilitated the transmission of technological information and techniques (Kennedy 1970). Artifacts representative of the expanding trade network included "birdstones" which were small, bird-like effigies usually manufactured from green banded slate, as well as marine shell artifacts from the Mid-Atlantic coast that are frequently encountered in burial contexts (Ellis *et al* 2009; Ellis *et al* 1990).

Sites with Archaic components that demonstrate this expanding trade network include Morrison's Island and Allumette Island in the Outaouais region of the Ottawa River (Clermont and Chapdelaine 1998; Clermont 1999; Chapdelaine *et al* 2001), sites identified at Lac Leamy near the junction of the Gatineau and Ottawa Rivers, and also in the Rideau Lakes area (Watson 1982). Additional significant sites with Archaic Period components along Ottawa Valley waterways that were likely influenced by these trade routes include Jessup Falls near the mouth of the South Nation River and at Spencerville near the source of the South Nation River (Daechsel 1980).

During the Middle Archaic Period (8,000 – 4,000 BP) the trend towards more diverse toolkits continued, as the presence of netsinkers and fish weirs reflect the importance of fishing within the contemporary subsistence strategy. It was also during this period that stone tools specifically designed for the preparation of wild plant foods were crafted and when 'bannerstones" were first manufactured, which are carefully crafted ground stone devices that served as a counterbalance for *atlatls* or spear-throwers (Ellis 2013).

The diverse trade relationships may have also influenced the transition from seasonal expeditions across large areas to more centralized occupation within smaller areas that provided the opportunity to facilitate interaction with those conducting trade, whether it was "down-the-line" or controlled by individuals interacting directly with different groups (Kennedy 1970). Another noticeable attribute during the Middle Archaic Period is the increased reliance on local, often poorer quality, chert resources for manufacturing projectile points (Ellis 2013). While groups traversed larger territories during the Paleo and Early Archaic Periods and were able to visit primary outcrops of high-quality chert at least once during their seasonal round, during the Middle Archaic Period groups traveled within comparatively smaller territories that did not always possess a source of high-quality raw materials. In these instances, lower quality resources that had been previously deposited by the glaciers in the local till and river gravels were utilized.

Trade connections across vast territories continued into the Late Archaic Period (4,000 – 2,950 BP), when the trend towards decreased territory size and a broadening subsistence strategy continued. Late Archaic Period sites have been discovered in greater numbers compared to Early and Middle Archaic Period sites, suggesting the local population was rapidly expanding (Laliberté 1998a; Bursey *et al* ND). It is during the Late Archaic Period that the first defined cemeteries are identified, as prior to this period individuals were typically interred close to the location where they died. During the Late Archaic Period, when an individual died while their group was away from the territorial cemetery, the remains would be kept until the group returned to the home cemetery where they could be interred (Kennedy 1966; Pilon and Young 2009). Consequently, it is not unusual to find disarticulated skeletons, or even skeletons lacking minor elements such as fingers, toes or ribs, in Late Archaic Period burial pits.

Burial grounds such as those at Morrison and Allumette Islands which were also important junctions for trade have been theorized to have provided strong symbolic claims over a local territory and the surrounding resources (Laliberté 1998a). These burial grounds are often located within areas of elevated topography containing well-drained sandy and gravel soils adjacent to major watercourses or on exposed islands.

Sites with Archaic Period components along the Ottawa River have been noted at Aylmer Island (Sowter 1915), Chaudière Falls (Pilon and Boswell 2015), Lac Leamy (Paterson 2020), the Sawdust Bay 2 site near Arnprior (Daechsel 1981), a site at Constance Bay that was observed to be “partially submerged” with material interpreted to be “possibly Late Archaic” (MCM 2024) and the BiFw-14 site on the north shore of the Ottawa River (Arkeos 1993). No Archaic Period archaeological sites have been registered within the Bear Brook Watershed. The nearest Archaic Period archaeological site is the Sawmill Creek Findspot (BiFv-5) located approximately 2.5 km west of the watershed. It consisted of a single isolated projectile point (MCM 2024).

Woodland Period (2,950 – 500 BP)

The Early Woodland Period (2,950 – 2,200 BP) is distinguished from the Late Archaic Period primarily by the introduction of ceramic technology. The early ceramic containers were thick walled and friable, suggesting they may have been primarily used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil (Spence *et al* 1990). These early vessels were not easily portable, and their fragile nature suggests they may have required regular replacement. There have also been numerous Early Woodland Period sites identified where ceramics were absent from the recovered assemblage, suggesting ceramic vessels may not have been completely integrated within the daily lives of Early Woodland Period populations.

Besides the addition of ceramic technology, the cultural affinity of Early Woodland Period inhabitants shows a great deal of continuity with the preceding Late Archaic Period. For instance, birdstones continued to be manufactured, although the Early Woodland Period varieties have "pop-eyes" that protrude from the sides of their heads (Spence *et al* 1990). Another example of general continuity from the terminal segment of the Archaic Period is represented by the thin, well-made projectile points, although the Early Woodland Period variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance (Spence *et al* 1990).

Middle Woodland Period inhabitants appear to have utilized ceramic technology more extensively, with vessels often decorated with impressed designs covering the entire exterior surface and upper portion of the vessel interior with styles incorporating elaborate decorative patterns and distinctive elements. Many

of the decorative techniques are representative of specific regional populations as well as specific date ranges (Laliberté 1999) with vessels manufactured during the Middle Woodland Period often incorporating diagnostically distinctive features. Additionally, ceramic decoration shows the emergence of a distinct regional stylistic tradition in the area of southern Quebec (Gates St-Pierre and Chapdelaine 2013).

In terms of settlement and subsistence patterns, the Middle Woodland Period (2,200 - 1,100 BP) provides a demarcation point from the Archaic and Early Woodland Periods. While Middle Woodland Period inhabitants continued to rely on hunting and gathering to meet their subsistence requirements, an increased consumption of fish became an important component of the contemporary diet. Some Middle Woodland Period sites have produced thousands of bones from spring spawning species such as walleye and sucker. Food sources such as shellfish, tree nuts and a proliferation of plant greens and seeds were exploited, and the seasonal variety and relative dependability of these foods encouraged population increases in many areas. Additionally, the presence of carbonized corn in Middle Woodland Period ceramics indicates the crop may have been obtained through exchange with peoples living to the south or was being cultivated on a small scale (Gates St-Pierre and Chapdelaine 2013).

The land use patterns reflected from archaeological investigations of Middle Woodland Period sites generally reflect densely occupied locations that appear on the valley floor of major rivers, often producing sites with extensive artifact deposits. Unlike earlier seasonally utilized locations, many Middle Woodland Period sites appear to have functioned as base camps, occupied periodically over the course of the year and situated to take advantage of the greatest number of resources. These large semi-permanent habitations show a reduced degree of mobility compared to earlier periods (Gates St-Pierre and Chapdelaine 2013). There are also numerous small upland Middle Woodland Period sites, many of which can be interpreted as special purpose camps where localized natural resources were exploited (MCR 1981).

During the Late Woodland Period, the Ottawa Valley appears to have been a zone of interaction between Iroquoian speaking populations to the south who primarily relied on domesticated crops and Algonquian speaking groups to the north who continued a predominately hunter-gatherer lifestyle. The Huron peoples along the north shore of Lake Ontario had moved to the Lake Simcoe – Georgian Bay region, leaving the area of eastern Ontario, except for some small Algonquin groups, generally unoccupied by the time early French explorers arrived in the area around the beginning of the 17th century. Conversely, six St. Lawrence Iroquoian villages dating to *ca*. 1400 AD have been found in the Spencerville area reflecting the dichotomy in the settlement patterns between the Ottawa Valley and the St. Lawrence region to the south.

The increased population and semi-nomadic lifestyle prevalent within the Ottawa Valley during the Woodland Period are reflected in the distribution of sites documented along the Ottawa River and surrounding navigable waterways. The importance of the Ottawa River as a transportation route, as well as an area of resource and subsistence extraction, through this period is reflected in the number of known archaeological sites identified on both sides of the river (Sowter 1915; Kennedy 1964; Laliberté 1998b; Laliberté 1998c; Pilon 2005). No Woodland Period archaeological sites have been registered within the Bear Brook Watershed, with the closest site represented by the multicomponent BiFw-101 site located along the Rideau River approximately 6 km to the northwest.

Early contact with European settlers at the end of the Late Woodland Period resulted in changes to the traditional lifestyles of many Indigenous populations, influencing settlement size, population distribution,

and material culture. The introduction of European-borne diseases also significantly increased mortality rates, resulting in a drastic decrease in population size (Warrick 2000).

2.2 European Contact and Post-Contact Period

The Algonquin Nation had long been established along the Ottawa River and its tributary valleys when the French arrived in the area. Samuel de Champlain met with several Algonquin representatives in 1603 shortly after he established the first permanent French settlement on the St. Lawrence River at Tadoussac (AOO 2013), with Étienne Brûlé generally acknowledged as the first European to pass through what is now the Ottawa Valley area when he portaged at the Rideau Falls in 1610 and with the aid of Algonquin guides proceeded to explore the interior of Canada (AOO 2013).

Another French expedition led by Nicholas de Vignau traveled along the Ottawa River through the Ottawa Valley area in 1611 (Pendergast 1999), followed by Samuel de Champlain in 1613 who led the French voyageurs from Montreal to Morrison Island along the Ottawa River (Croft 2006), which was commonly known as the Grand River (*Kichi Sibi* in Algonquin) or the River of the Algoumequin (Pilon 2005). Champlain again encountered Algonquin community members in the Ottawa Valley area in 1615, with many living in regional groups around the Madawaska River, Muskrat Lake, along the Ottawa River above and below Morrison Island, and also along the Mattawa River to Lake Nipissing (AOO 2013).

The Algonquins spent much of the year in small groups within family or band territorial limits with hunting territories shared by male family members (Speck 1915; Pendergast 1999). Hunting territories were bounded by natural features such as rivers or lakes. During winters, Algonquin families hunted large game such as deer or moose and rapped beaver (Morrison 2005). During summers, family groups would gather at larger camp sites including Morrison Island and Lac Leamy (Pilon and Boswell 2015).

The French established a relationship with the Algonquin communities around the Ottawa Valley that provided an opportunity to monopolize the early fur trade as the two groups developed close relations throughout the 17th century (Trigger and Day 1994). The Algonquins role as intermediaries between other Indigenous groups made them ideal allies for the fur trade (Holmes 1993). The colonial economic wealth stimulated by the French fur trade in the early 17th century promoted the rapid expansion northward, with the Ottawa River providing the opportunity to transport goods to the western trading posts on the lakes by canoe, which could not be accomplished by the larger sailing vessels operating on Lake Ontario (Adney and Chapelle 2014).

Competition for furs increased existing tensions between the Algonquin communities and their Indigenous neighbours including the Haudenosaunee Nations, residing to the south around the St. Lawrence River and Lake Ontario areas. The 17th century saw a long period of conflict known as the Beaver Wars between the Algonquin and the Haudenosaunee communities that resulted in the significant disruption of trade. Mohawk raids against Algonquin villages in the Upper Ottawa and St. Lawrence Valleys resulted in the abandonment or destruction of many Algonquin villages (Trigger and Day 1994). Some Algonquin's found refuge in French settlements such as Trois-Rivieres, Quebec City, Sillery, and Montreal while others may have relocated to interior locations along the Ottawa River's tributaries (Holmes 1993). At the end of the 17th century, the Haudenosaunee were driven out of much of southern Ontario by the Mississauga though they continued to occupy areas within eastern Ontario on a seasonal basis.

In 1701, representatives from the Haudenosaunee and more than 20 Anishinaabeg Nations assembled in Montreal to participate in the Great Peace negotiations, sponsored by the French Governor Calliere (Johnston 2006; Johnston 2004). A peace treaty between the Anishinaabeg and the Kanien'kehá:ka

(Mohawk) was agreed to once again share in the bounty of the territory as partners (One Dish, One Spoon), although this partnership was strained by the “Great Imbalance” represented by the fur trade with European capitalists (Monague 2022).

The resulting treaty document signed at Montreal was not the only record made of the Peace between the Anishinaabeg and the Haudenosaunee. At a council held at Lake Superior, the Haudenosaunee secured peace by delivering a wampum belt to the Anishinaabeg. This belt was carried by successive generations of leaders who were charged with remembering the meaning of symbols worked upon the shell beads and each generation had a responsibility to renew the peace forged by their ancestors (Johnston 2006).

Between 1712-1716, Algonquin communities continued to utilize the Ottawa Valley and were also observed along the Gatineau River with the primary Haudenosaunee occupation located south of the St. Lawrence River (Holmes 1993).

Following the Seven Years’ War in the mid-18th century, the defeat of the French, Algonquin, and their allies by the British and the Haudenosaunee resulted in the further loss of Algonquin hunting territories in southern Quebec and eastern Ontario as the British seized former French colonies. Shortly after the French abandonment around the Great Lakes, English merchant Alexander Henry ventured into the Great Lakes area where he communicated with Anishinaabeg leader Minavanana in September 1761. Henry was informed that the English would suffer retaliation for Anishinaabeg war losses unless the English King made peace with them, with many of the former French forts in the Great Lakes region within Anishinaabeg control. In response, King George III issued a Royal Proclamation on 7 October 1763 acknowledging that Indigenous Nations residing on all lands outside the boundaries of the settled colonies “not having been ceded to or purchased by Us, are reserved to them, or any of them, as their Hunting Grounds” (Reimer 2019, p. 38). The territory reserved for Indigenous Nations encompassed the entire Great Lakes region and peace was secured following discussions between the British and more than 1,500 Anishinaabeg leaders at Niagara Falls in July 1764 where the alliance was sealed by two magnificent wampum belts (Johnston 2006).

The extension of Quebec’s boundaries in 1774 through the Quebec Act and the use of the Ottawa River as the boundary between Upper and Lower Canada following the 1791 Constitution Act separated the traditional Algonquin lands between two colonial government administrations (AOP 2012). This legislative act does not seem to have negatively influenced trade between the British and local Indigenous communities as the recovery of European trade goods (e.g., iron axes, copper kettle fragments and glass beads) from Indigenous sites throughout the Ottawa River drainage basin provides evidence of the extent of contact between the Indigenous communities and the European explorers traversing the Ottawa River during this period.

The 19th century saw significant European immigration into the Ottawa Valley. The Crown largely ignored Algonquin complaints about European encroachment on their hunting territories. Although some Algonquins tried to rent their lands to individual immigrants, the practice was soon ended when the Crown granted patents to the European immigrants who were occupying Algonquin lands as renters (Holmes 1993).

As Indigenous peoples were forced from their traditional hunting territories, many turned to the wage-labour economy where they made significant contributions to the development of Canadian industry (Fernandez and Silver 2017). This includes the role of Algonquin men in transporting goods and furs from the Ottawa River to Moose Factory (Inksetter 2021). A consequence of the participation of Algonquin men in the fur trade were significant changes in settlement patterns. As the men set off on their journey north,

the women and children would remain around trading posts until the men returned. While summer gatherings had long been an Algonquin cultural practice, these gatherings were larger. When Catholic missions began to be established at the trading posts, Algonquin converts were encouraged to bury their dead at Catholic cemeteries and were spending up to three months a year living at the trading posts. The importation of European foods further led to the development of a semi-sedentary lifestyle as some Algonquin families began planting potatoes and sending their children to schools.

A reserve was purchased for use by the Algonquins in Golden Lake in 1873, now known as Pikwàkanagàn (AOO 2013; Holmes 1993). The Kitigan Zibi Anishinabeg First Nation was established in the 1850s and is located approximately 100 km north of Ottawa (Kitigan Zibi 2021). Additional reserves and settlements for the Algonquin community members were also established in Quebec during the mid-20th century, although these reserves only secured a small fragment of what once had been the original homeland of the Algonquins (AOO 2013).

The Indian Act of 1876 framed the relationship between the Government and Indigenous peoples as paternalistic and the Department of Indian Affairs was granted the authority to manage Indigenous lands, resources, and money. The Department of Indian Affairs also had the authority to determine who could be classified as Indigenous (INAC 2011). The goal of the Indian Act was to erase Indigenous autonomy to force their integration into Canadian society. Residential schools and the adoption of Algonquin children by non-Indigenous families during the mid-20th century resulted in further discrimination and erosion of rights (AOP 2012).

2.3 The Bear Brook Watershed

The Bear Brook Watershed is a branch of the South Nation River Watershed and is located within the eastern boundary of the City of Ottawa and extends into the United Counties of of Prescott and Russell. It spans portions of Gloucester, Osgoode, Cumberland, Russell, Clarence, Cambridge, and Plantagenet Townships. Bear Brook, of which the Bear Brook Watershed was named, derives its name from the large numbers of bears that once foraged within the area (SNC 2016). The Mer Bleue Bog, a conservation area measuring over 33 km^2, is located along the western boundary of the watershed. It is an internationally significant wetland designated as a Ramsar site under the Ramsar Convention for the protection and conservation of wetlands (Ramsar 2024).

Indigenous land use within the vicinity of the Bear Brook Watershed dates to at least as early as the Archaic Period (9,000 – 2,950 BP) (MCM 2024). Evidence includes five Early Archaic Period (9,000 – 8,000 BP) archaeological sites and one Late Archaic Period (4,000 – 2,950 BP) archaeological site within Gloucester Township, one Early Archaic Period site in Cumberland Township, and two Late Archaic Period archaeological sites located to the east of the Bear Brook Watershed near Westminster in Plantagenet Township. Although none of these sites are located within the Bear Brook Watershed itself, they show Indigenous land use to the east, west, and north making it unlikely that there was no Indigenous presence within the Bear Brook Watershed during this period. At the time of European Contact, several Algonquin Nations were living along the Ottawa River and neighbouring watersheds.

Permanent European immigration began in the early 19th century. In Gloucester Township, the first documented settler was Braddish Billings who built his home at Junction Gore in 1812 (Kemp 1991). European immigration and development of the United Counties of Prescott and Russel was slower to evolve due to lack of government investment in the development of roads and lack of prime agricultural land. Prescott and Russell Counties were united in 1822 for the purpose of representation (Mika and Mika

1983). Gloucester and Osgoode Townships were originally part of the County but were annexed by the County of Carleton in 1838. The construction of the Rideau Canal between 1826 and 1832 resulted in the development of Bytown which would become the City of Ottawa.

During the mid-to-late 19th century, several communities developed within the Bear Brook Watershed with their growth facilitated by the arrival of the railway. These communities include Carlsbad Springs, Bearbrook, Cheney, Limoges, Navan, Hammond and Bourget. A detailed history of all of the communities is beyond the scope of this report, but a brief summary of some of the communities is provided below.

Carlsbad Springs began as a lumbering settlement with the Bear Brook used to transport lumber to nearby sawmills. The discovery of a mineral spring in the 1860s turned the settlement into a popular tourist destination for visitors from Ottawa (Mika and Mika 1977). The springs were marketed as having healing properties and their popularity supported the construction of several guest houses to support the tourism industry. Unfortunately, Carlsbad Springs declined in popularity as a tourist destination during the 20th century.

The community of Bearbrook was the location of the first mill built within Cumberland Township in 1848 (Mika and Mika 1977). By 1870 it had a population of 200 people and had a townhall, several churches, stores, and a hotel.

Cheney was founded in 1895 and was selected as the location of a Canadian Pacific Railway station that was constructed in the following year (Clarence-Rockland 2021). The hamlet was impacted by a fire in 1897 which resulted in the destruction of almost all the houses, the sawmill, a carding mill, and several businesses.

Hammond and Limoges were connected to Ottawa through the Canada Atlantic Railway to facilitate lumbering in the area (FCG ND). Hammond's first school opened in 1876, and its first post office opened in 1895. Bourget, originally named The Brook, is primarily a French speaking village founded in the mid-19th century (Clarence-Rockland 2021). Its first post office opened in 1880.

Grant, located within the area of what is now the Larose Forest, was a farming community that existed from the mid-19th century until the 1950s (Quimper 2015). Once the location of a post office, church, schoolhouse, store, cheese factory and several residential buildings, Grant began to decline in the 20th century due to poor soils resulting in unsustainable farming conditions and limited options for education resulting in all of its families eventually moving elsewhere. All that remains of the community is its cemetery and the foundations of the schoolhouse and post office.

Additional information regarding the 19th century of the Bear Brook Watershed is illustrated on historical township plans. The 1863 plan shows scattered Euro-Canadian settlement with concentrations of farmsteads around waterways, roads and the communities of Bearbrook and Navan (Map 3). Township plans from 1878 to 1881 show significantly increased settlement, especially within the portion of the watershed located in Gloucester Township (Map 4).

The development of railways within the study area provided reliable overland transportation for the movement of people and goods. In 1882, the Canadian Atlantic Railway constructed a line from Coteau, Quebec to Ottawa which passed through the southwestern portion of the Bear Brook Watershed (Danyleyko 2024). In 1923, it became part of Canadian National Railway. In 1898, the Ottawa and New York Railway was built connecting Ottawa to Cornwall. It operated until 1957 (Granger 2022a) and the old rail line was converted to a pedestrian pathway. Highway 417, which passes through the southern portion

of the watershed, was constructed in the 1970s (Bevers 2024).

Much of the Bear Brook Watershed was impacted by deforestation during the 19th century from lumbering and the conversation of forests to agricultural land. Environmental degradation led to the formation of the Bourget Desert in the area north of the community of Limoges (Bacher 2011). Beginning in the 1920s, the area underwent significant restoration when Russell County purchased 108 square kilometers for the re-generation of natural landscape. This resulted in the creation of the Larose Forest, named for Ferdinand Larose who championed the project. Larose Forest is now a popular recreation spot.

During the 20th century, the City of Ottawa and neighbouring townships continued to grow and portions of Gloucester were annexed during the 1950s (Mika and Mika 1983). Cumberland Township became a city in 1999, before becoming amalgamated with the City of Ottawa in 2001.

2.3 Environment

The Bear Brook Watershed spans both the Ottawa Clay Plains and Russell and Prescott Sand Plains physiographic regions (Map 5). The sand plains, located within the southern portion of the watershed, formed as a delta of the Ottawa River and its tributaries into the Champlain Sea (Chapman and Putnam 1984). When the Champlain Sea receded, the landscape rose splitting the sand plains into pieces. The clay plains that form the northern portion of the watershed were formed in the channels of the larger post-glacial Ottawa River (Chapman and Putnam 1984). The watershed also contains smaller areas of undrumlinized till plains and limestone plains. There is a large esker running through the center of the wetland and small remnants of beaches. The western portion of the watershed contains peat and muck in the area of the Mer Bleue Bog.

Bear Brook is the largest stream within the watershed and is the largest tributary of the South Nation River. The drainage of the soils varies, although areas of good to excellent drainage are clustered in the center of the watershed and areas of imperfect drainage are common in the eastern portions (Map 6). Wetlands cover 19% of the watershed (SNC 2016).

Map 7 provides an overview of the surficial geology, With much of the watershed consisting of glaciomarine deposits. The central portion consists of areas of glacial till and the area of the Mer Bleue Bog comprises organic deposits.

Most of the original vegetation has been lost due to lumbering during the 19th century and the clearing of forests for agriculture. In well drained areas, the original forests would have consisted of pines and in poorly drained areas, tree species would have included American elm, red maple, white ash, black ash, basswood, and yellow birch (Chapman and Putnam 1984).

3.0 Archaeological Context

3.1 Previously Completed Archaeological Assessments

The primary source of information regarding previously completed archaeological studies is the MCM Past Portal database. This database was accessed on 1 August 2024 (MCM 2024) and according to the database, there have been at least 69 previously completed archaeological assessments within the Bear Brook Watershed. These include several large-scale assessments for the City of Ottawa, the South Nation River drainage, the Ottawa East-West Corridor Light Rail Transit Project, and the Townships of Clarence and Russell (ASI 1999, Daechsel 1980; Heritage Quest 1996; Heritage Quest 2004; Heritage Quest 2005). Almost all previous archaeological assessments were conducted for development projects

by consultant archaeologists. A summary of the archaeological assessments is provided in Table 1 and their locations, where available, are shown on Map 8. A few of the large-scale assessments were excluded from the mapping due to their recommendations pre-dating the MCM's (2011) *Standards and Guidelines for Consultant Archaeologists* and that their recommendations would be replaced by this screening report (ASI 1999; Daechsel 1980; Heritage Quest 1996; Heritage Quest 2004).

Table 1: Summary of Previously Completed Archaeological Assessments

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
2024	P369-0487-2024	Stage 2 Archaeological Assessment 2390 Trim Road, Part Lot 4, Concession 9 Geographic Township of Cumberland, City of Ottawa, Ontario	No	BiFv-10	Stage 3 Recommended
2024	P369-0450-2024	Stage 2 Archaeological Assessment 2127 and 2159 Mer Bleue Road, Part Lots 1 and 2, Concession 11 Geographic Township of Cumberland, City of Ottawa, Ontario	No	None	No Further Archaeology
2024	P369-0448-2023	Stage 1 Archaeological Assessment 2390 Trim Road, Part Lot 4, Concession 9 Geographic Township of Cumberland, City of Ottawa, Ontario	No	None	Stage 2 Recommended for Part of Study Area
2023	P1074-0023-2022	Stage 1 Archaeological Assessment for a Proposed Ottawa Hydro Substation and a Section of the Hydro One L24a Transmission Corridor, Parts of Lots 7 & 8, Concession 9, Lots 7-11, Concession 8, Lots 11-15, Concession 7, and Lots 15 & 16, Concession 6, Ottawa Front, Geographic Township of Gloucester, Now in the City of Ottawa	No	None	Stage 2 Recommended for Part of Study Area
2023	P1074-0079-2023	Stage 2 Archaeological Assessment for a Proposed Ottawa Hydro Substation and a Section of the Hydro One L24a Transmission Corridor, 5134 Piperville Road Part of Lot 11, Concession 8, Ottawa Front, Geographic Township of	No	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Gloucester, Now in the City of Ottawa			
2023	P415-0413-2022	Stage 1-2 Archaeological Assessment: Thunder Road Hydro Anchors Parts of Lots 4 and 6, Concession 8, and Parts of Lots 2, 4, and 10, Concession 9, Geographic Township of Gloucester, former Carleton County, now City of Ottawa, Ontario	No	None	No Further Archaeology
2023	P371-0024-2020	Stage 1 Archaeological Assessment Proposed Warehouse Complex 5494, 5500 & 5510 Boundary Rd. Part of Lot 1, Concession 9, Township of Gloucester (Geo), Ottawa River, City of Ottawa, Ontario	No	None	No Further Archaeology
2023	P1107-0052-2022	Stage 1 Archaeological Assessment Tewin Lands, Part of Lots 6-20, Concession 7, Lots 2-20, Concession 8, Lots 1-10, Concession 9 and 10, Ottawa Front, Geographic Township of Gloucester, Carleton County	Yes	None	Stage 2 Recommended for Part of Study Area
2023	P1074-0039-2022	Stage 1 Archaeological Assessment for a Proposed Subdivision, Part of Lot 28, Concession 1 Geographic Township of Cambridge, Now the Municipality of the Nation United Counties of Prescott and Russell, Ontario	No	None	Stage 2 Recommended for Part of Study Area
2023	P369-0376-2023	Stage 1 and 2 Archaeological Assessment: 1046 Smith Road Part Lot 10, Concession 9, Geographic Township of Cumberland, Carleton County Ottawa, Ontario	No	None	No Further Archaeology
2023	P369-0292-2022	Stage 1 and 2 Archaeological Assessment: 1500 Russland Road, Part 1, 50R-7295 Part Lot 28, Concession 6 Geographic Township of Cumberland, City of Ottawa, Ontario	No	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
2022	P248-0365-2020	Stage 1 and Stage 2 Archaeological Assessment MTO Signage for Highway 417 and Leitrim Road Part of Lot 12, Concessions 6 and 7 on the Ottawa River, Geographic Township of Gloucester, Carleton County	No	None	No Further Archaeology
2022	P369-0204-2022	Stage 1-2 Assessment T2GI, Group B 2967 Lough Rd, Lot 8Con 2, Geo Twp Mountain SDG. 5675 CR 14, Lot 12Con 5, Geo Twp East Hawkesbury United Counties of Prescott and Russell (PR). 769 Con Rd 10, Lot 7Con 9, Geo Twp Alfred, PR. Joanisse Rd, Lot 15Con 9, Geo Twp Clarence PR. 1749 Finch-Winchester Rd, Lot 1Con 9, Geo Twp Finch SDG. 1940 Old Military Rd, Lot 26Con 6, Geo Twp Lochiel SDG. 1799 CR 16, Lot 22Con 12, Geo Twp South Plantagenet PR. 141 Marleau Rd, Lot 1Con 1, Geo Twp North Plantagenet PR	No	None	No Further Archaeology
2021	P378-0037-2020	Stage 2 Archaeological Assessment: Trailsedge Phase 5 North Part Lots 1, 2, 3, & 4, Concession 3 OF, Part 2 Plan 5R8348 PIN 04404-1472, Part 1 Plan 4R29569 PIN 04404-0503, Part 1 Plan 4R23507 PIN 04404-0541, Part 5 Plan 4R-23507 PIN 04404-0539, Part 2 Plan 4r-22552 PIN 04404-0543, and Part 1 Plan 4R22552 PIN 04404-0542 Geographic Township of Gloucester City of Ottawa, Ontario	Yes	BiFv-27	Stage 3 Recommended for some of the Sites Found
2021	P378-0038-2020	Stage 2 Archaeological Assessment: Trailsedge Phase 4 South Part Lots 1, 2, & 3, Concession 3 OF, Part 1 Plan 4R30034 PIN 04404-1417, Part 4 Plan	Yes	BiFv-25	Stage 3 Recommended for All Sites Found

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		4R19340 PIN 04404-1344, Part 2 Plan 4R30034 PIN 04404-1418, and Part 55 Plan 4R29086 PIN 04404-1353 Geographic Township of Gloucester City of Ottawa, Ontario			
2021	P378-0056-2021	Stage 4 Archaeological Mitigation: Mahar Site (BiFv-26), Trailsedge Phase 5 North, Part Lot 3, Concession 3, Plan 4R-23507 PIN 04404-0541, Part of Block 115, Plan 4M-1545 Geographic Township of Gloucester City of Ottawa, Ontario	No	BiFv-26	Stage 4 Complete – No Further Work
2021	P378-0048-2020	Stage 3 Archaeological Assessment: Mahar Site (BiFv-26), Trailsedge Phase 5 North Part Lots 1, 2, 3, & 4 Concession 3 OF, Part 2 Plan 5R8348 PIN 04404-1472, Part 1 Plan 4R29569 PIN 04404-0503, Part 1 Plan 4R23507 PIN 04404-0541, Part 5 Plan 4R-23507 PIN 04404-0539, Part 2 Plan 4r-22552 PIN 04404-0543, and Part 1 Plan 4R22552 PIN 04404-0542 Geographic Township of Gloucester City of Ottawa, Ontario	No	BiFv-26	Stage 4 Recommended
2021	P378-0049-2020	Stage 3 Archaeological Assessment: Proulx Site (BiFv-25), Trailsedge Phase 4 South Part Lots 1, 2, & 3, Concession 3 OF, Part 1 Plan 4R30034 PIN 04404-1417, Part 4 Plan 4R19340 PIN 04404-1344, Part 2 Plan 4R30034 PIN 04404-1418, and Part 55 Plan 4R29086 PIN 04404-1353 Geographic Township of Gloucester City of Ottawa, Ontario	Yes	BiFv-25	No Further Archaeology
2021	P376-0012-2017	Stage 1 Archaeological Assessment Leitrim Road Realignment and Widening,	No	None	Stage 2 Recommended

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Parts of Lots 14-19, Concessions 1-5, Gloucester Township, Carleton County in the City of Ottawa, Ontario			for Part of Study Area
2021	P385-0044-2018	Stage 1 Archaeological Assessment Limoges Water and Waste Water Service Class EA Lots 9, 10, And 11, Concession 8, Lot 9, Concession 9, and Lots 10-15, Concessions 9 and 10, Township of Russell, United Counties of Prescott And Russell, Province Of Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2021	P1107-0040-2021	Stage 1 Archaeological Assessment Cheney-Limoges Water Transmission Main Part of Lots 25 to 30, Concession 1, Cambridge Township, and Part of Lots 20 to 28, Concession 10, and Lot 21 to 28, Concession 11, Clarence Township, Prescott and Russell County; Part of Lots 28, Concession 1 and 2, Cumberland Township, Carleton County	Yes	None	Stage 2 Recommended for Part of Study Area
2021	P1107-0042-2021	Stage 2 Archaeological Assessment Cheney-Limoges Water Transmission Main, Part of Lots 20 and 24 to 27, Concession 10, Geographic Township of Clarence and part of Lot 25 and 30, Concession 1, Geographic Township of Cambridge, Prescott and Russell County, Ontario.	Yes	None	No Further Archaeology
2020	P369-0097-2019	Stage 1 Archaeological Assessment Thunder/Boundary Roads Part 1 Plan 5R-12400, Part 1 and 2 Plan 4R-23075, Part 1 Plan 5R-4318 Part Lot 1 Concession 9 Ottawa Front Geographic Township of	No	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Gloucester Carleton County City of Ottawa, Ontario			
2020	P376-0017-2018	Stage 1 Archaeological Assessment Earl Armstrong Road Extension Environmental Assessment Study, Part Lots 22-25, Concession 3; Lots 22-25; Concession 4; Lots 21-25 Concession 5; Lots 21-26 Concession 6 Rideau River, Geographic Township of Gloucester, Carleton County; City of Ottawa, Ontario	No	None	Stage 2 Recommended for Part of Study Area
2018	P376-0016-2017	Stage 1 Archaeological Assessment Vanguard Drive Extension Environmental Assessment Study, Part Lots 1-2, Concession 11, Geographic Township of Cumberland, Russell County & Part Lot 1, Concession 3 Ottawa River, Geographic Township of Gloucester, Carleton County; City of Ottawa, Ontario	No	None	Stage 2 Recommended for Part of Study Area
2018	P378-0025-2017	Stage 1-2 Archaeological Assessment: Bank Street Widening Concession 4, Part Lots 15, 16, 17, 18, 19, 20, 21, 22 and Concession 5, Part Lots 15, 16, 17, 18, 19, 20, 21, 22 Geographic Township of Gloucester City of Ottawa, Ontario	Yes	None	No Further Archaeology
2018	P415-0160-2018	Stage 1 Archaeological Assessment: Carlsbad Lands Assembly Part of Lots 11-13 and 16-20, Concession 7 Ottawa Front, Lots 3-10 and 13-15, Concession 8 Ottawa Front, and Lots 1-10, Concession 9 Ottawa Front, Geographic Township of Gloucester, former Carleton County, now City of Ottawa, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
2018	P378-0033-2018	Stage 2 Archaeological Assessment: Legault Lands Development – Trim Road, Part Lot 2, Concession 9, Geographic Township of Cumberland, Carleton, County, Ottawa, Ontario	Yes	None	No Further Archaeology
2018	P378-0030-2018	Stage 1 Archaeological Assessment Legault Lands Development – Trim Road Part Lot 2, Concession 9 Geographic Township of Cumberland Carleton, County Ottawa, Ontario	Yes	None	Stage 2 Recommended for Entire Study Area
2018	P415-0157-2017	Stage 1 and 2 Archaeological Assessment: Proposed Navan Quarry Expansion Part of Lots 9 and 10, Concession 5, Geographic Township of Cumberland, former Russell County, now City of Ottawa, Ontario	Yes	None	No Further Archaeology
2018	P385-0039-2018	Stage 1 & 2 Archaeological Assessment Avalon – Aquaview Development Parts of Lot 1 and Lot 2, Concession 10, Geographic Township of Cumberland, City of Ottawa, Ontario	Yes	None	No Further Archaeology
2018	P094-0249-2017	Stage 1 and 2 Archaeological Assessment Orleans Family Health Hub Part of Lot 2, Concession 11 (Former Township of Cumberland, County of Russell) City of Ottawa Regional Municipality of Ottawa-Carleton, Ontario	Yes	None	No Further Archaeology
2017	P415-0139-2017	Stage 2 Archaeological Assessment: Commuter Parking Lot Expansion at the Highway 417 and Limoges Road Interchange Part of Lot 30, Concession 4, Geographic Township of Cambridge, Municipality of Nation, United Counties of Prescott and Russell, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
2017	P415-0114-2016	Stage 1 Archaeological Assessment: Limoges Road Carpool Part of Lot 30, Concession 4, Geographic Township of Cambridge, Municipality of Nation, United Counties of Prescott and Russell, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2016	P369-0048-2016	Stage 2 Archaeological Assessment Trailsedge East Subdivision Part Lots 1-3 Concession 3 Geographic Township of Gloucester Carleton, County Ottawa, Ontario	Yes	None	No Further Archaeology
2016	P366-0042-2013	Stage 1 Archaeological Assessment Eden Park (East Trails Edge) Subdivision Lots 1-3 Concession 3 Geographic Township of Gloucester City of Ottawa Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2016	P350-0033-2013	Stage 1 & 2 Archaeological Assessment Brian Coburn Boulevard Part of Lots 1 to 6, Concession 3 Ottawa River, Former Township of Gloucester Carleton County, City of Ottawa	Yes	None	No Further Archaeology
2016	P031-057-2012	Stage 4 Archaeological Assessment of the Davis Site (BiFv-23) Part Lot 14, Concession 5 (Rideau Front) Geographic Township of Gloucester Former County of Carleton Now City of Ottawa, Ontario	Yes	BiFv-23	No Further Archaeology
2016	P350-0038-2015	Stage 1 and 2 Archaeological Assessment Proposed Residential Subdivision, Concession 5 Rideau Front Part Lot 18, Part Lot 19 Geographic Township of Gloucester, Ottawa, Ontario	Yes	None	No Further Archaeology
2016	P366-0047-2015	Stage 1 and 2 Archaeological Assessment Proposed Kellam Lands Residential Subdivision Concession 5 Rideau Front, Part Lot 19 Geographic	Yes	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Township of Gloucester, Ottawa, Ontario			
2016	P270-0003-2015	Stage 2 Archaeological Assessment Tenth Line Road Widening Part Lots 3 and 4, Concessions 11 and 12, Geographic Township of Cumberland, Carleton County, Ontario	Yes	None	No Further Archaeology
2016	P366-0040-2013	Stage 1 Archaeological Assessment East Urban Community Centre (EUC) Project Community Design Plan (CDP) Lots 1-4 Concession 3 Geographic Township of Gloucester and Lots 1-2 Concession 11 Geographic Township of Cumberland City of Ottawa Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2015	P311-090-2012	Stage 1 Archaeological Assessment, Bank Street Widening EA from Leitrim Road to Rideau Road, Lots 16 through 25, Concession 4 & 5, Rideau Front, City of Ottawa, Former Township of Gloucester, Carleton County, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2014	P366-0041-2013	Stage 1 Archaeological Assessment, “Concession 10 Lands” of the Community Design Plan (CDP), Lots 4 to 6, Concession 11, Geographic Township of Cumberland, Former County of Russell, City of Ottawa, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2014	P336-0051-2014	Stage 1 And 2 Archaeological Assessments of the Canaan Quarry, Part Lot 14, Concession 1, Geographic Township of Cumberland, City of Ottawa	Yes	None	No Further Archaeology
2014	P415-0015-2014	Stage 1-2 Archaeological Assessment of the Proposed Navan Subdivision	Yes	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
2014	P366-026-2013	Stage 1 Archaeological Assessment Capital Region Resource Recovery Centre Boundary Road Site Part Lots 22-25, Concession 11, Cumberland Township, City of Ottawa	Yes	None	No Further Archaeology
2013	P003-0389-2013	Stage 1 & 2 Archaeological Assessment 4747 Bank Street Part Lot 18, Concession 5 Geographic Township of Gloucester (Rideau Front) City of Ottawa	Yes	None	No Further Archaeology
2013	P369-012-2013	Stage 1 Archaeological Assessment Bisson Lands, Part Lot 4, Concession 11 in the Geographic Township of Cumberland, Historic County of Russell, Ottawa, Ontario	Yes	None	No Further Archaeology
2012	P003-352-2012	Stage 1 & 2 Archaeological Assessment, Eastboro Phase 2A & 2B, Part Lot 3, Concession 4, Geographic Township of Gloucester (Ottawa Front), City of Ottawa	Yes	None	Stage 2 Recommended for Entire Study Area
2012	P003-337-2012	REVISED: Stage 1 & 2 Archaeological Assessment, Eastboro Phase 2A & 2B, Part Lots 3 & 4, Concession 4, Geographic Township of Gloucester (Ottawa Front), City of Ottawa	Yes	None	Stage 2 Recommended for Entire Study Area
2012	P031-038-2011	Stage 2 Archaeological Assessment of Intersection Modifications at Bank Street/Conroy Road/Kemp Drive, Part Lot 14, Concession IV and V (Rideau Front), Geographic Township of Gloucester, City of Ottawa, Ontario	Yes	None	Stage 2 Recommended for Entire Study Area
2012	P031-046-2011, P031-049-2011	Stage 2 AA of Additional Lands for the Proposed Intersection Modifications at Bank Street/Conroy Road/Kemp Drive and Stage 3 AA of the Davis Site (BiFv-23), Part Lots 14 & 15,	Yes	BiFv-23	Stage 3 Recommended for All Sites Found

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Concession 5 (Rideau Front), Geo Twp of Gloucester, Former County of Carleton, Now City of Ottawa, Ontario			
2012	P311-049-2011	Stage 1 AA Hwy 417 Corridor from 8th Line to OC Rd 26, Lots 20-18, Con. 5, Lots 18-12, Con. 6, Lots 12-5, Con. 7, Lot 5, Con. 7 Lot 5, Con 8, Lot 1, Con 9, Ottawa Front, Geo. Twp of Gloucester Lot 21, Con. 11, Geo. Twp of Cumberland, Ottawa, ON	Yes	None	Stage 2 Recommended for Part of Study Area
2012	P311-080-2011	Stage 2 Archaeological Assessment, Highway 417, Bear Brook Bridge and Ramsay Creek, Part Lots 19 and 20 Concession 5, Part Lots 17 and 18 Concession 6, Part Lots 6 and 7 Concession 7, Ottawa Front, Geographic Township of Gloucester	Yes	None	No Further Archaeology
2012	P311-089-2011	Stage 1 Archaeological Assessment, Navan Quarry Expansion, Part Lots 9 & 10, Concession 5, Geographic Township of Cumberland, Russell County, City of Ottawa, Ontario	Yes	None	Stage 2 Recommended for Part of Study Area
2011	P031-033-2011	Stage 1 Archaeological Assessment of Intersection Modifications at Bank Street/Conroy Road/Kemp Drive, Part Lot 14, Concessions IV and V, Geographic Township of Gloucester, City of Ottawa, ON	Yes	None	Stage 2 Recommended for Part of Study Area
2010	P002-178-2009	Stage 1 Archaeological Assessment, Canadian Forces Station Leitrim Road Realignment, City of Ottawa, Ontario	No	None	Unknown
2008	P003-186-2008	An Archaeological Assessment (Stages 1 & 2) of the proposed “Leemay Homes Development”, 4198 Hawthrone Road, Part of	Yes	None	No Further Archaeology

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
		Lots 17 & 18, Concession 5, Township of Gloucester (Rideau Front), City of Ottawa, County of Carleton			
2008	P042-118-2007	Stage 3 Archaeological Assessment of the Cosgrove Site, BiFv-11, Lot 3, Concession 4, Ottawa Front, Geographic Township of Gloucester, City of Ottawa, Carleton County	Yes	BiFv-11	No Further Archaeology
2006	P051-094-2006	Stage 1 AA of the proposed widening of Tenth Line Road, Lots 1 to 6, Conc. 10, Geo. Twp of Cumberland, Ottawa	Yes	None	No Further Archaeology
2005	P051-044	Stage 1 Archaeological & Heritage Assessment of the Proposed East-West Corridor Light Rail Transit Project, Geographic Townships of Cumberland, Gloucester, Goulbourn, March & Nepean, City of Ottawa	Yes	None	Additional Stage 1 and Stage 2 Recommended
2004	P051-035	Archaeological Resource Inventory and Assessment of Potential Russell Township, Prescott Russell County	Yes	None	Stage 1 and Stage 2 Recommended for Part of Study Area
1999	N/A	The Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton	Yes	None	Stage 1 Recommended
1999	99-027	Stage 1 Archaeological Assessment of the Hydro Transmission Corridor from the Hawthorne Transformer Station (Ottawa) to the Cumberland Junction, Regional Municipality of Ottawa Carleton	Yes	None	Stage 2 Recommended for Part of Study Area
1996	96-018	A Phase 1 Heritage/Archaeological Assessment of Clarence Township Prescott Russell County	Yes	None	Stage 1 Recommended

Date	PIF	Report Name	Report Accessible	Associated Borden Number	Results
1988	N/A	A Heritage and Archaeological Study of the Village of Vars, Cumberland Township, Ottawa Carleton Region, Water Transmission	Yes	None	Stage 2 Recommended for Part of Study Area
1980	N/A	An Archaeological Overview of the South Nation River Drainage Basin: Background Paper No. 3	Yes	None	Stage 1 and Stage 2 Recommended
	Unknown	Stage 2 Archaeological Assessment and Archaeological Heritage Resources Technical Support Document for the Environmental Assessment of the Proposed WSI Navan Landfill Expansion Part Lots 2, 3, and 4, Concession 4, Ottawa Front, Geographic Township of Gloucester, City of Ottawa	No	BiFv-11	Stage 3 Recommended

A total of 20 reports were not available and thus could not be included in the archaeological potential model. The MCM was contacted to provide the missing reports but no response was received before the submission of this screening report.

3.2 Registered Archaeological Sites

The primary source of information regarding previously registered archaeological sites within the Province of Ontario is the MCM archaeological sites database (ASDB), which designates archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 km east to west and approximately 18.5 km north to south. Each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found.

The ASDB was searched on 1 August 2024 and there are eight registered archaeological sites located within 300 m of the Bear Brook Watershed (MCM 2024). The sites are summarized in Table *2*. All of the sites are located within the eastern limits of the City of Ottawa in areas of recent development. As such, the locations of registered archaeological sites within the Bear Brook Watershed do not necessarily correspond to historical land use patterns and there are likely many yet to be identified archaeological sites throughout the watershed.

Table 2: Summary of Registered Archaeological Sites within 300 m of the Bear Brook Watershed.

Borden Number	Site Name	Time Period	Affinity	Site Type	Development Review Status
Sites within the Bear Brook Watershed					
BiFv-11	Cosgrove	Post-Contact	Euro-Canadian	Farmstead	No Further CHVI
BiFv-27	Taillefer	Post-Contact	Euro-Canadian	Homestead	No Further CHVI
BiFv-25	Proulx	Post-Contact	-	Agricultural	No Further CHVI
BiFu-10	Location 2	Post-Contact	-	Farmstead	Further CHVI
Sites within 300 m of the Watershed					
BiFu-9	Location 1	Post-Contact	-	Farmstead	Further CHVI
BiFv-13	Rathwell/Kehoe Farmstead	Post-Contact	Euro-Canadian	Cabin, Farmstead, Workshop	No Further CHVI
BiFv-14	Belanger/Corbeille Farmstead	Post-Contact	Euro-Canadian	Farmstead	No Further CHVI
BiFv-26	Mahar Site	Post-Contact	-	Farmstead	No Further CHVI

All eight registered archaeological sites date to the Post-Contact period. As the locations of archaeological sites are confidential in Ontario, the exact locations of the sites are not shown on the archaeological potential model mapping.

4.0 Archaeological Potential Model

4.1 Determining Archaeological Potential

The archaeological potential model for the Bear Brook Watershed was created following Section 1.3.1 of the MCM's (2011) *Standards and Guidelines for Consultant Archaeologists.* Archaeological potential was identified based on the presence of the following features:

- Previously identified archaeological sites.
- Water Sources including primary water sources (lakes, rivers, streams, and creeks), secondary

water sources (intermittent streams and creeks, springs, marshes, and swamps), features indicating past water sources, and accessible or inaccessible shorelines.

- Elevated topography (eg, eskers, drumlins, large knolls, plateaux).
- Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground.
- Distinctive land formations that might have been special or spiritual places
- Resource areas for food, medicinal plants, scarce raw materials, or areas of early Euro-Canadian industry.
- Areas of early Euro-Canadian settlement
- Early historical transportation routes (trails, passes, roads, railways, portage routes).
- Property listed on a municipal register or designated under the Ontario Heritage Act or that is federal, provincial or municipal historic landmark or site
- Property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations.

4.1.1 Cemeteries

All cemeteries within the Bear Brook Watershed have archaeological potential due to the risk of ground disturbance impacting human remains. The MCM requires the completion of archaeological assessments prior to the issuance of municipal permits for ground disturbance within 10 m of known cemetery boundaries. This requirement is to mitigate the risk of impacts to unmarked graves that may be located outside of the present cemetery boundaries. Additionally, the Bereavement Authority of Ontario (BAO) requires professionally licensed archaeologists conducting invasive archaeological assessments within a cemetery to submit a request to the Register of the BAO for an investigation order prior to commencement (BAO 2018).

A map of Ottawa Region Cemeteries is available from the Ontario Genealogical Society's Ottawa Branch (OGS 2023). According to the map, there are 11 cemeteries within the Bear Brook Watershed. The cemeteries are summarized in Table 3 and their locations are shown on Map 10. This list of cemeteries may not be complete as there may exist additional cemeteries that have not been documented or are not widely known.

Table 3: Cemeteries within the Bear Brook Watershed

Name	Address
St. Laurent Cemetery	5958 Piperville Road, Carlsbad Springs, Ontario
St. Mary's Anglican Cemetery	3641 Trim Road, Navan
Wilson Memorial Cemetery	1700 Colonial Road, Navan
St. Matthew's Roman Catholic Cemetery	1248 Lacroix Road, Hammond

Name	Address
Sacred Heart Roman Catholic Cemetery	2302 Dollard Street, Bourget
Grant Baptist Cemetery	Grant Road, Limoges
St. Viateur Roman Catholic Cemetery	13 Main Street, Limoges
St. Guiliame Cemetery	Division Street (West End), Vars
Patterson Presbyterian Cemetery	Forced Road, Vars
Vars United Cemetery	2459 Forced Road, Vars
Trinity Anglican Cemetery	8785 Russell Road, Bearbrook

4.1.2 Features Indicating Archaeological Potential Has Been Removed

Archaeological potential may be impacted and determined to have been removed when an area has undergone extensive and deep land alterations that would have severely damaged the integrity of any archaeological resources. This includes quarrying, major landscaping involving grading below topsoil, building footprints, and sewage and infrastructure development. The MCM requires on site inspection and documentation to demonstrate archaeological potential is removed. As such, identifying disturbances is beyond the scope of the present archaeological screening report.

The placement of fill or other material over the natural topography or a potential archaeological site does not negate the potential for archaeological resources. Areas that have been subject to infilling may have deeply buried archaeological resources. A combination of site-specific background research and on site inspection can help identify areas that may have deeply buried archaeological resources.

4.2 Indigenous Archaeological Potential

Indigenous archaeological potential primarily derives from water sources, areas of distinctive landforms, and areas of well drained sandy soil. The locations of water sources were referenced from stream network mapping provided by South Nation Conservation. All water sources identified as streams or virtual flow were included. Drainage ditches, canals, or other water sources derived from recent anthropogenic sources were excluded. The mapping was then compared to water sources on historical plans and topographic mapping to capture additional water sources including wetlands. As per Standard 1C (iii) of Section 1.4.1 of the *Standards and Guidelines for Consultant Archaeologists*, all areas within 300 m of a natural water source are identified as having archaeological potential (MCM 2011; Map 9).

Areas of distinctive landforms or well drained sandy soils were taken from the physiography, surficial geology and soil drainage mapping (Map 10). The archaeological potential associated with these features was restricted to their footprints on the maps as per Standard 1E of Section 1.4.1 of the Standards and Guidelines (MCM 2011). Areas within 300 m of the beaches and fluvial terraces depicted on the surficial geology map also have archaeological potential as these features are indicators of ancient water sources

and may be the location of Indigenous land use.

As there are currently no registered Indigenous archaeological sites within the Bear Brook Watershed, the Indigenous archaeological potential is currently not derived from the presence of any registered sites. However, should Indigenous archaeological sites be found during future archaeological assessments, there will be archaeological potential for additional Indigenous archaeological resources within 300 m of any new Indigenous archaeological sites.

4.3 Historical Archaeological Potential

Portions of the Bear Brook Watershed located within proximity to registered historical archaeological sites, cemeteries, areas of early settlement, and transportation routes have potential for historical archaeological resources. The location of registered archaeological sites was taken from the archaeological site database maintained by the MCM. According to the database, there are currently four registered archaeological sites within the Bear Brook Watershed and an additional four archaeological sites located within 300 m (MCM 2024; Map 11). Following Standard 1C(i) of Section 1.4.1 of the Standards and Guidelines, all areas located within 300 m of a registered archaeological site have archaeological potential (MCM 2011). When additional historical archaeological sites are found during future archaeological assessments, there will be the potential for additional historical archaeological sites within 300 m of the new site.

Areas of early historical settlement and transportation routes were derived from the historical plans and correspond to the roads, structures, and railways depicted on the plans (Maps 3 and 4). Within Ontario, structures or transportation routes pre-dating 1900 have archaeological potential. Archaeological potential was calculated from 300 m from structures and 100 m from roads and railways as per Standards 1C(iii) and 1D of Section 1.4.1 of the Standards and Guidelines (MCM 2011; Map 12). All cemeteries within the Bear Brook Watershed have archaeological potential within a 10 m buffer.

4.4 Combined Archaeological Potential of the Bear Brook Watershed

Map 13 shows the combined Indigenous and historical archaeological potential for the Bear Brook Watershed. Much of the study area has archaeological potential due to the presence of the features outlined in Sections 4.2 and 4.3 above. These include proximity to water sources, registered archaeological sites, cemeteries, distinctive landforms, pockets of well-drained sandy soil, and areas of early historical settlement and transportation routes.

The locations of previous archaeological assessments that recommended additional archaeological assessment are delineated on Map 13. This is intended as a planning tool only and licensed archaeologists conducting any future archaeological assessments for these areas will refer to the specific reports to follow the report-specific recommendations. Areas identified as requiring no further archaeological assessment are based on reports detailing results of previous archaeological investigation that determined the potential in these areas has been negated or mitigated.

The areas identified as having archaeological potential are likely to require Stage 2 archaeological assessment, based on the MCM requirements. Stage 2 archaeological assessment typically includes pedestrian or test pit survey at 5 m intervals. Pedestrian survey involves walking ploughed fields that have recently been weathered by rainfall to document archaeological resources exposed by ploughing. Areas that cannot be ploughed will be recommended for test pit survey which involves the hand excavation of test pits to the depth of at least 5 cm into sterile subsoil. The excavated material is then

screened through mesh and examined for archaeological resources. Should archaeological resources be found during Stage 2 archaeological assessment, additional archaeological assessment may be recommended based on the find locations Cultural Heritage Value or Interest as defined in the MCM's Standards and Guidelines for Consultant Archaeologists (2011).

5.0 Analysis of Data Gaps

5.1 Limitations of the Archaeological Potential Model

Due to time constraints and accessibility of reports maintained by the MCM, the archaeological potential model has a number of data gaps. One significant gap is the lack of property inspections to ground truth field conditions. As the model is large-scale and did not examine property specific conditions, onsite inspections are beyond the scope of the archaeological screening report. As such there may be features indicating archaeological potential that would be apparent during a property inspection that were not identified by the model. Similarly, the model does not identify areas where archaeological potential may be removed such as previous disturbance from historic quarrying or other significant land altering activities that are no longer visible in the modern landscape. The identification of areas with low archaeological potential due to onsite conditions requires a property inspection conducted by a licensed archaeologist as part of a Stage 1 site-specific archaeological assessment completed under a Project Identification Form (PIF) registered with the MCM.

Another source of data gaps are previous archaeological reports that were not available within the MCM's archaeological report database or could not be obtained through the licensed archaeologist who produced the report. Similarly, previous archaeological assessments conducted before the creation of the MCM's report database are often not documented and may not have been included in this report. Reports known to have been completed but not accessible are listed in Table 1 (Section 3.1) of this report.

Another limitation of the archaeological potential model is the absence of oral and traditional history that may be shared by representative First Nation communities. Traditional knowledge reflecting the Pre-Contact land use within the Bear Brook Watershed is not available from published sources and future consultation with First Nation communities would be beneficial to provide a greater understanding of the traditional land use and historical significance within the area.

5.2 Data Gaps in the Archaeology of the Bear Brook Watershed

The archaeological understanding of the Bear Brook Watershed has been influenced by the nature of archaeological assessments within the watershed. As almost all of the previously completed archaeological assessments have been conducted by consultant archaeologists in support of development projects, most of the archaeological investigations have focused on the western and northern portions of the Watershed which are the areas that have seen the most land development. As a result, the eastern portions of the Bear Brook Watershed remains largely unassessed from an archaeological perspective.

Another limitation on the archaeological understanding of the Bear Brook Watershed is the small number of archaeological sites found within the Bear Brook Watershed resulting in significant gaps for both Pre-Contact and Post-Contact Periods. All eight registered archaeological sites within 300 m of the watershed are historical sites and represent only a small fraction of the 19th century occupation and settlement patterns within the Bear Brook Watershed as demonstrated by the number of homesteads depicted on the 19th century plans (Maps 3 and 4). Similarly, the lack of archaeological data reflecting Indigenous land

use is a significant data gap, which may be further understood as more archaeological assessments are completed within the area in the future. Based on the presence of registered Indigenous archaeological sites located in surrounding areas, it is highly probable the Bear Srook Watershed was utilized from at least the Early Archaic Period (9,000 – 8,000 BP). This gap highlights the need for additional archaeological assessments to document the Indigenous archaeological sites that are almost certainly located within the watershed.

6.0 Recommendations

The archaeological screening report has resulted in the following recommendations:

1) The portions of the Bear Brook Watershed identified as having archaeological potential on Map 13 and are not within an area previous subject to archaeological assessment should be subject to Stage 1 archaeological assessment by a licensed archaeological prior to ground disturbance. Areas identified as having archaeological potential will likely also require Stage 2 archaeological assessment should the Stage 1 archaeological assessment find the archaeological potential has not been previously impacted.

2) The portions of the Bear Brook Watershed identified as having been previously assessed and requiring further archaeological assessment as shown on Map 13 may require additional archaeological assessment following the specific recommendations of those assessments. A licensed archaeologist should review the recommendations of the previous archaeological assessments and comply with legislative requirements prior to any land altering activities.

3) The portions of the Bear Brook Watershed identified as having been previously assessed and recommended for no further archaeological assessment on Map 13 do not retain cultural heritage value or interest. No additional archaeological assessment is required these areas.

4) The portions of the Bear Brook Watershed with no archaeological potential and have not been previously assessed may still require archaeological assessment to follow municipal policies to ensure that all property to be impacted by development projects are assessed in compliance with legislative requirements. A licensed archaeologist should conduct a Stage 1 archaeological assessment to confirm the low archaeological potential of these areas.

5) Waterways within the Bear Brook Watershed may retain archaeological potential. The Ministry of Citizenship and Multiculturalism should be consulted prior to impacts to determine whether a marine archaeological assessment is required.

6) Should any Indigenous artifacts or human remains be encountered within the Bear Brook Watershed, Indigenous communities should be consulted as part of the archaeological assessment process.

7) If human remains are encountered, immediately stop all activities and notify the police or coroner. If the coroner declares that foul play is not suspected, the coroner will notify the Registrar, Funeral, Burial and Cremation Services Act and the owner of the land will take whatever steps are necessary to preserve the site, the human remains, and any artifacts until final disposition is made in accordance with the Funeral, Burial and Cremation Services Act and its regulations.

8) Additionally, in order for this archaeological screening report to remain relevant as a planning tool, the report and archaeological potential model should be periodically updated to include

additional archaeological assessments completed within the watershed or changes to the requirements for archaeological assessments. It is recommended that updates occur at a minimum of every five years to ensure continued relevance.

7.0 Advice on Compliance with Legislation

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

8.0 Important Information and Limitations of this Report

This report has been prepared for the specific site, development objective, and purpose as requested by the client and outlined in the original proposal, and subsequent agreed changes, for this project. The specific results, factual data, interpretations, and recommendations, outlined in this report are for the sole use of the client, and applicable only to this project and site location. No other warranty, expressed or implied, is made. No other party may rely on all, or portions, of this report without True North Archaeological Services Inc.'s express written consent. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of True North Archaeological Services Inc. The Client acknowledges the electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client can only rely upon the electronic media versions of this True North Archaeological Services Inc. report or other work products at their discretion.

True North Archaeological Services Inc. prepared this report in a manner consistent with the level of care and skill ordinarily exercised by other members of the archaeological consulting community currently practicing within the Province of Ontario, in accordance with the *Ontario Heritage Act* the Ministry of Citizenship and Multiculturalism's (MCM) 2011 *Standards and Guidelines for Consultant Archaeologists*, and all the subsequent MCM bulletins.

There are special risks whenever an archaeological assessment is completed, whether they be solely desktop assessments or in-field assessments, and even a thorough background study, comprehensive field investigation or sampling and testing program may fail to detect all archaeological resources present within the project area. The desktop review, field strategies and subsequent interpretations utilized for this report comply with the Ministry of Citizenship and Multiculturalism's (MCM) 2011 *Standards and Guidelines for Consultant Archaeologists*, and all the subsequent MCM bulletins.

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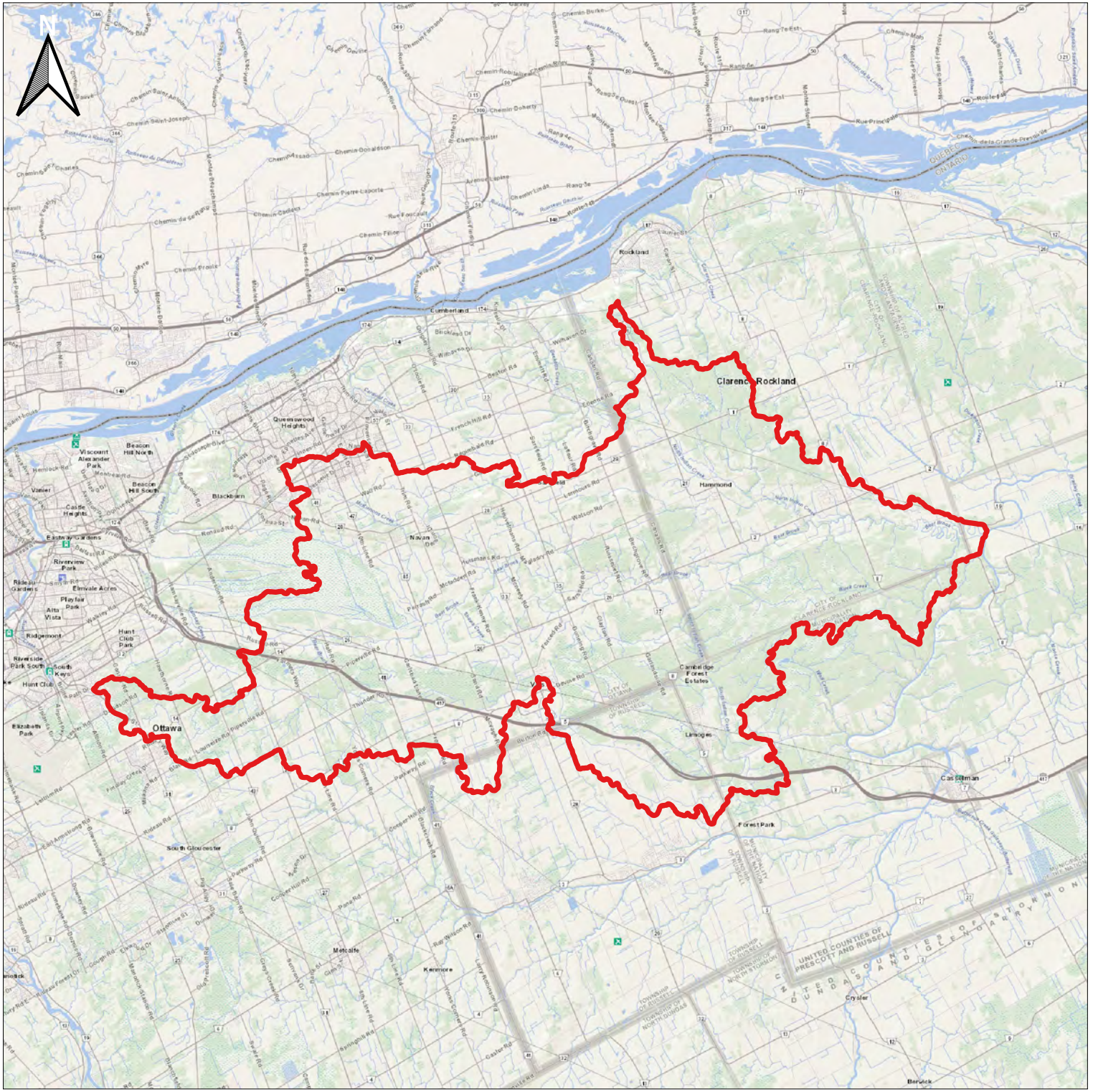
11.0 Maps



LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANs: LIO TOPOGRAPHIC MAP AND OPEN DATA TOPOGRAPHIC MAP

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CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

KEY PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GB
REVIEWED	RH
APPROVED	RH

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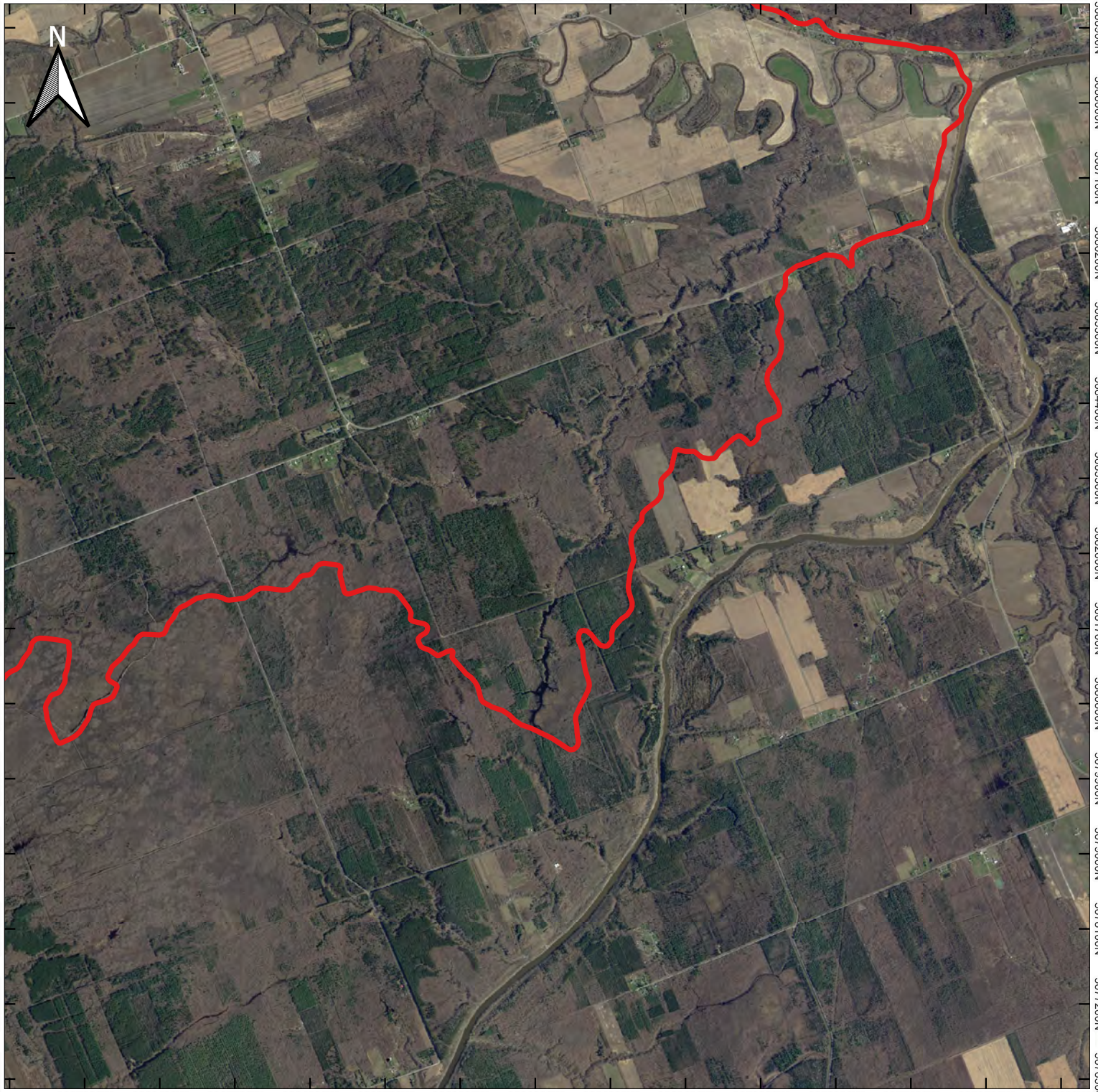

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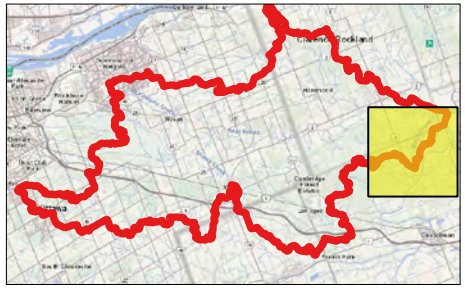

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Study Area

NOTE(S)

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REFERENCE(S)

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CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

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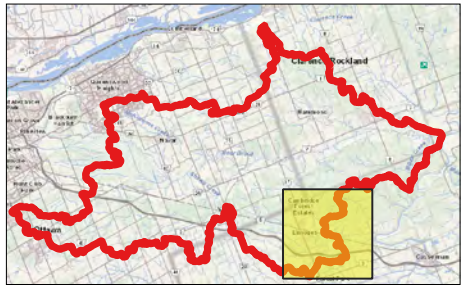

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LEGEND

Study Area

NOTE(S)

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REFERENCE(S)

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COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

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SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
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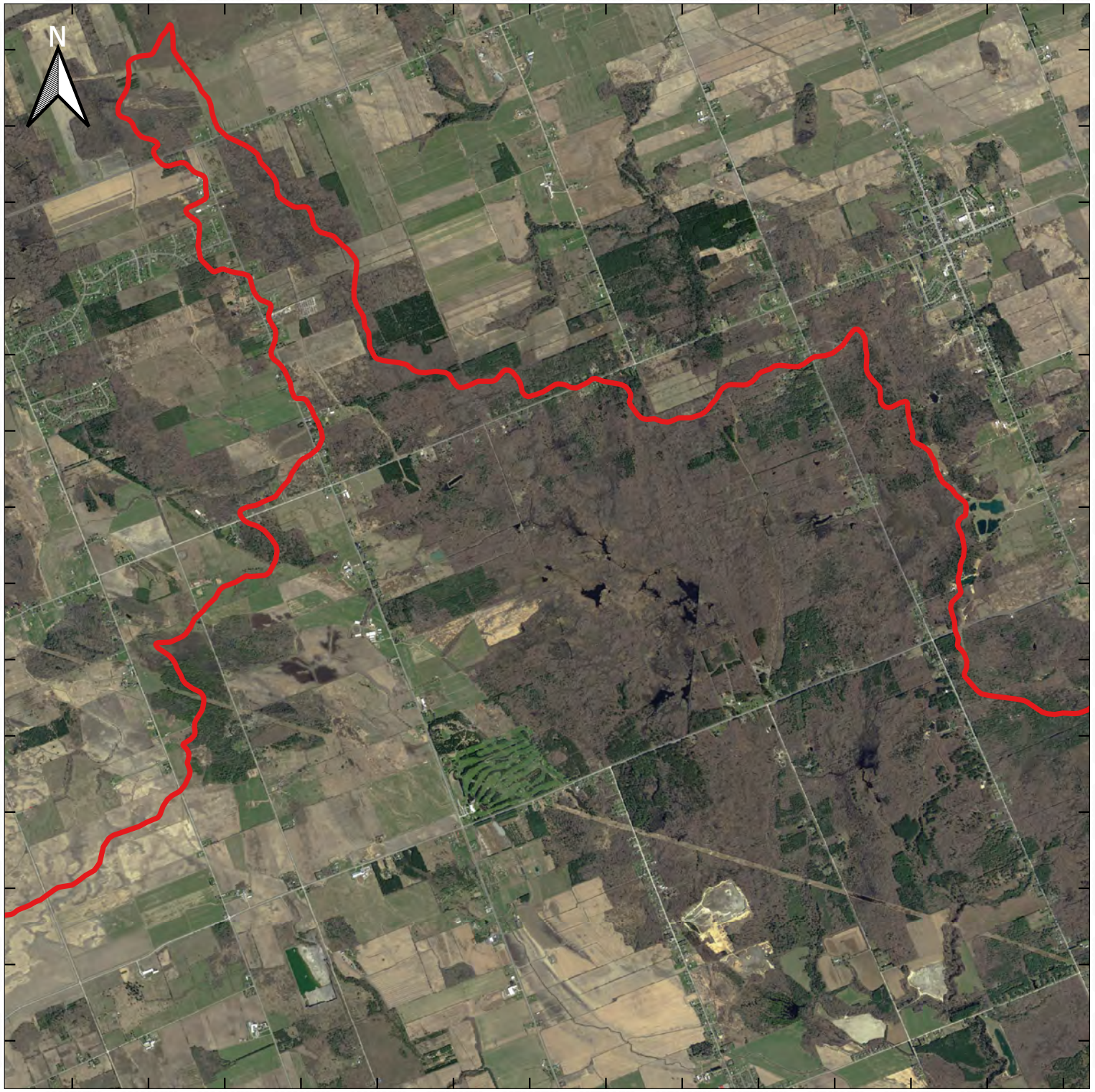

KEY MAP

SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

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SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
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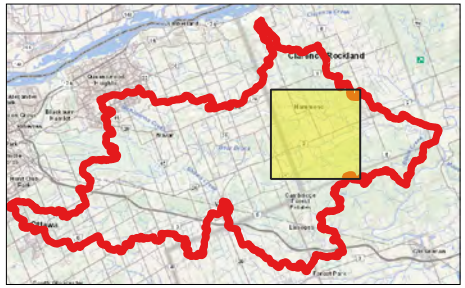

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LEGEND

Study Area

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REFERENCE(S)

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2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

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SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
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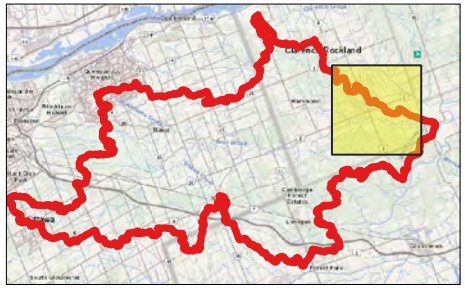
KEY MAP



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LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

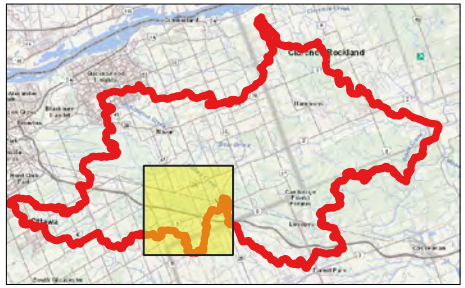
TITLE

SITE PLAN

CONSULTANT		
TRUE NORTH ARCHAEOLOGICAL SERVICES	YYYY-MM-DD	2024-08-10
	PREPARED	GKB
	REVIEWED	RH
	APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-E**

KEY MAP



SCALE 1:50,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28
2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

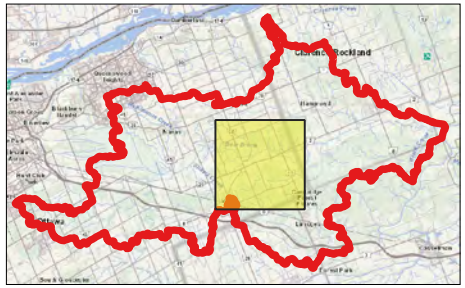
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-F**

KEY MAP



SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

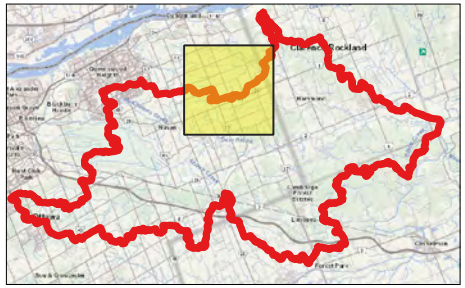
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-G**

KEY MAP



SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28
2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-H**

KEY MAP

SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

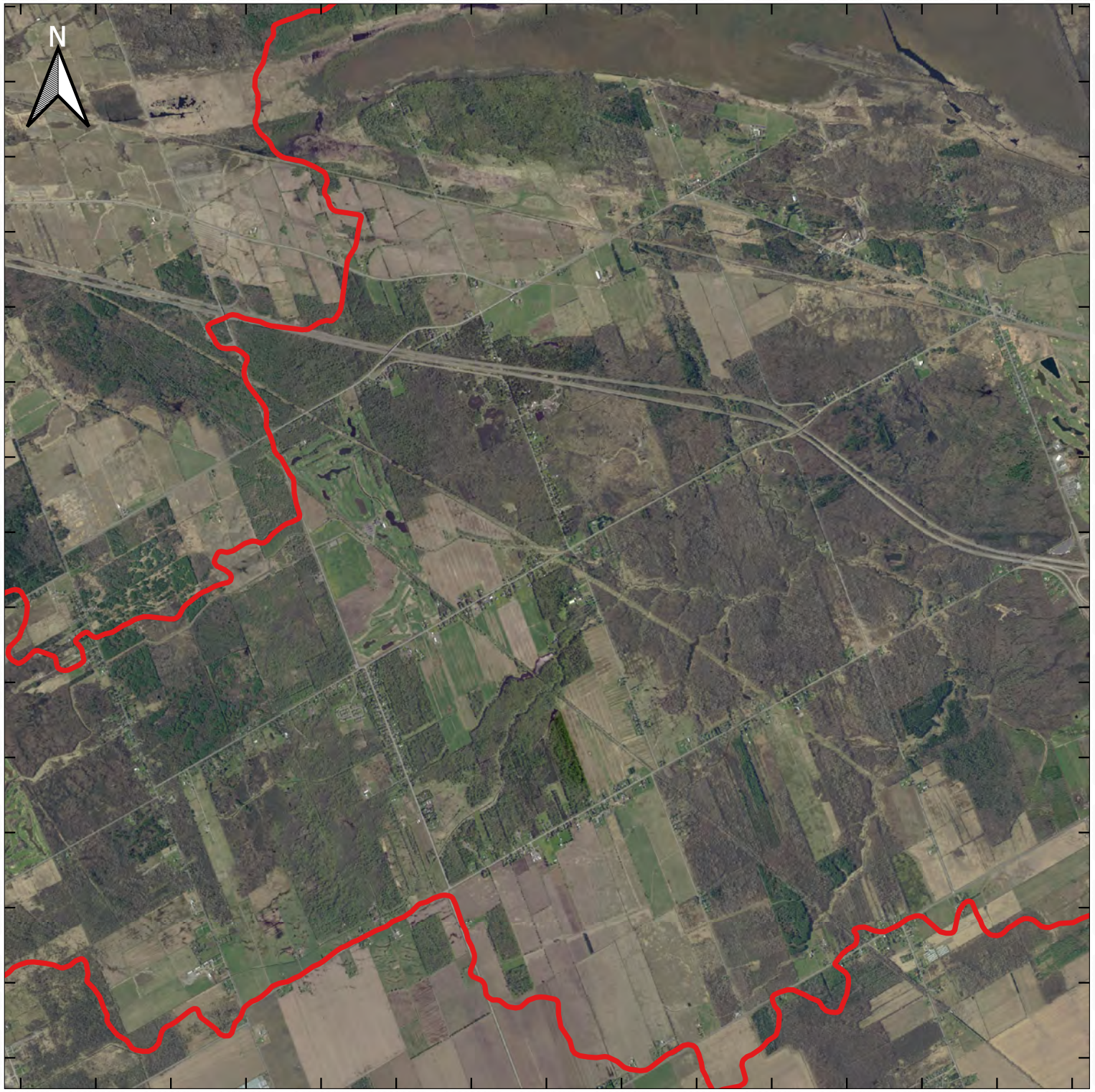
SITE PLAN

CONSULTANT

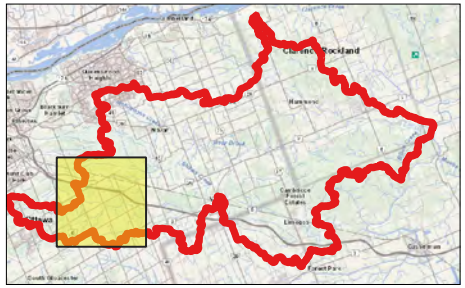
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-I**



KEY MAP



SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28
2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

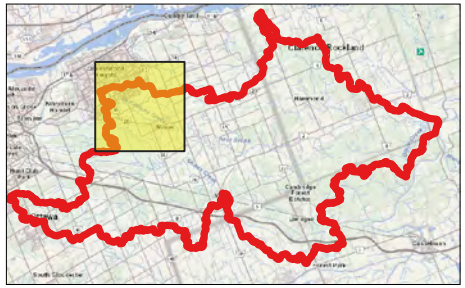
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-J**

KEY MAP



SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

SITE PLAN

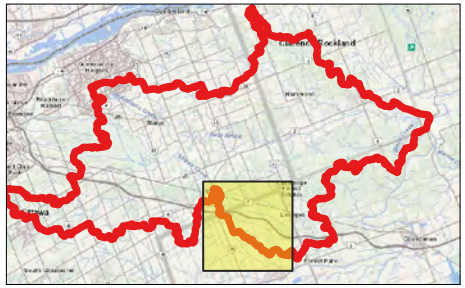
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-K**

KEY MAP



SCALE 1:110,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

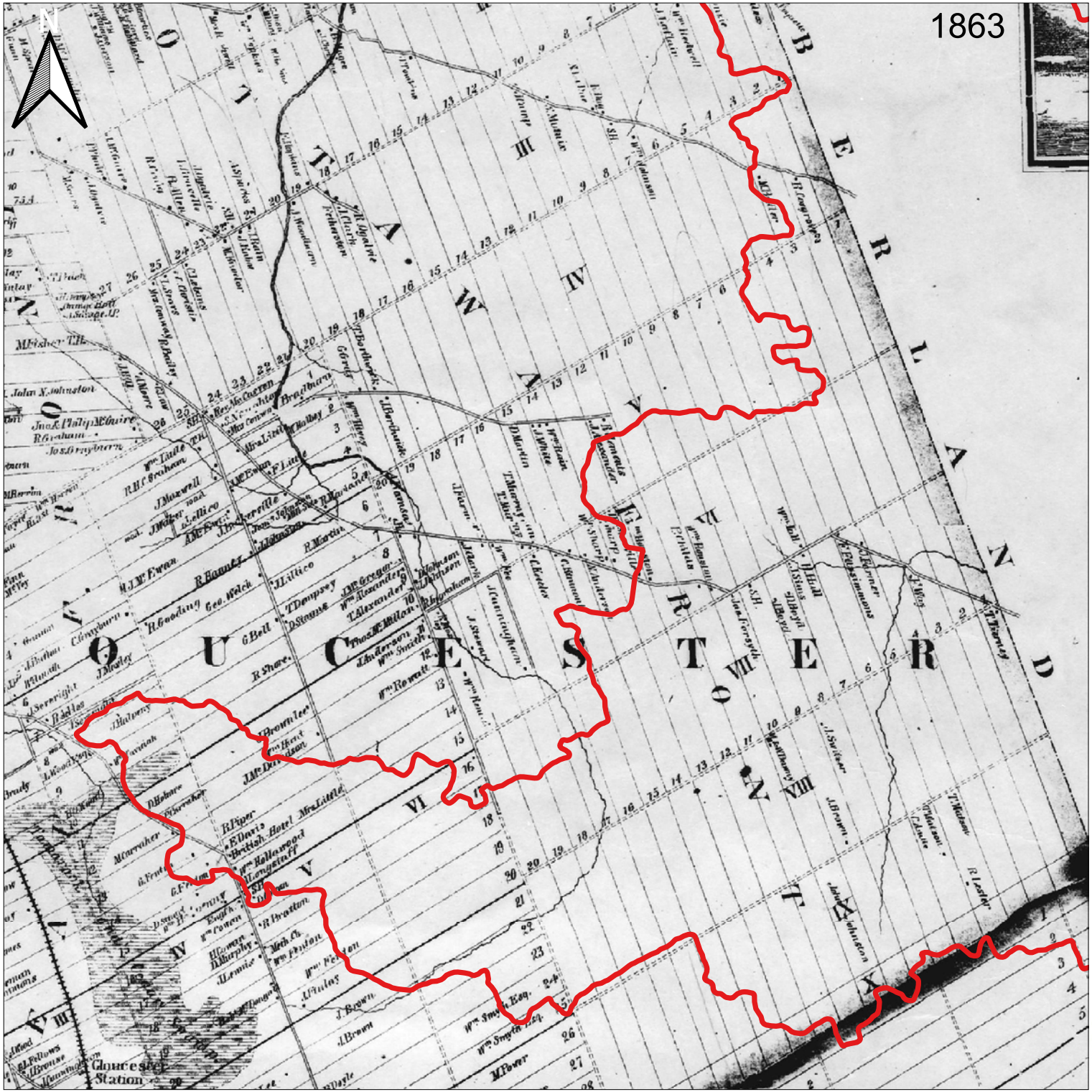
SITE PLAN

CONSULTANT

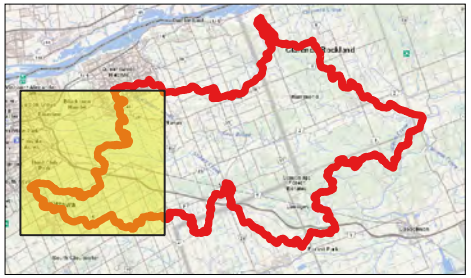
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-L**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H.F. WALLING, 1863

800 0 800 1,600 2,400 m

SCALE 1:40,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

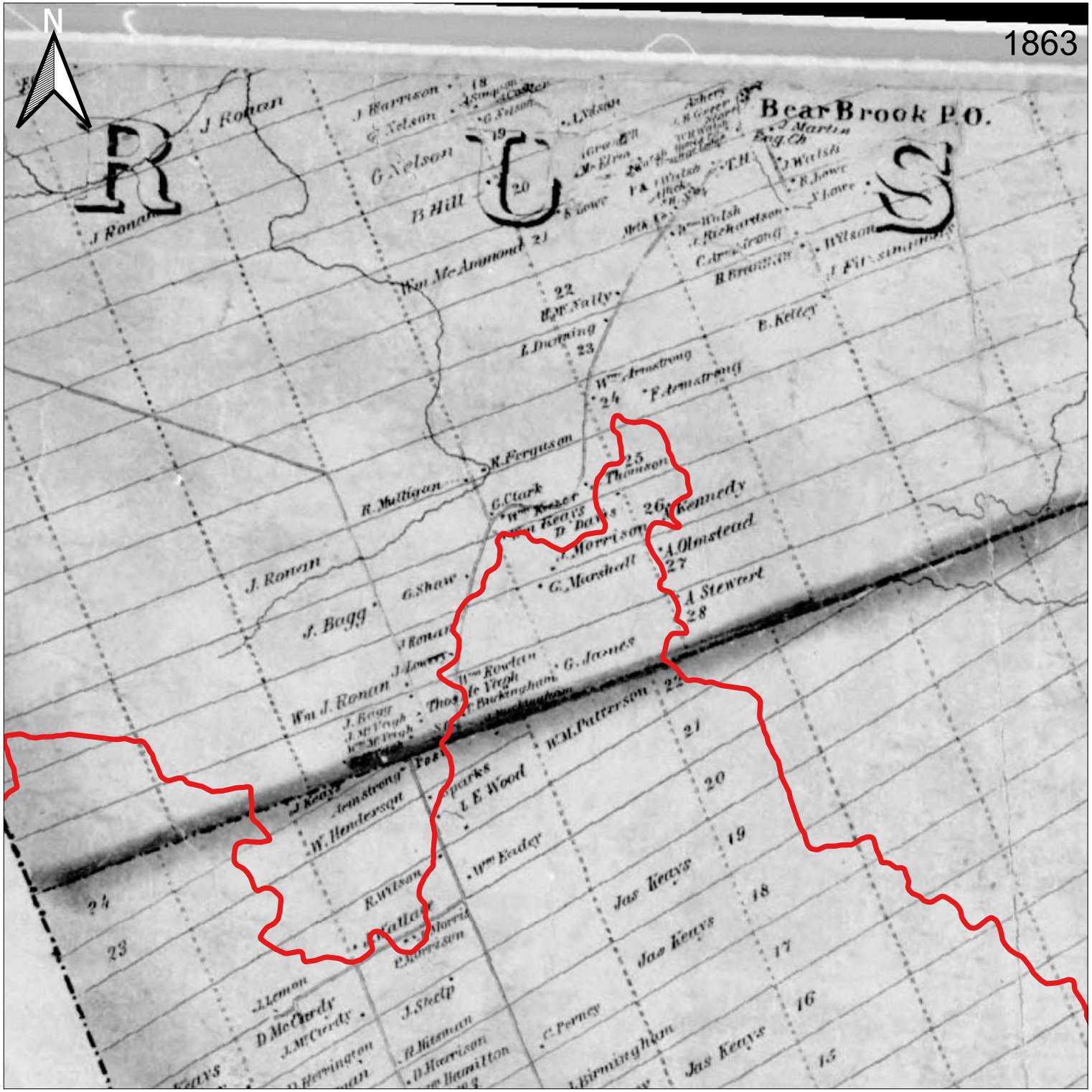
1863 H.F. WALLING MAP

CONSULTANT

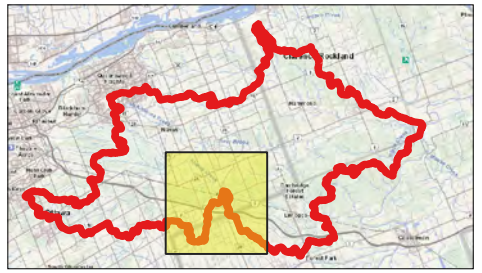
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**3-A**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H.F. WALLING, 1863

500 0 500 1,000 1,500 m

SCALE 1:80,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

1863 H.F. WALLING MAP

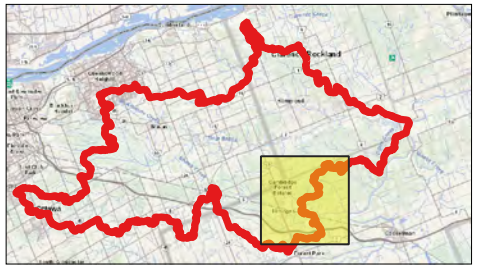
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**3-B**

KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H.F. WALLING, 1863

500 0 500 1,000 1,500 m

SCALE 1:70,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

1863 H.F. WALLING MAP

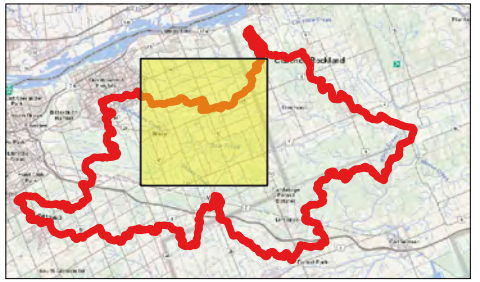
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**3-C**

KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H.F. WALLING, 1863

800 0 800 1,600 2,400 m

SCALE 1:100,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

1863 H.F. WALLING MAP

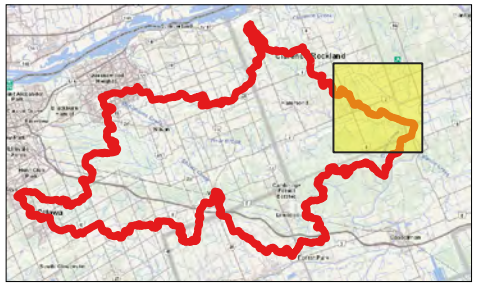
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**3-D**

KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H.F. WALLING, 1863

500 0 500 1,000 1,500 m

SCALE 1:70,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

1863 H.F. WALLING MAP

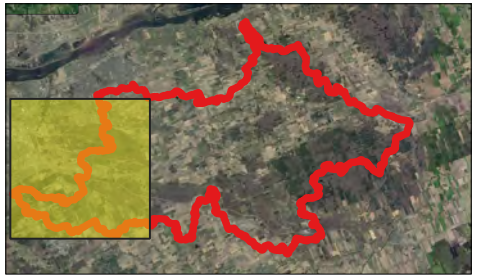
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**3-E**

KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1879

800 0 800 1,600 2,400 m

SCALE 1:110,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

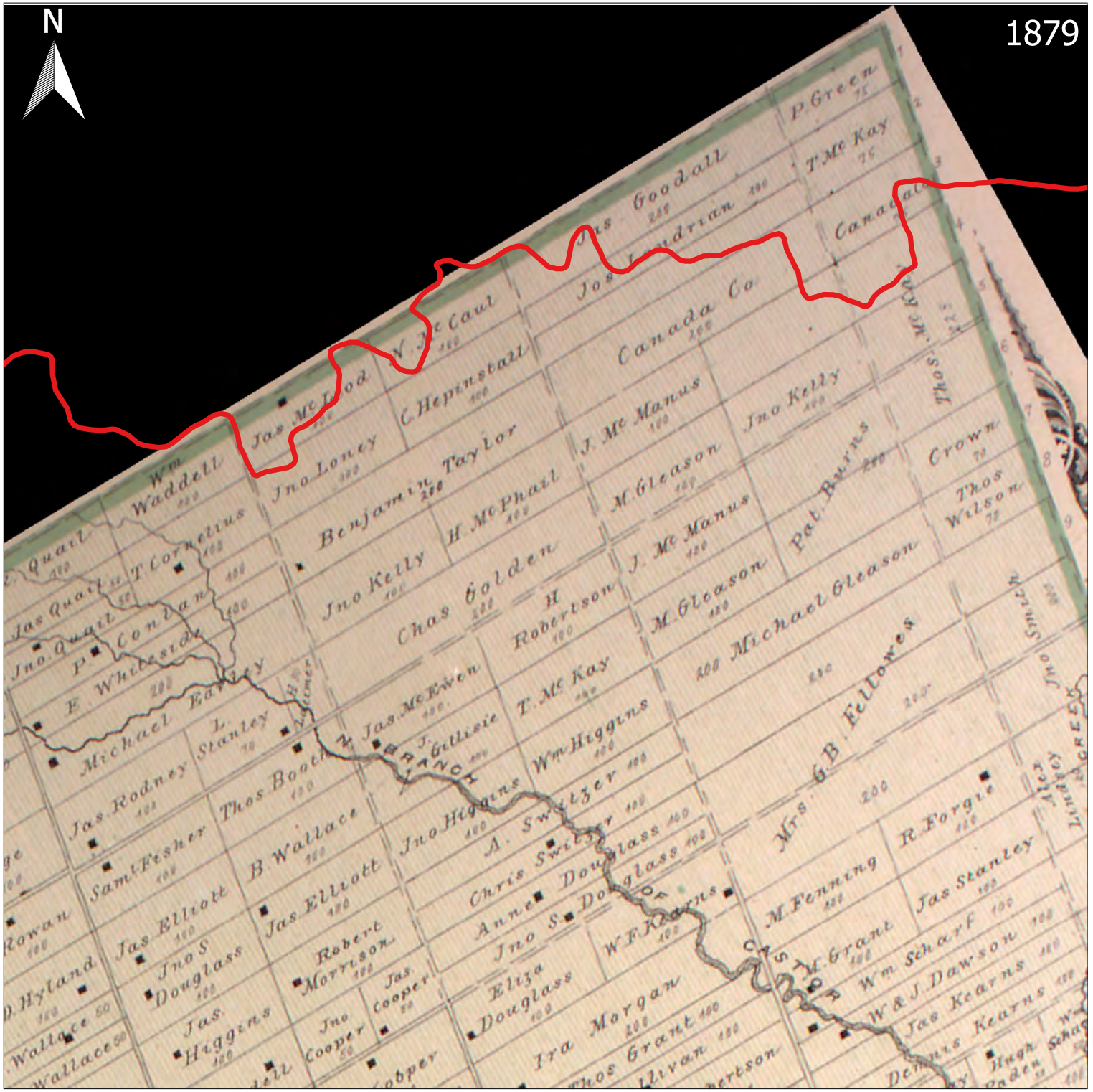
1879 BELDEN MAP

CONSULTANT

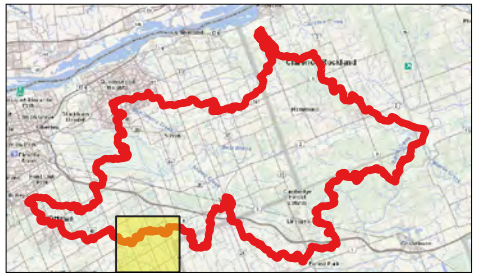
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-A**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1879

400 0 400 800 1,200 m

SCALE 1:50,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

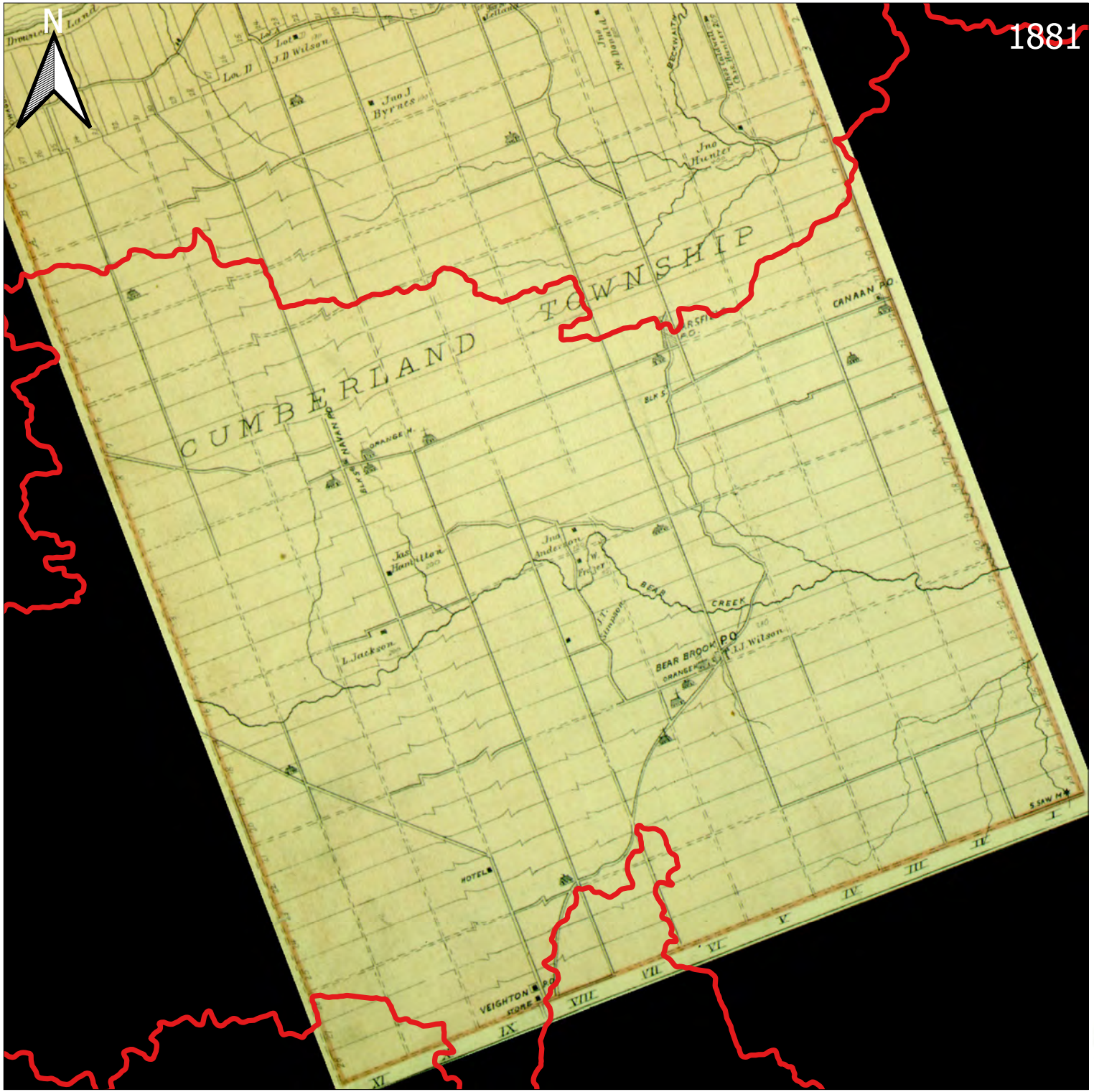
1879 BELDEN MAP

CONSULTANT

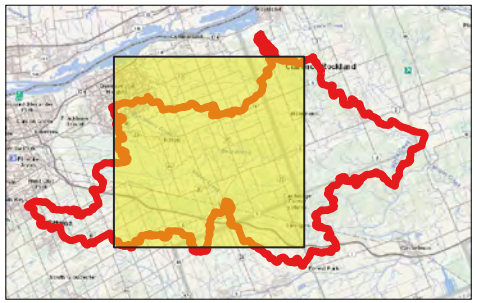
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-B**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1881

1,000 0 1,000 2,000 3,000 m

SCALE 1:150,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

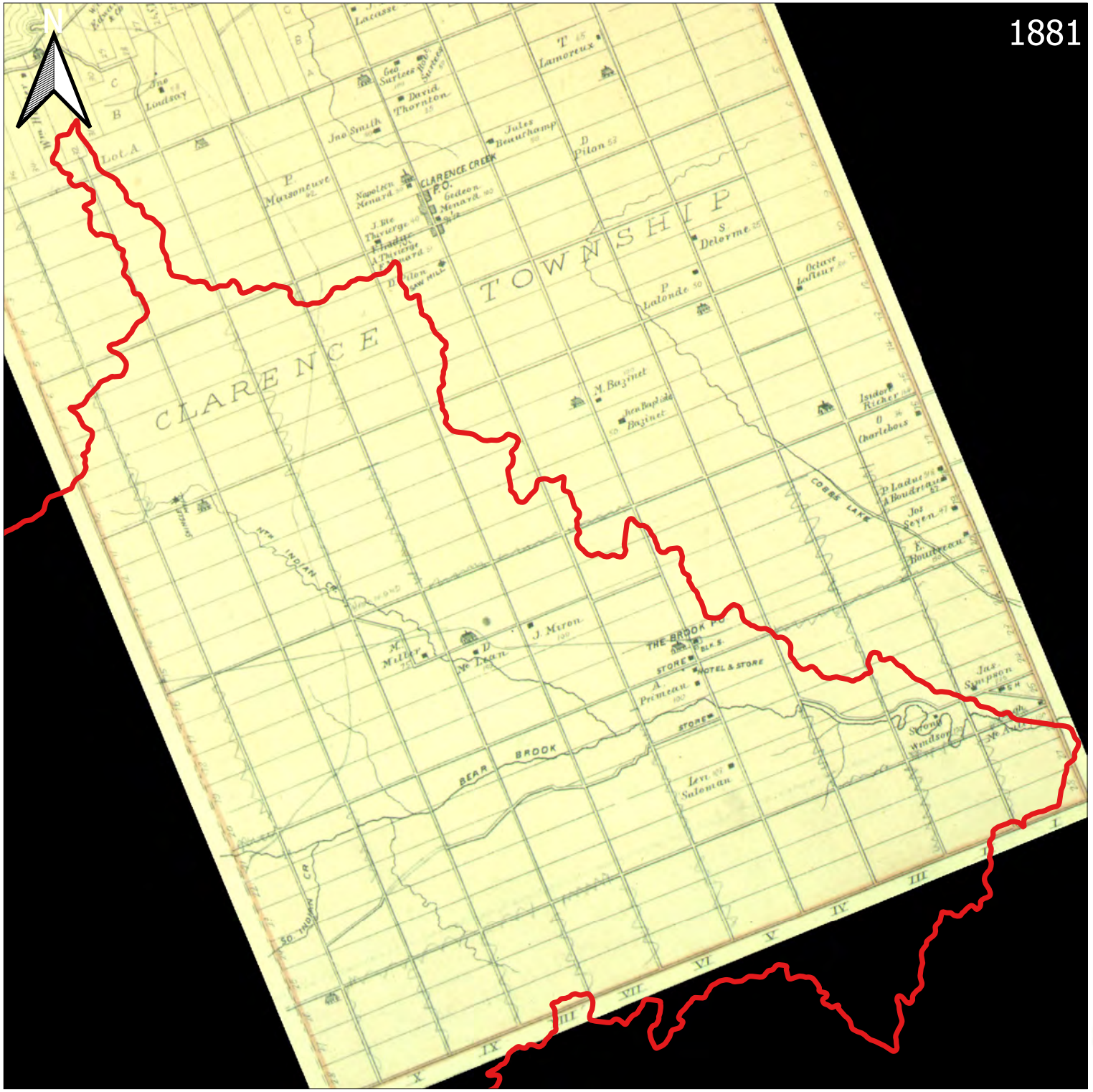
1881 BELDEN MAP

CONSULTANT

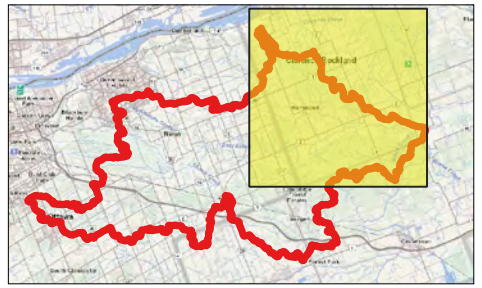
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-C**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1881

1,000 0 1,000 2,000 3,000 m

SCALE 1:140,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

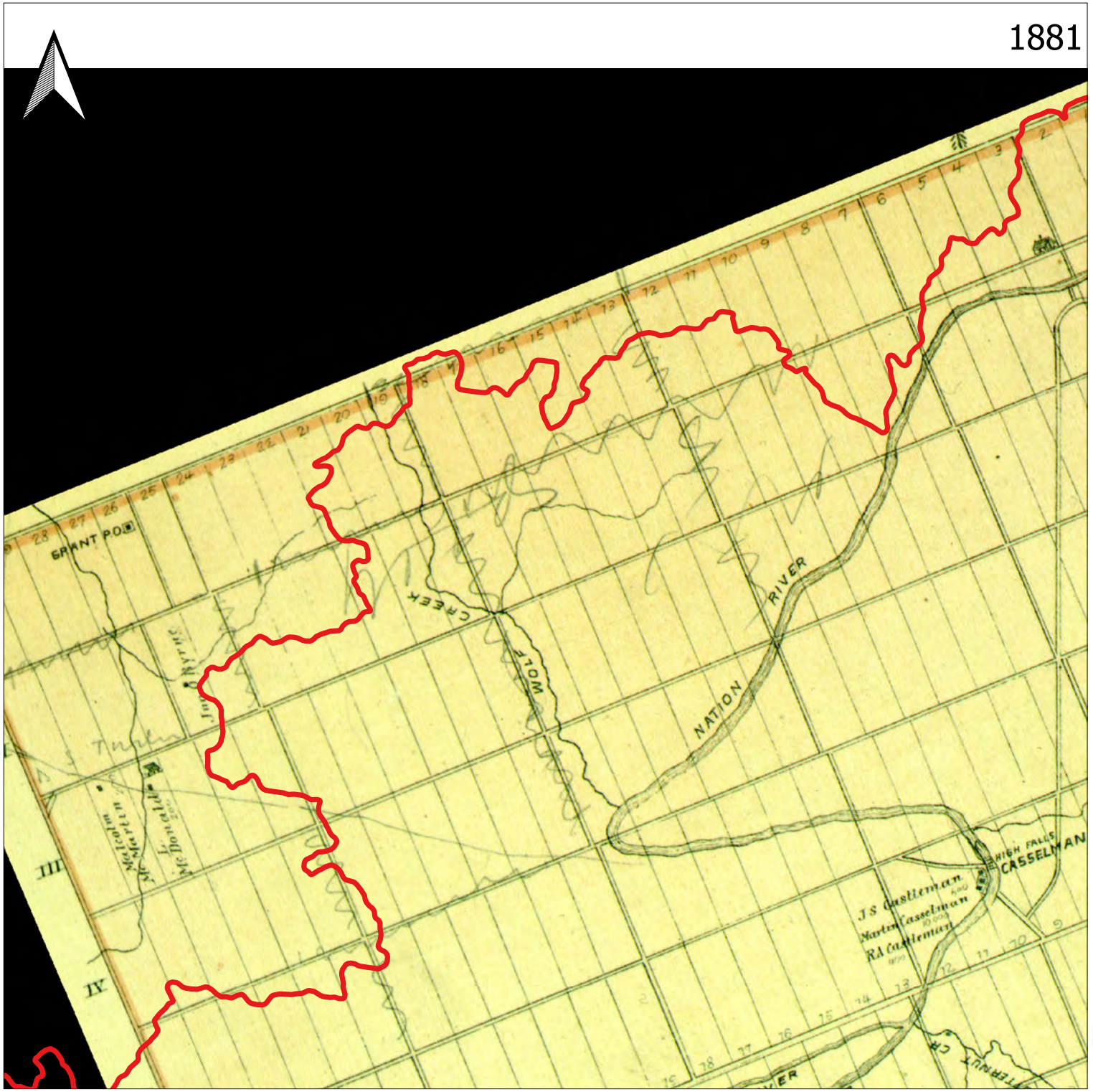
1881 BELDEN MAP

CONSULTANT

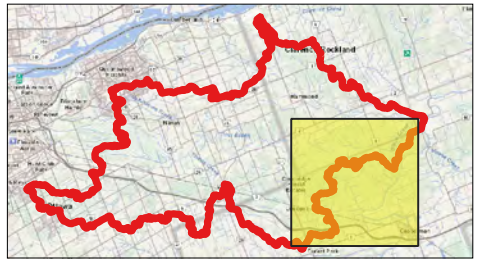
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-D**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1881

1,000 0 1,000 2,000 3,000 m

SCALE 1:100,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

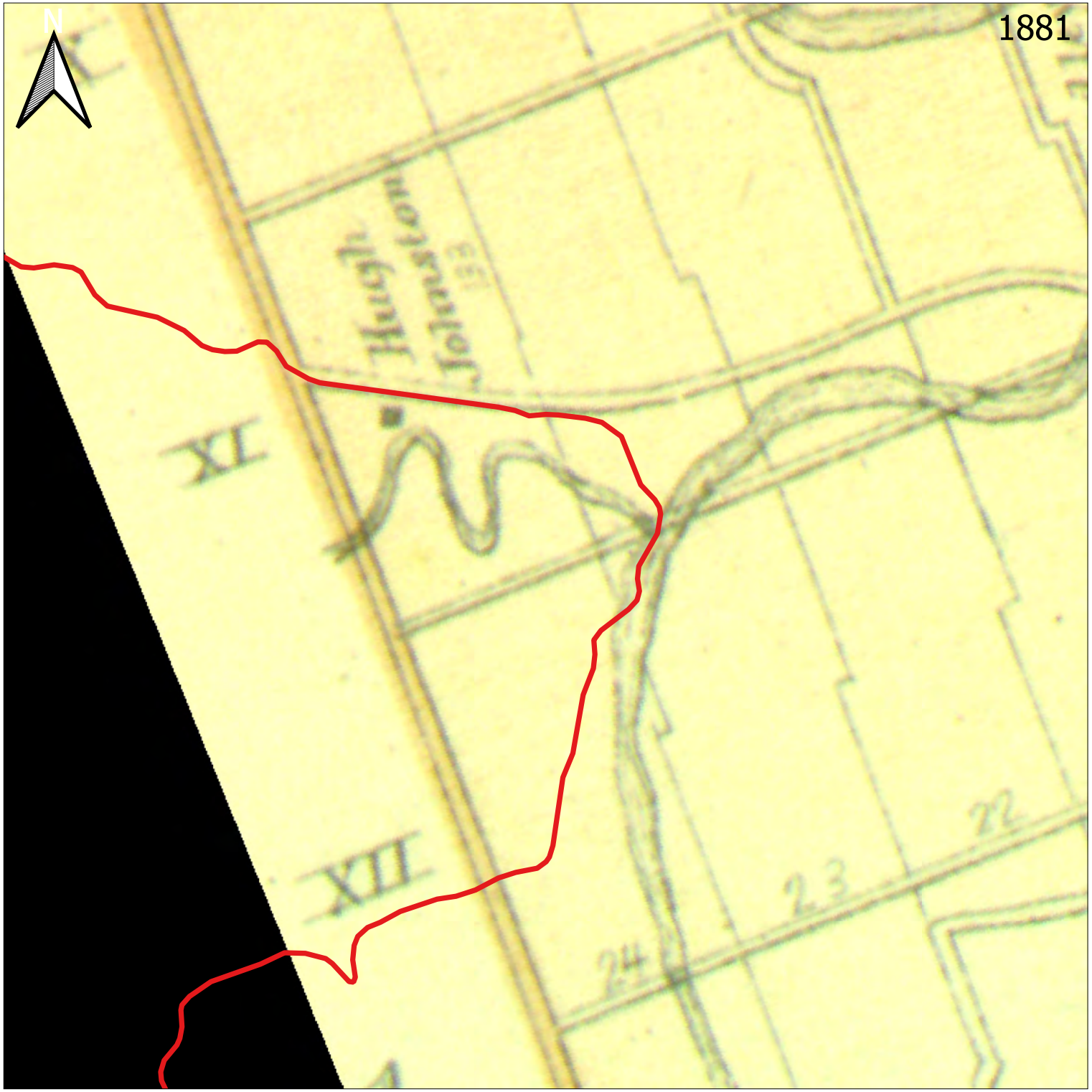
1881 BELDEN MAP

CONSULTANT

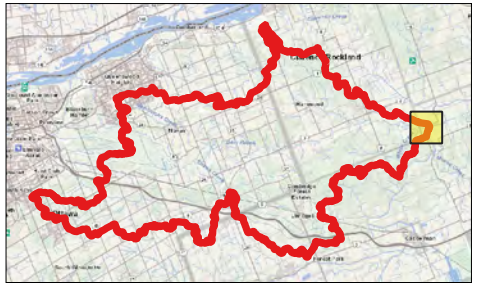
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-E**



KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1881

200 0 200 400 600 m

SCALE 1:25,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

1881 BELDEN MAP

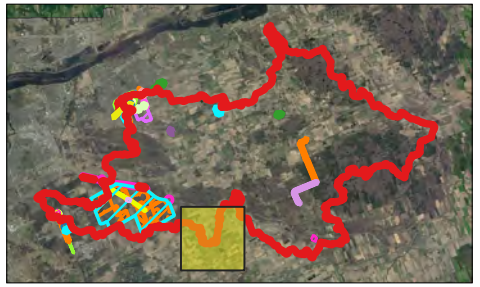
CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-F**

KEY MAP



SCALE 1:120,000

LEGEND

Study Area

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. COPY OF SURVEY PLAN PREPARED BY H. BELDEN & CO., 1881

400 0 400 800 1,200 m

SCALE 1:50,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

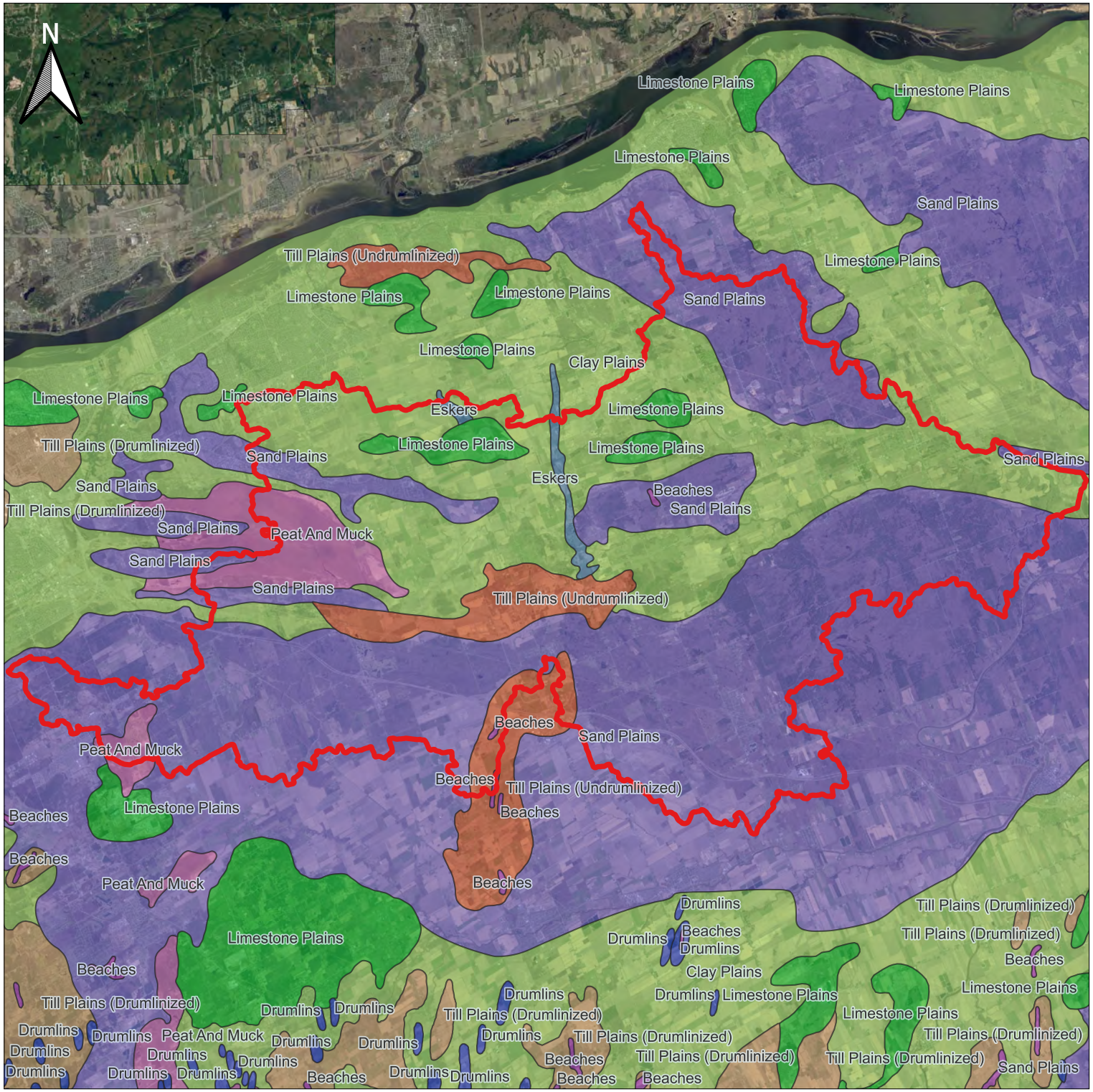
1881 BELDEN MAP

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2023-12-31
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**4-G**



LEGEND

- Study Area

Physiographic Regions

- Beaches
- Clay Plains
- Drumlins
- Eskers
- Limestone Plains
- Peat And Muck
- Sand Plains
- Till Plains (Drumlinized)
- Till Plains (Undrumlinized)

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. CHAPMAN, L.J. AND PUTNAM, D.F. 2007. PHYSIOGRAPHY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 2008

2,500 0 2,500 5,000 7,500 m

SCALE 1:315,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

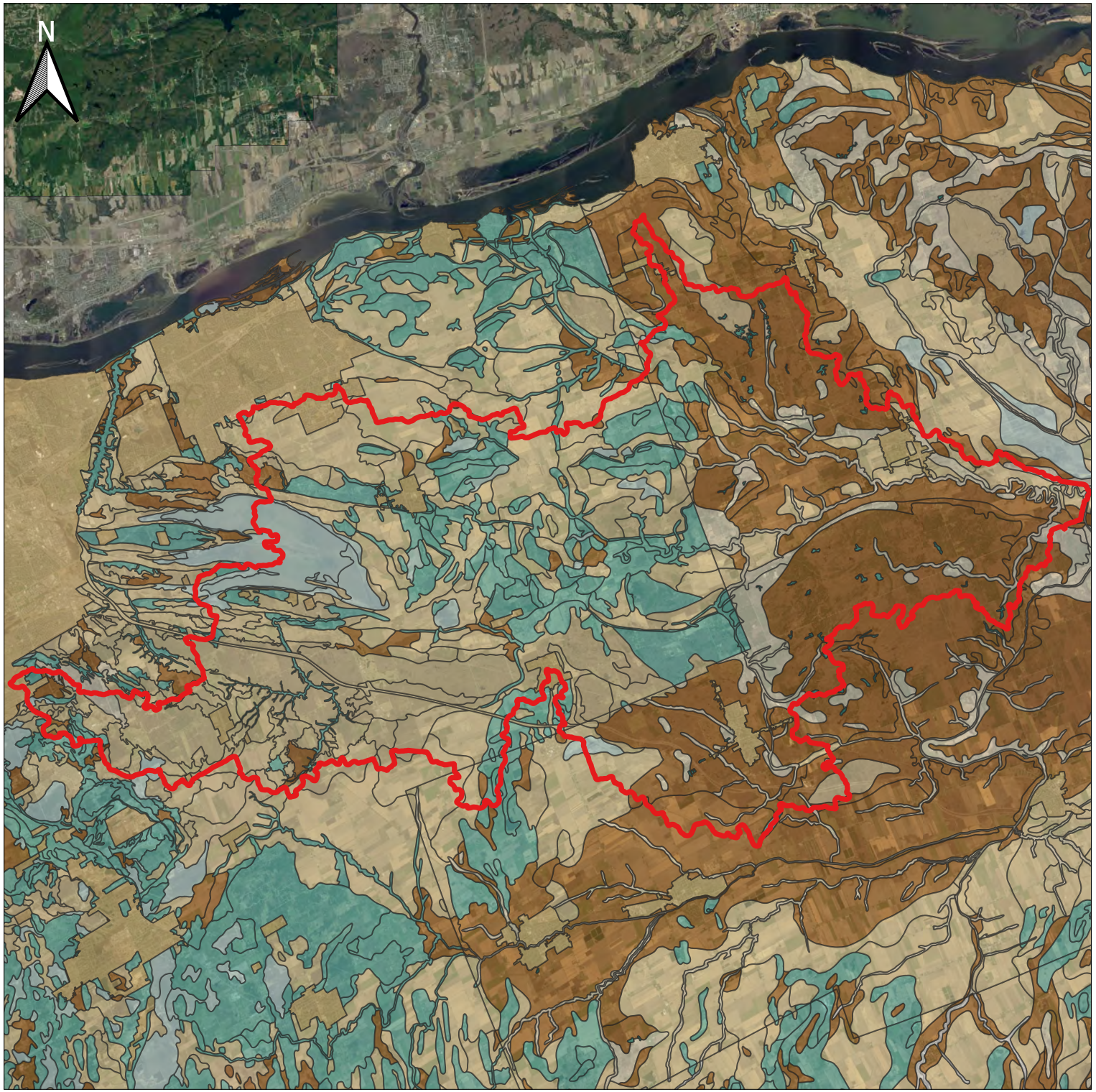
PHYSIOGRAPHY

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	5



LEGEND

- Study Area

Soil Drainage

- Imperfect Drainage
- Imperfect to Poor Drainage
- Poor Drainage
- Poor to Good Drainage
- Good Drainage
- Muck and Peat
- Good to Excellent Drainage
- Excellent Drainage

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83,
COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. SOIL SURVEY COMPLEX, ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS, 2019-11-06

2.5 0 2.5 5 7.5 km

SCALE 1:315,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

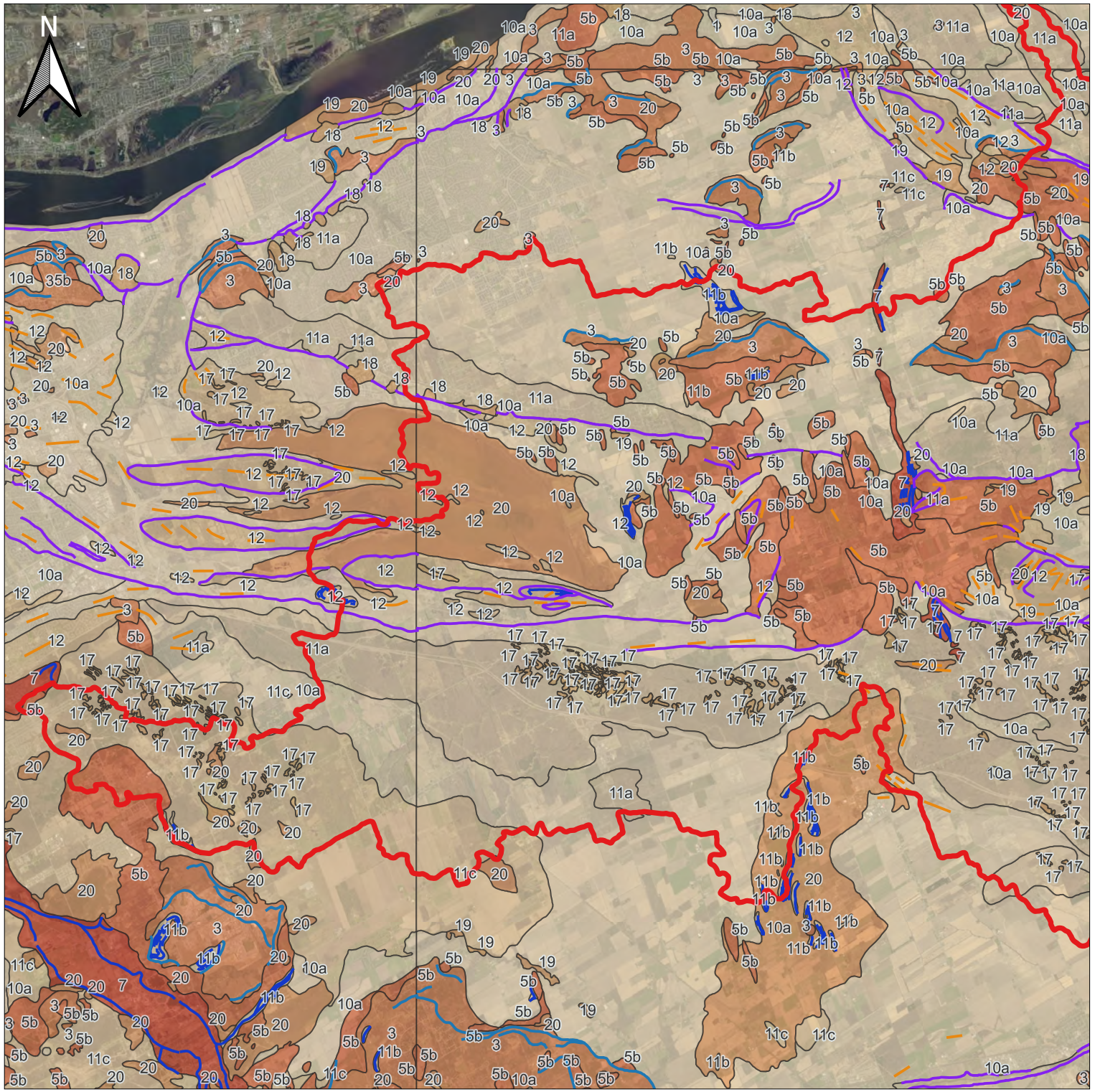
SOIL DRAINAGE

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	6



LEGEND

Landscape Feature	Surficial Geology	
Beach Ridge	1	Precambrian Bedrock
Escarpment	10a	Glaciomarine Deposits: clay and silt
Fluvial Channel	11a	Glaciomarine Deposits: medium to fine grained sand
Fluvial Terrace	11b	Glaciomarine Deposits: gravel, sand and boulders
	11c	Glaciomarine Deposits: fine to medium grained sand
	12	Fluvial Deposits: medium grained sand and silt
	17	Sand Dunes
	18	Landslide Area
	19	Alluvial Deposits: silty sand, sand and clay
	20	Organic Deposits: muck and peat in bogs
	3	Paleozoic Bedrock
	5b	Glacial Till: sandy and silty compact diamicton
	7	Glaciofluvial deposits: gravel and sand

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 128-REV

1,500 0 1,500 3,000 4,500 m

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

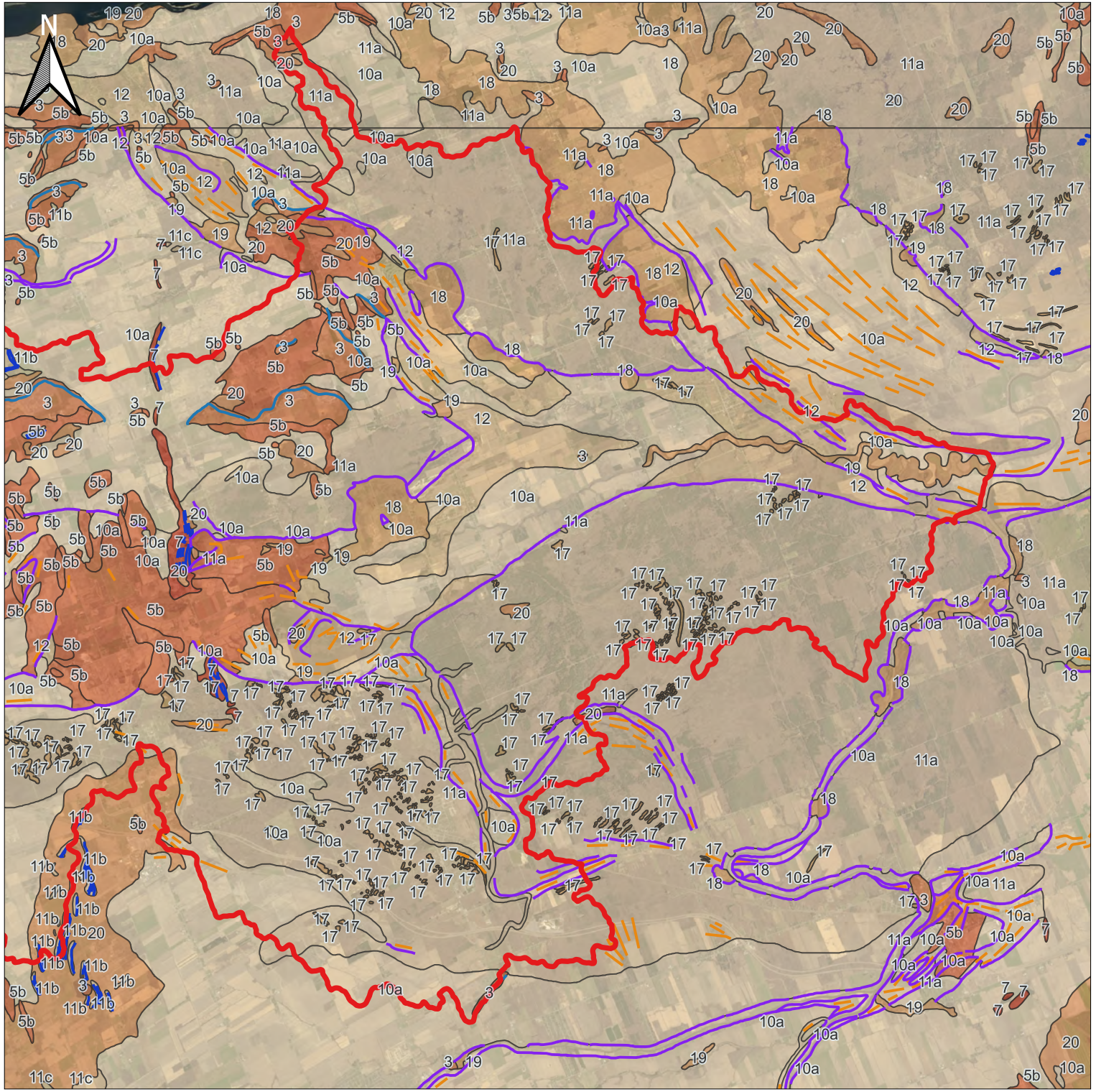
SURFICIAL GEOLOGY

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	7-A



LEGEND

Landscape Feature	Surficial Geology	
Beach Ridge	10a	Glaciomarine Deposits: clay and silt
Escarpment	11a	Glaciomarine Deposits: medium to fine grained sand
Fluvial Channel	11b	Glaciomarine Deposits: gravel, sand and boulders
Fluvial Terrace	11c	Glaciomarine Deposits: fine to medium grained sand
	12	Fluvial Deposits: medium grained sand and silt
	17	Sand Dunes
	18	Landslide Area
	19	Alluvial Deposits: silty sand, sand and clay
	20	Organic Deposits: muck and peat in bogs
	3	Paleozoic Bedrock
	5b	Glacial Till: sandy and silty compact diamicton
	7	Glaciofluvial deposits: gravel and sand

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 128-REV

1,500 0 1,500 3,000 4,500 m

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

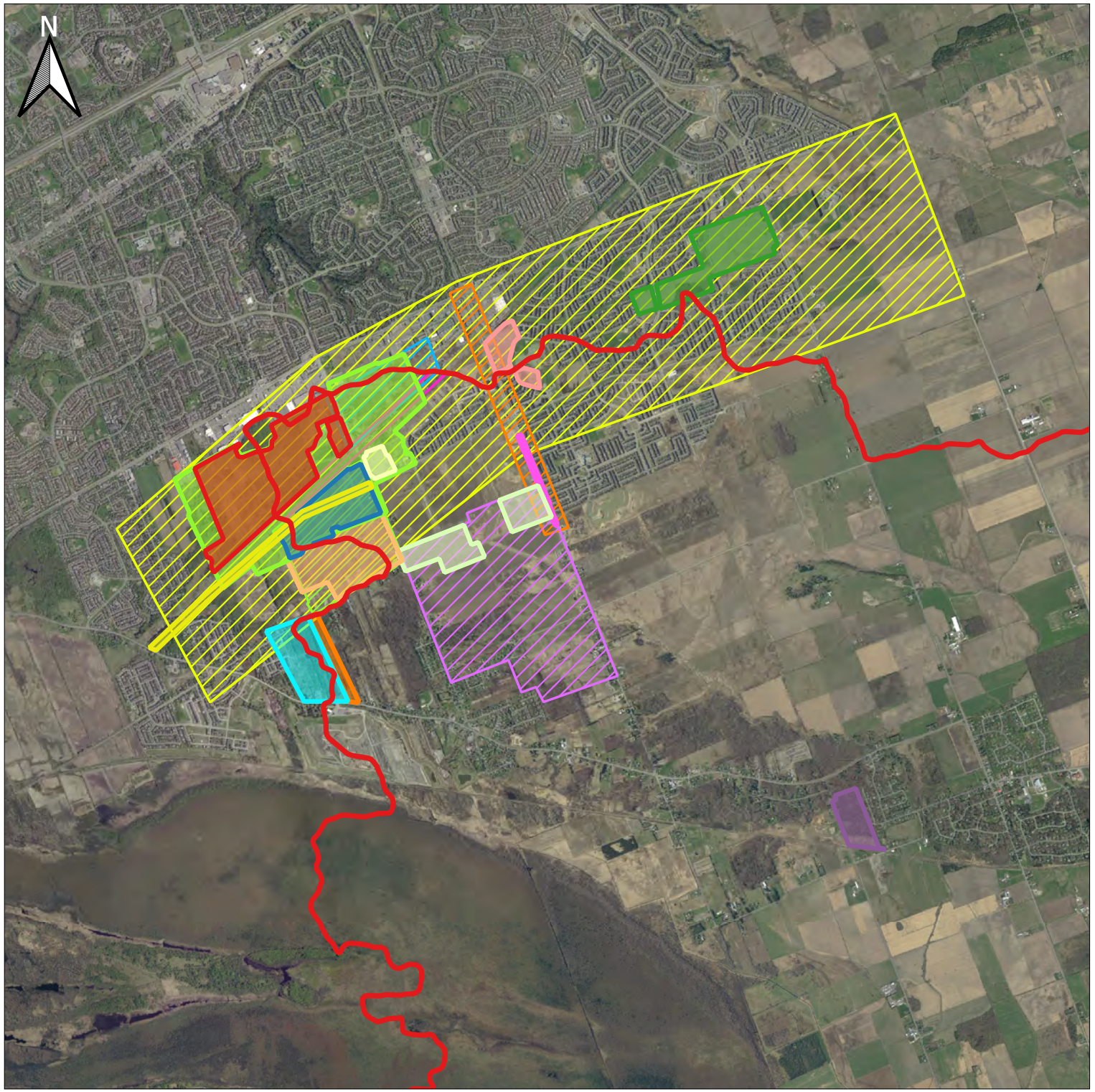
SURFICIAL GEOLOGY

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	7-B



LEGEND

Study Area

Previous Assessments

- P003-337-2012; No Further Archaeology
- P003-352-2012; No Further Archaeology
- P350-033-2013; No Further Archaeology
- P378-0038-2020; No Further Archaeology
- P378-0037-2020; No Further Archaeology
- P094-0249-2017; No Further Archaeology
- P366-0040-2013; No Further Archaeology
- P415-0015-2014; No Further Archaeology
- P385-0039-2018; No Further Archaeology
- P378-0030-2018; No Further Archaeology
- P369-0048-2016; No Further Archaeology
- P369-012-2013; No Further Archaeology
- P270-003-2015; No Further Archaeology
- P376-0016-2017; Further Archaeology
- P366-041-2013; Further Archaeology
- P366-0042-2013; Further Archaeology
- P051-094-2006; Further Archaeology
- 99-027; Further Archaeology
- P051-044; Further Archaeology

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 128-REV

500 0 500 1,000 1,500 m

SCALE 1:70,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

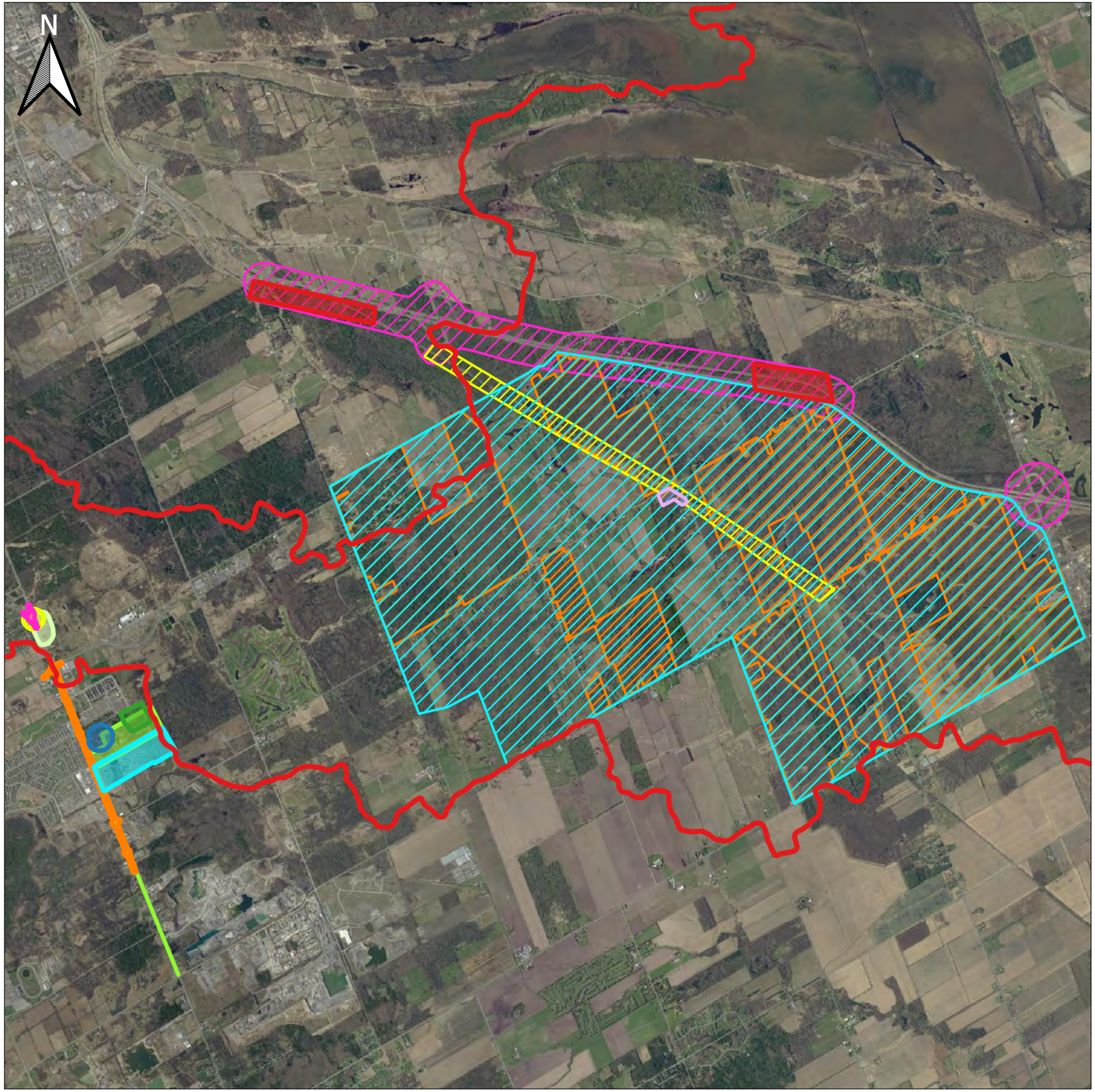
PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	8-A



LEGEND

Study Area

Previous Assessments

- P1074-0079-2023; No Further Archaeology
- P366-0048-2015; No Further Archaeology
- P003-0389-2013; No Further Archaeology
- P003-186-2008; No Further Archaeology
- P378-0025-2017 No Further Archaeology
- P350-0038-2015; No Further Archaeology
- P311-080-2011; No Further Archaeology
- P031-033-2011; No Further Archaeology
- P031-038-2011; No Further Archaeology
- P031-049-2012; No Further Archaeology
- P1107-0052-2022; Further Archaeology
- P1074-0023-2022; Further Archaeology
- P415-0160-2018; Further Archaeology
- P311-090-2012; Further Archaeology
- P311-049-2011; Further Archaeology

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 128-REV

800 0 800 1,600 2,400 m

SCALE 1:95,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

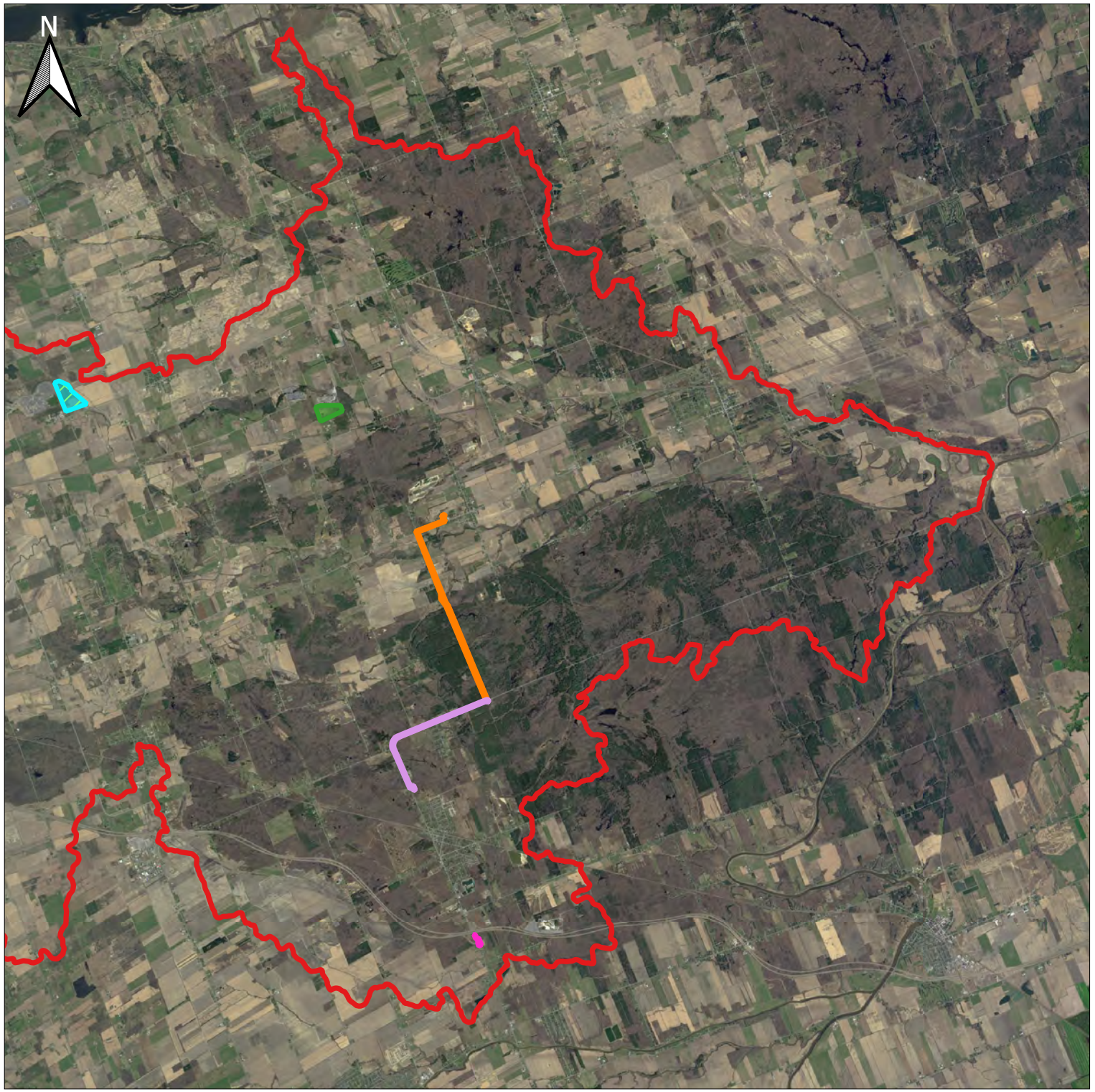
PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**8-B**



LEGEND

- Study Area

Previous Assessments

- P1107-0040-2021; No Further Archaeology
- P415-0114-2016; No Further Archaeology
- P415-0157-2017; No Further Archaeology
- P1107-0042-2021; No Further Archaeology
- P336-0051-2014; No Further Archaeology
- P311-089-2011; Further Archaeology

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 17, VERTICAL DATUM: CGVD28

2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE-DATA 128-REV

1,500 0 1,500 3,000 4,500 m

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

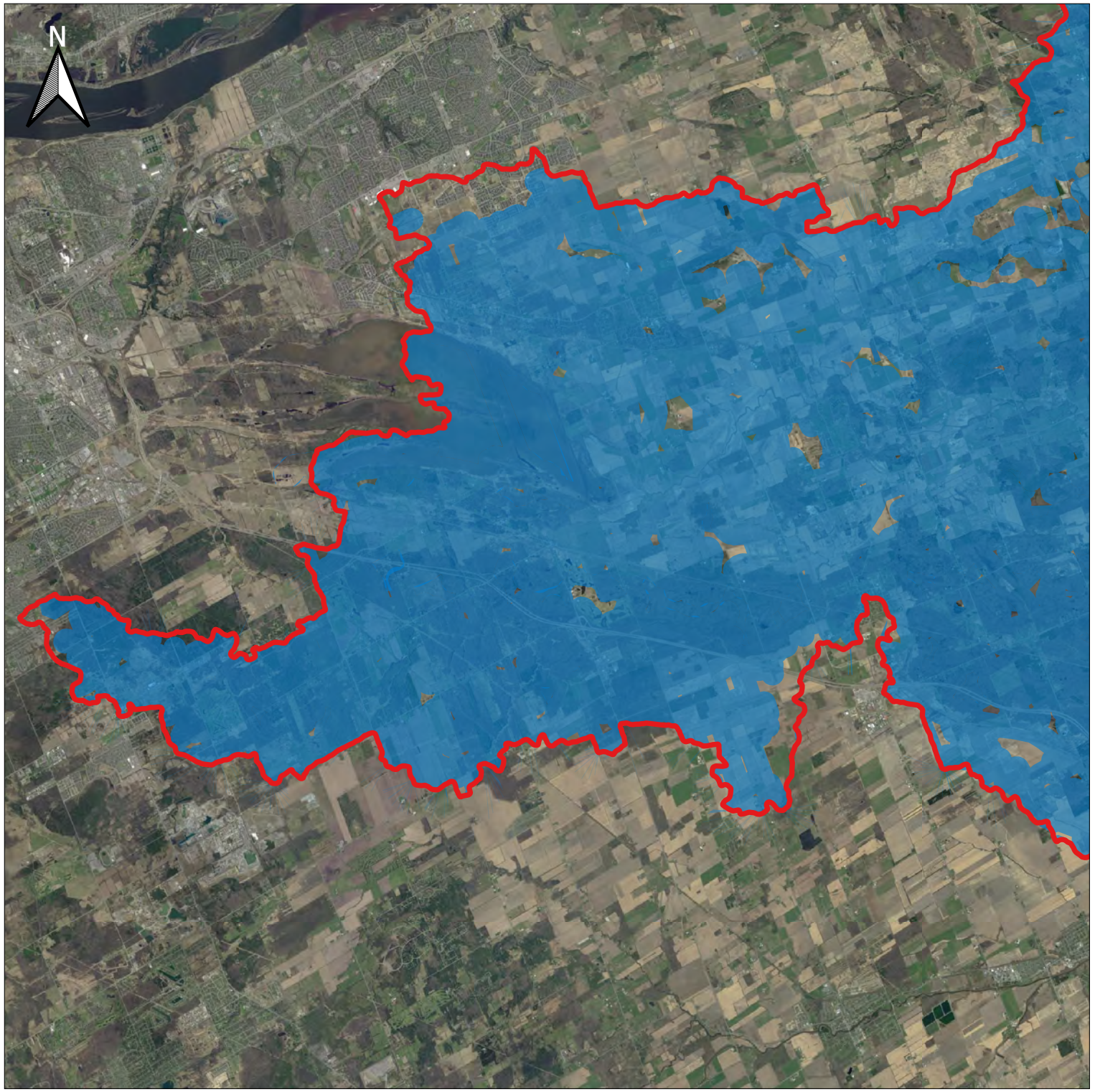
PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

CONSULTANT

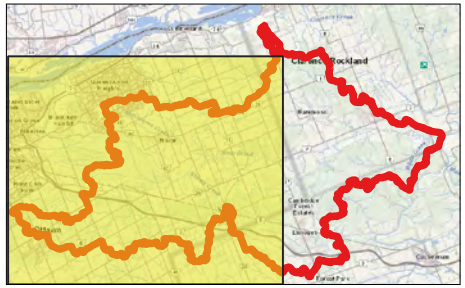
TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-06
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	8-C



KEY MAP



SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Retains Potential Derived From Water Sources

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

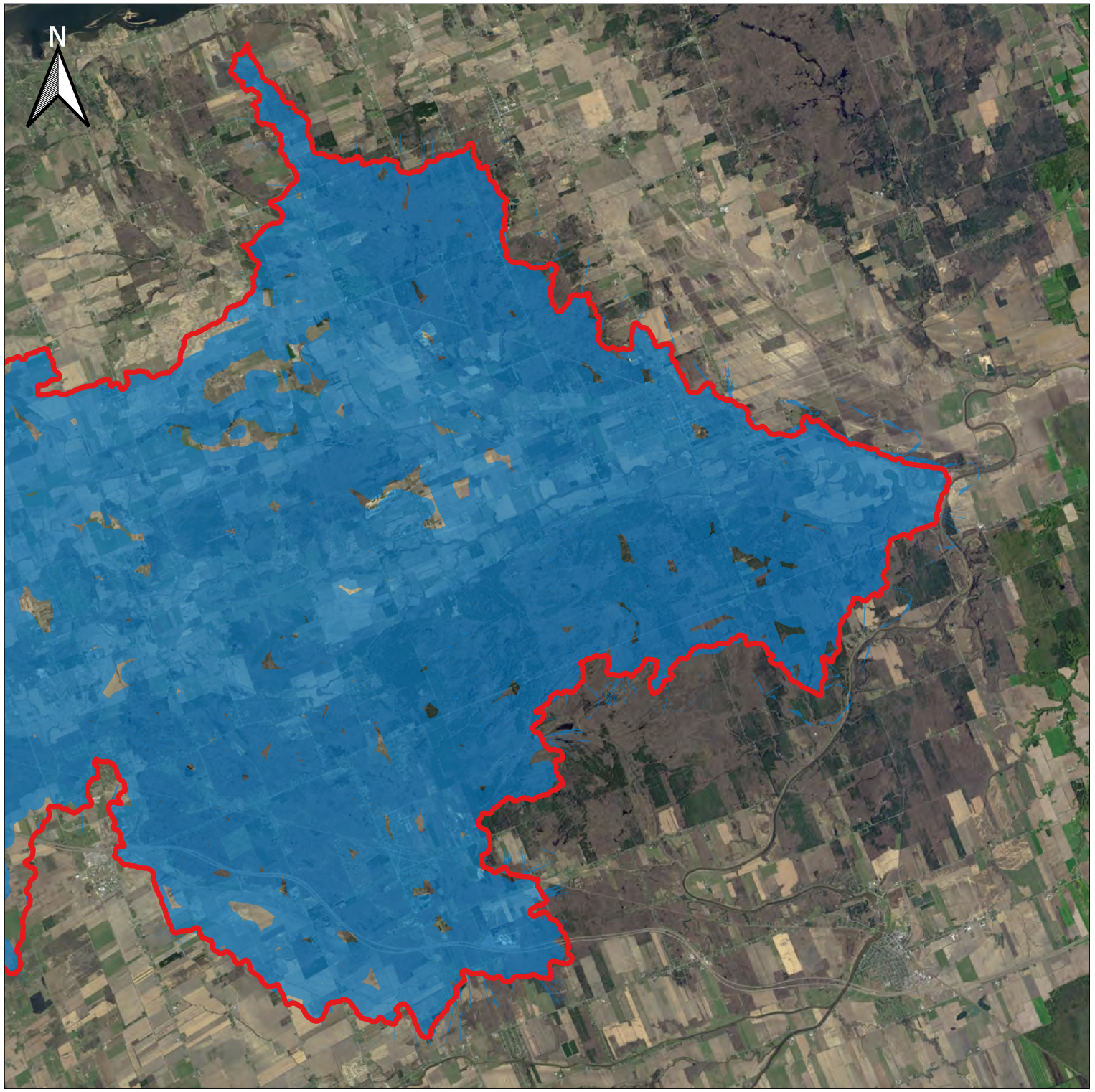
ARCHAEOLOGICAL POTENTIAL DERIVED FROM WATER SOURCES

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**9-A**



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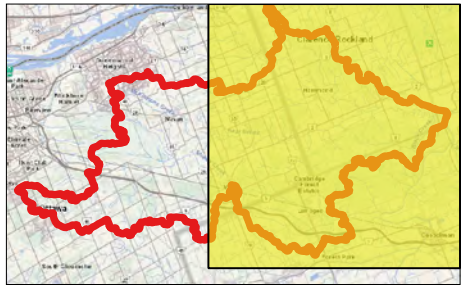


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Retains Potential Derived From Water Sources

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

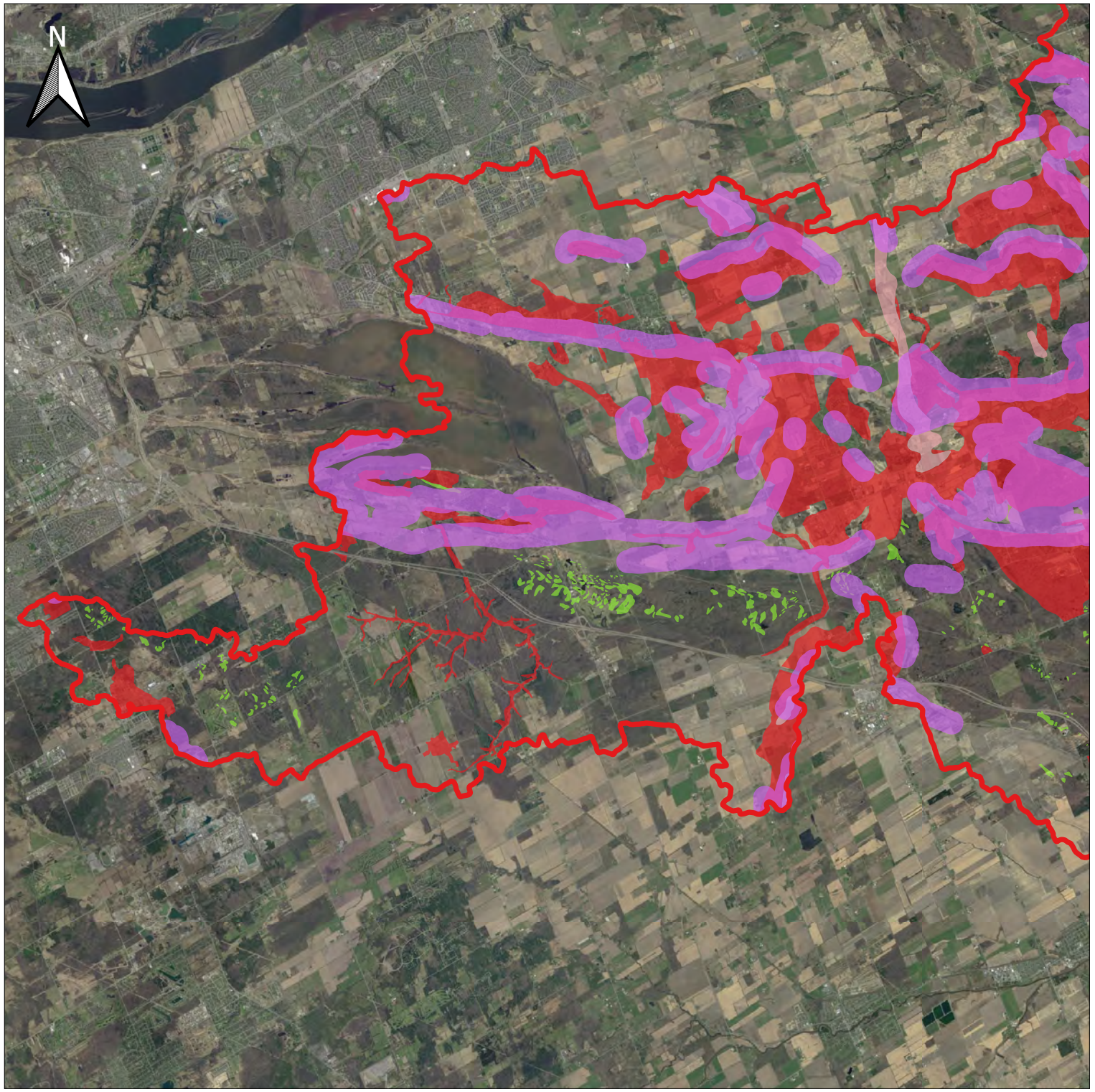
ARCHAEOLOGICAL POTENTIAL DERIVED FROM WATER SOURCES

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**9-B**



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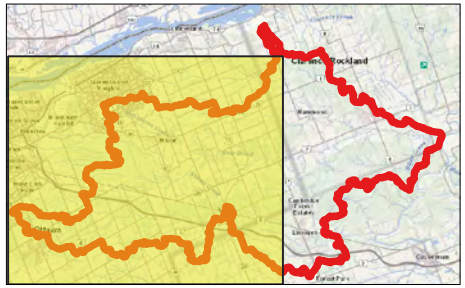


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Retains Potential; 300m buffer from beach rides and fluvial terraces
- Retains Potential; sand dunes
- Retain Potential; well drained sandy soil
- Retains Potential; beaches and eskers

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

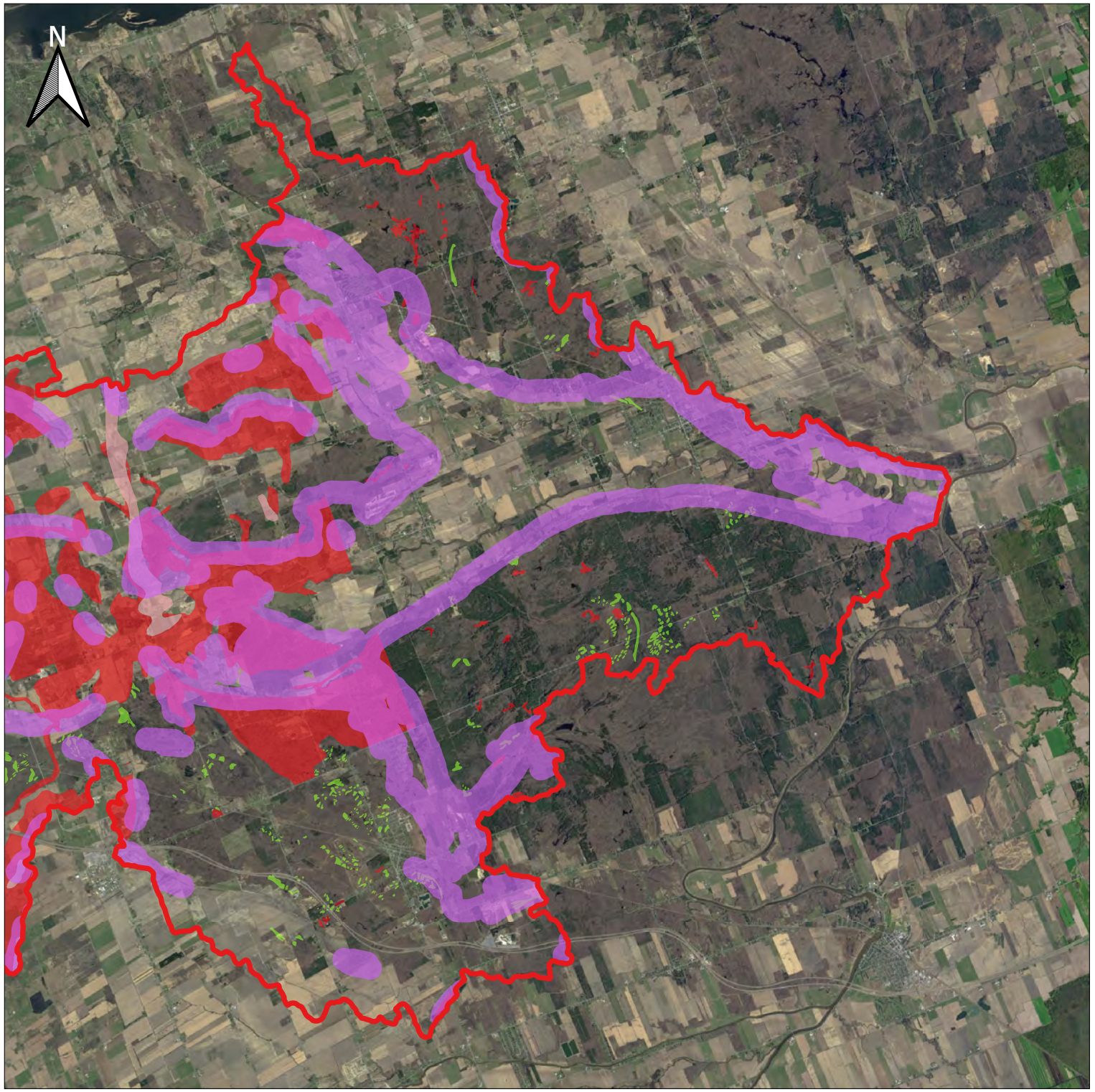
ARCHAEOLOGICAL POTENTIAL DERIVED FROM DISTINCTIVE LANDFORMS AND POCKETS OF WELL DRAINED SANDY SOIL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**10-A**



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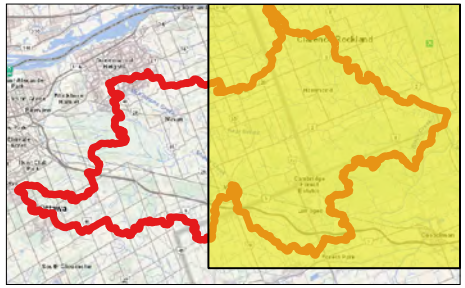


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Retains Potential; 300m buffer from beach ridges and fluvial terraces
- Retains Potential; sand dunes
- Retains Potential; well drained sandy soils
- Retains Potential; beaches and eskers

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

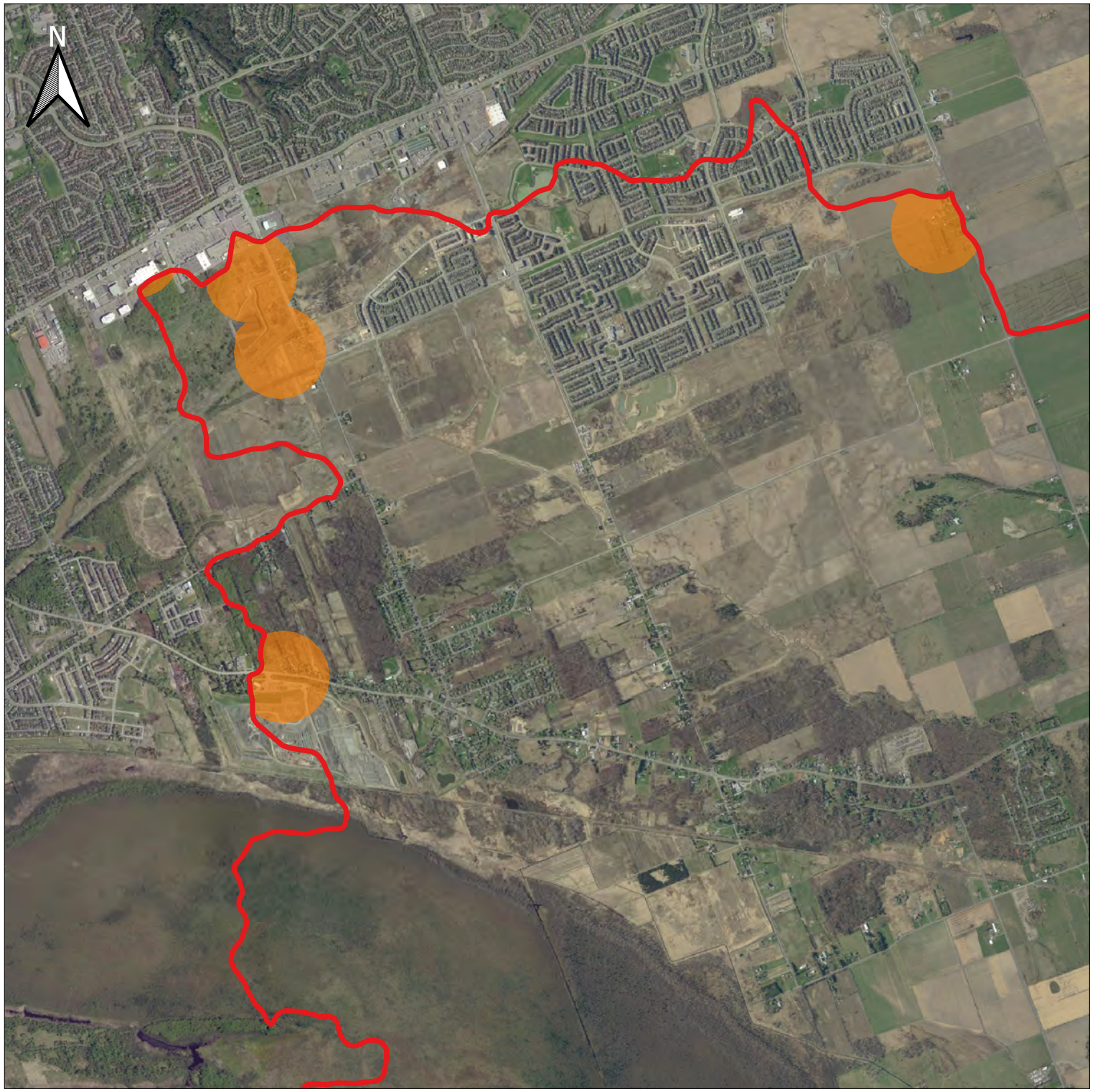
ARCHAEOLOGICAL POTENTIAL DERIVED FROM DISTINCTIVE LANDFORMS AND POCKETS OF WELL DRAINED SANDY SOIL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**10-B**



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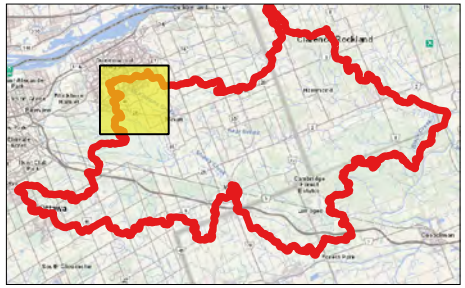


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Retains Potential; 300m buffer from registered archaeological sites

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 m

SCALE 1:110,0000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

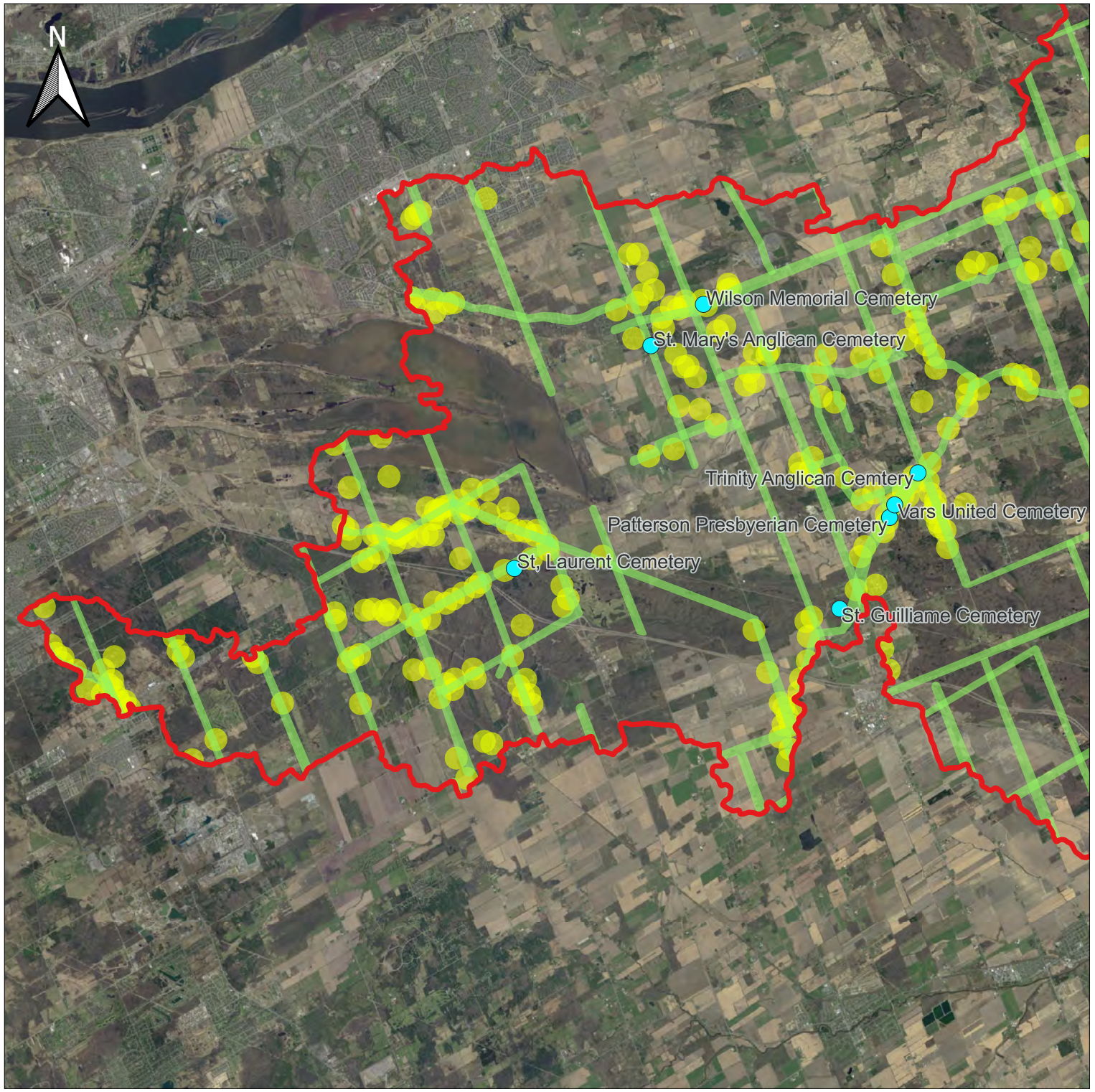
ARCHAEOLOGICAL POTENTIAL DERIVED FROM REGISTERED ARCHAEOLOGICAL SITES

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	11



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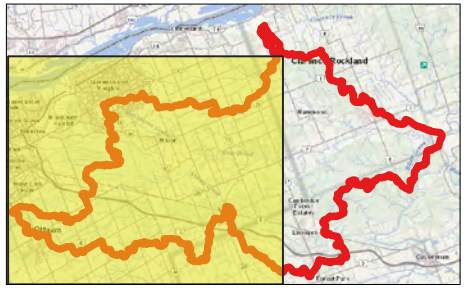


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Registered Cemetery

Retains Potential; 100m buffer generated from historic transportation routes

Retains Potential; 300m buffer generated from historic structures

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83. COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

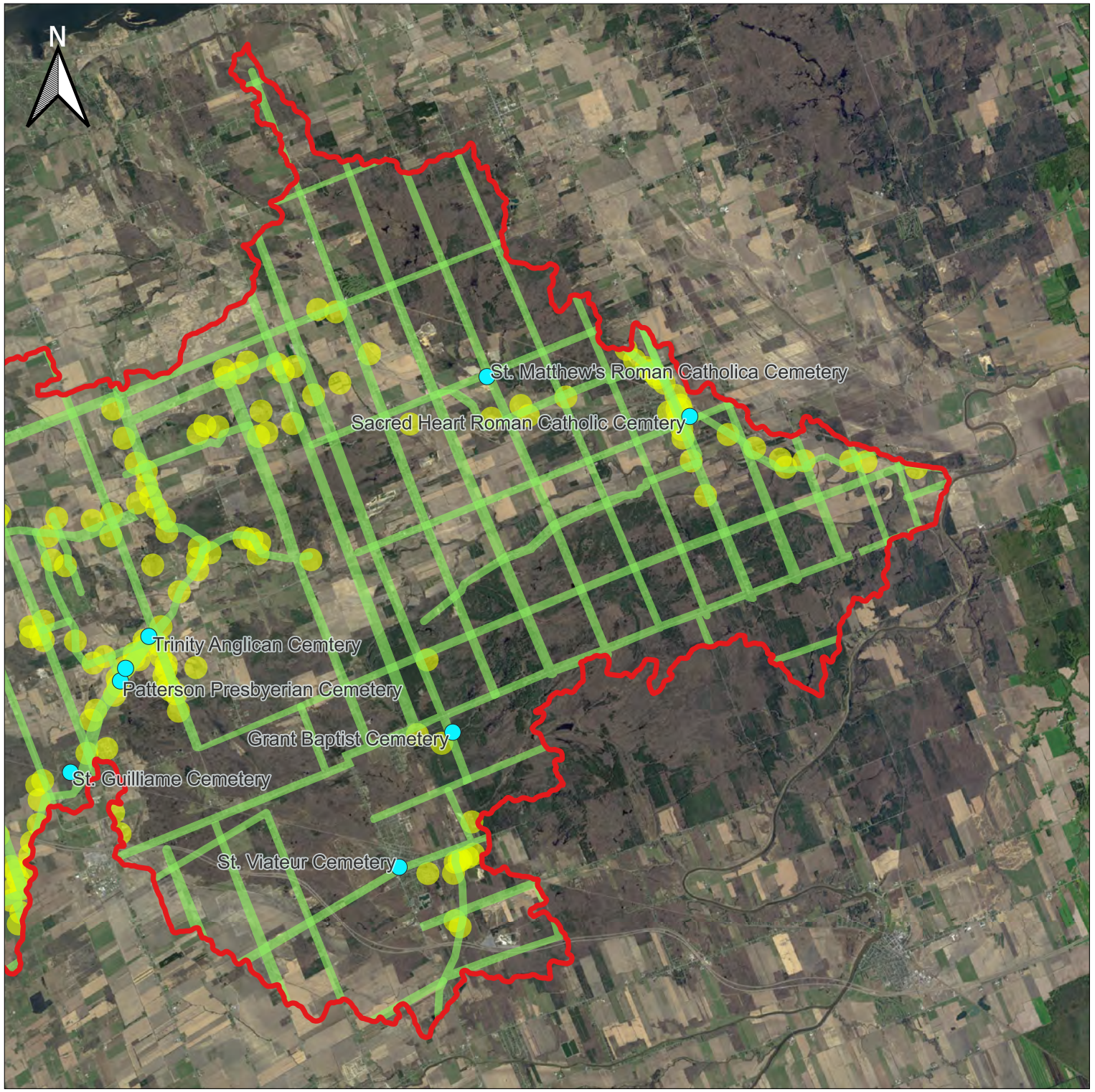
ARCHAEOLOGICAL POTENTIAL DERIVED FROM HISTORICAL STRUCTURES, EARLY HISTORICAL TRANSPORTATION ROUTES, AND CEMETERIES

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**12-A**



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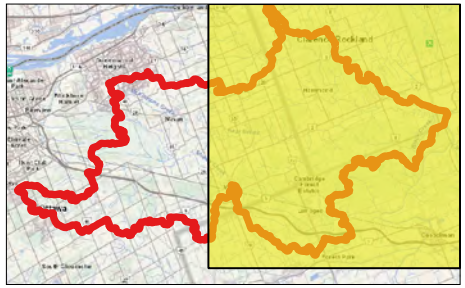


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Registered Cemetery

Retains Potential; 100m buffer generated from historic transportation routes

Retains Potential; 300m buffer generated from historic structures

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

2.5 0 2.5 5 km

SCALE 1:200,000

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

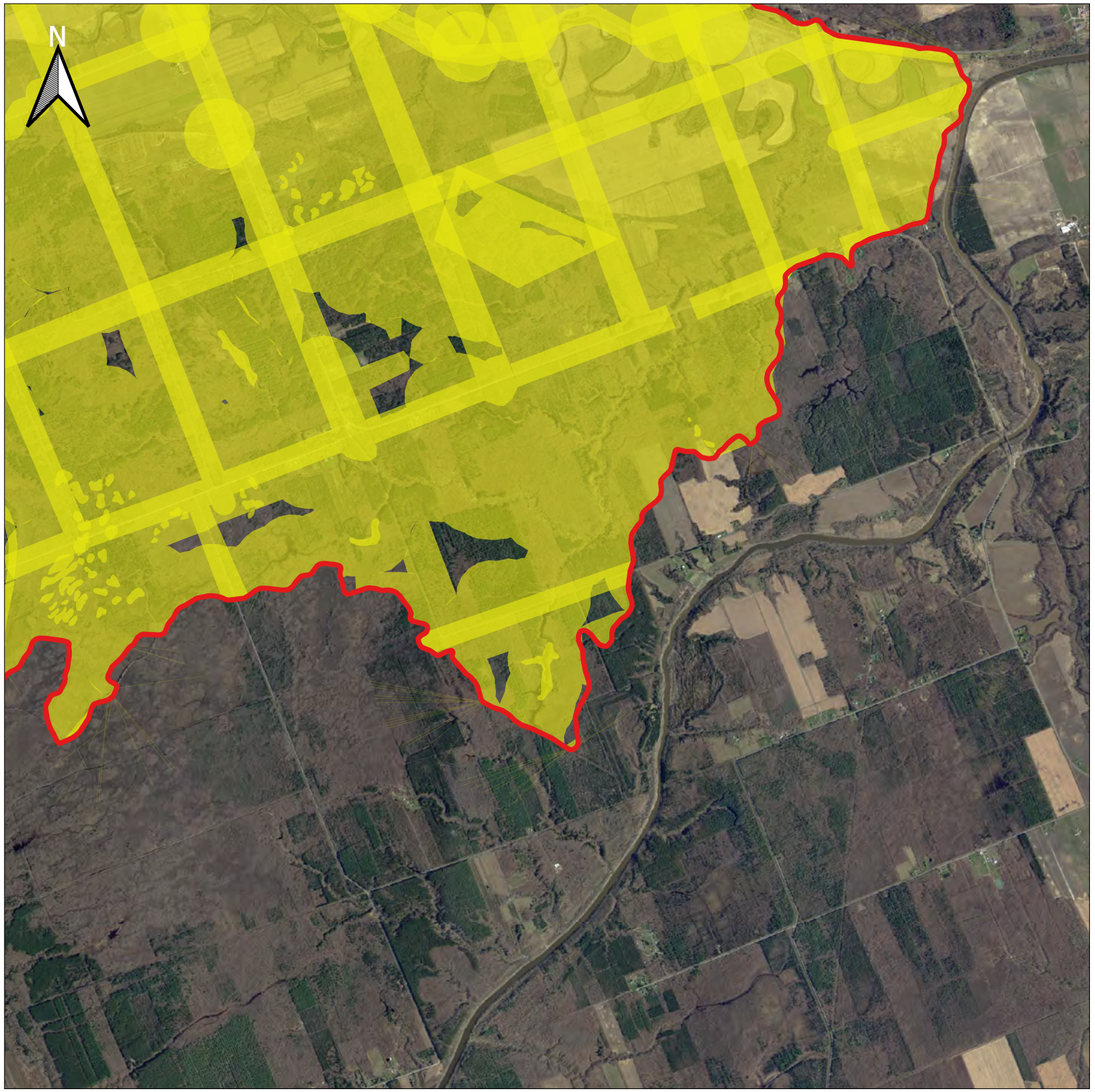
ARCHAEOLOGICAL POTENTIAL DERIVED FROM HISTORICAL STRUCTURES, EARLY HISTORICAL TRANSPORTATION ROUTES, AND CEMETERIES

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**12-B**



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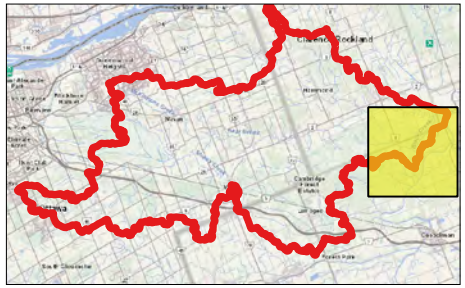


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assesssment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

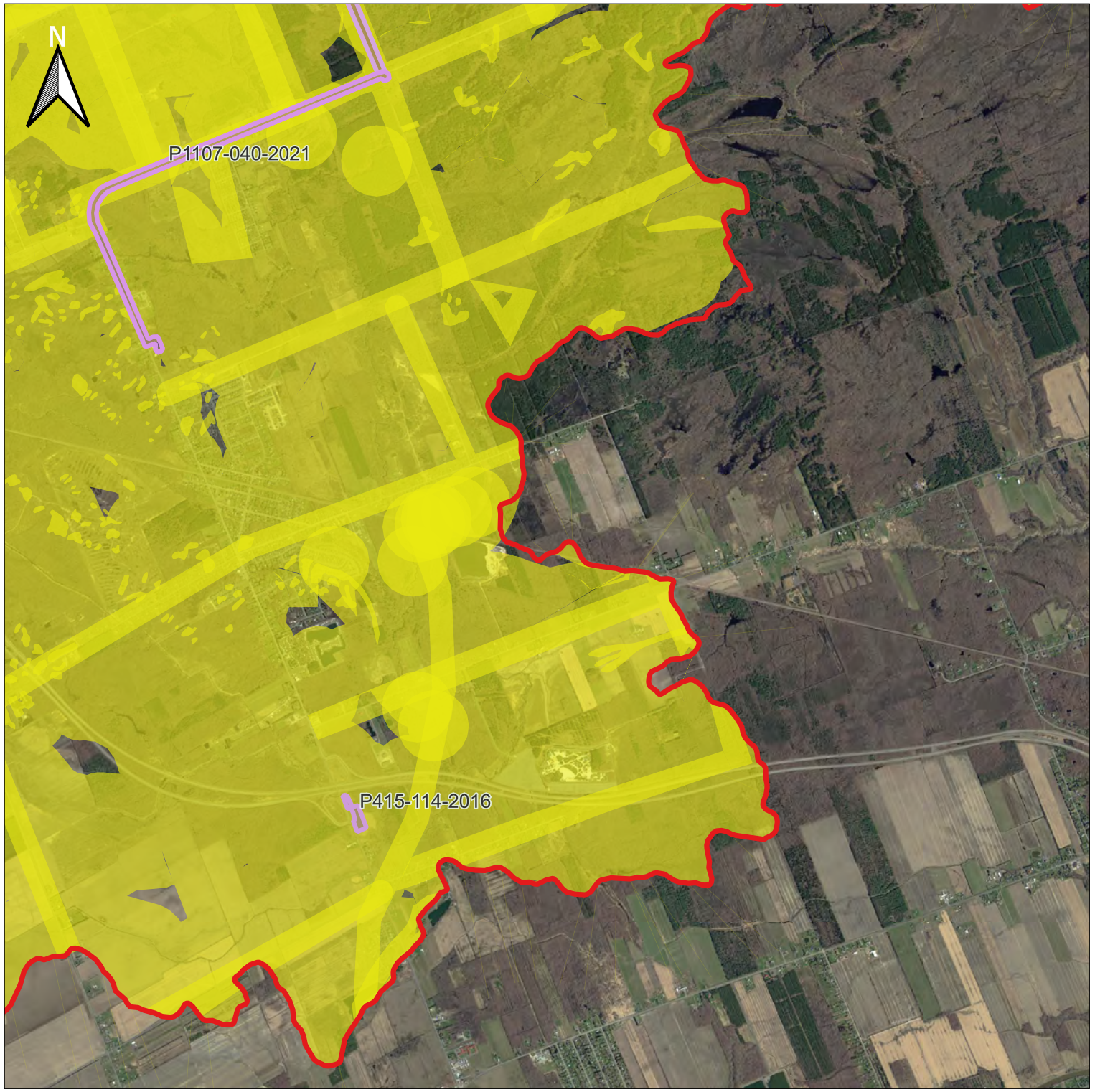
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-A**



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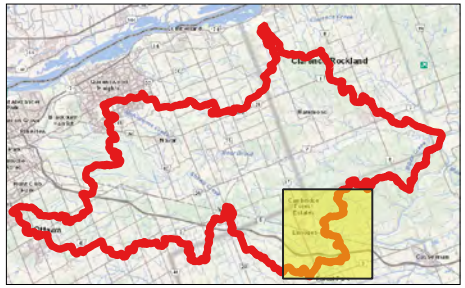


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assessment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

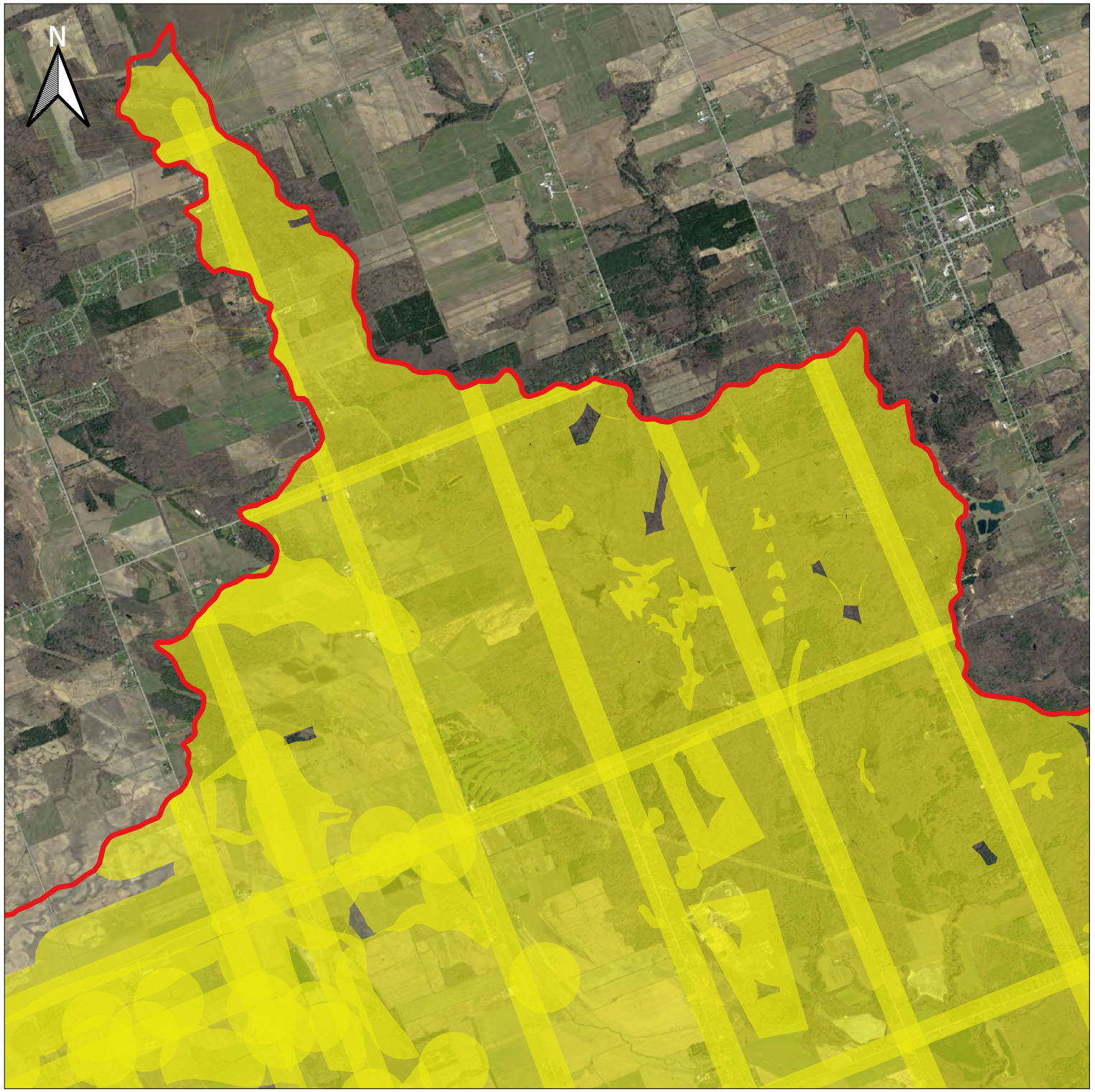
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-B**



KEY MAP

SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assessment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

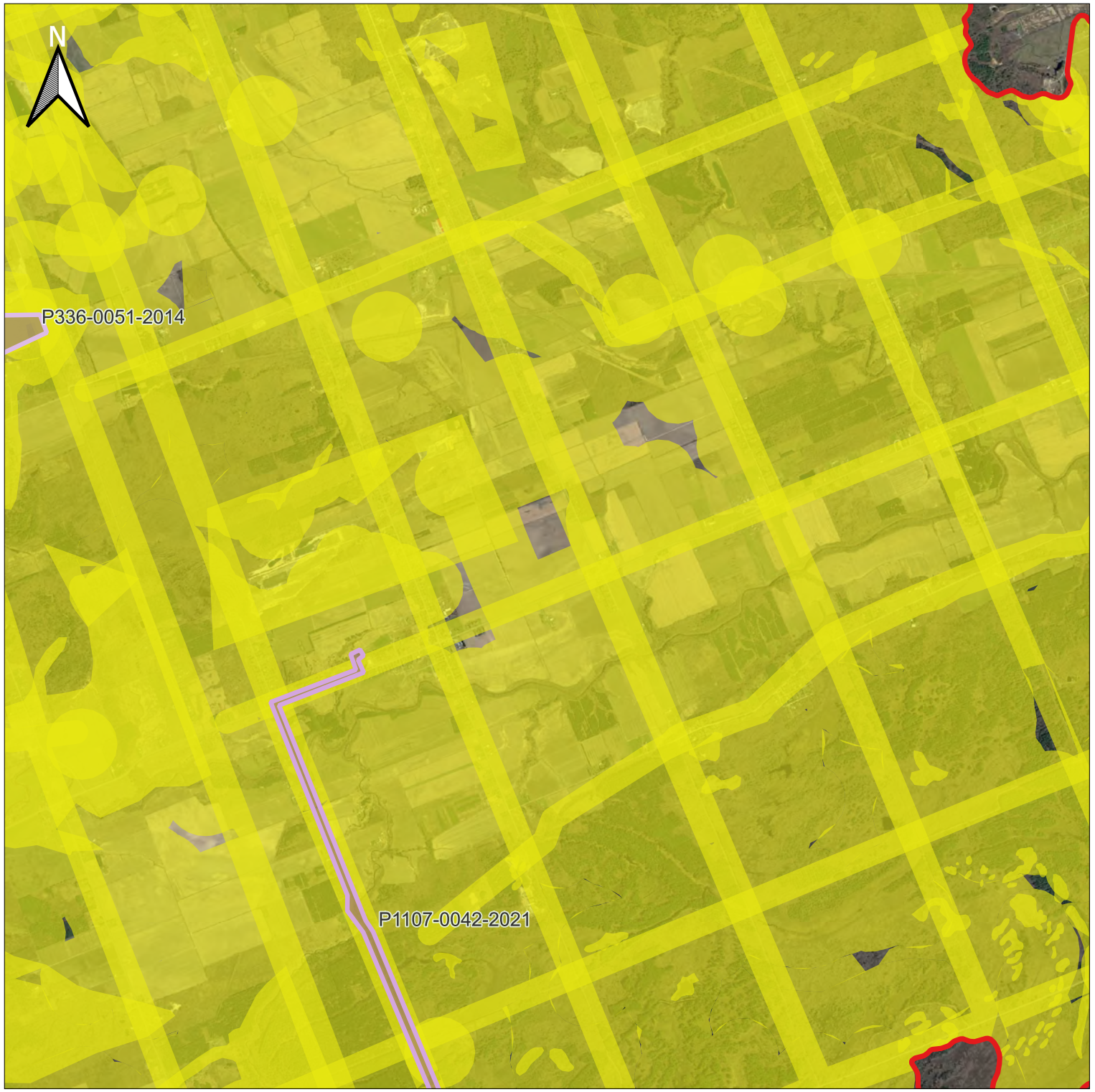
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-C**



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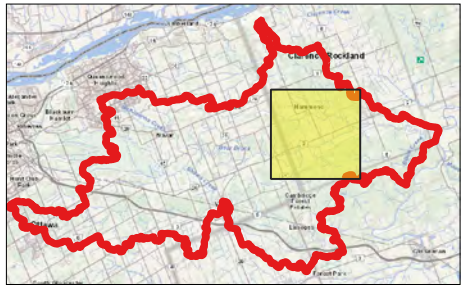


SCALE 1:50,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assessment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

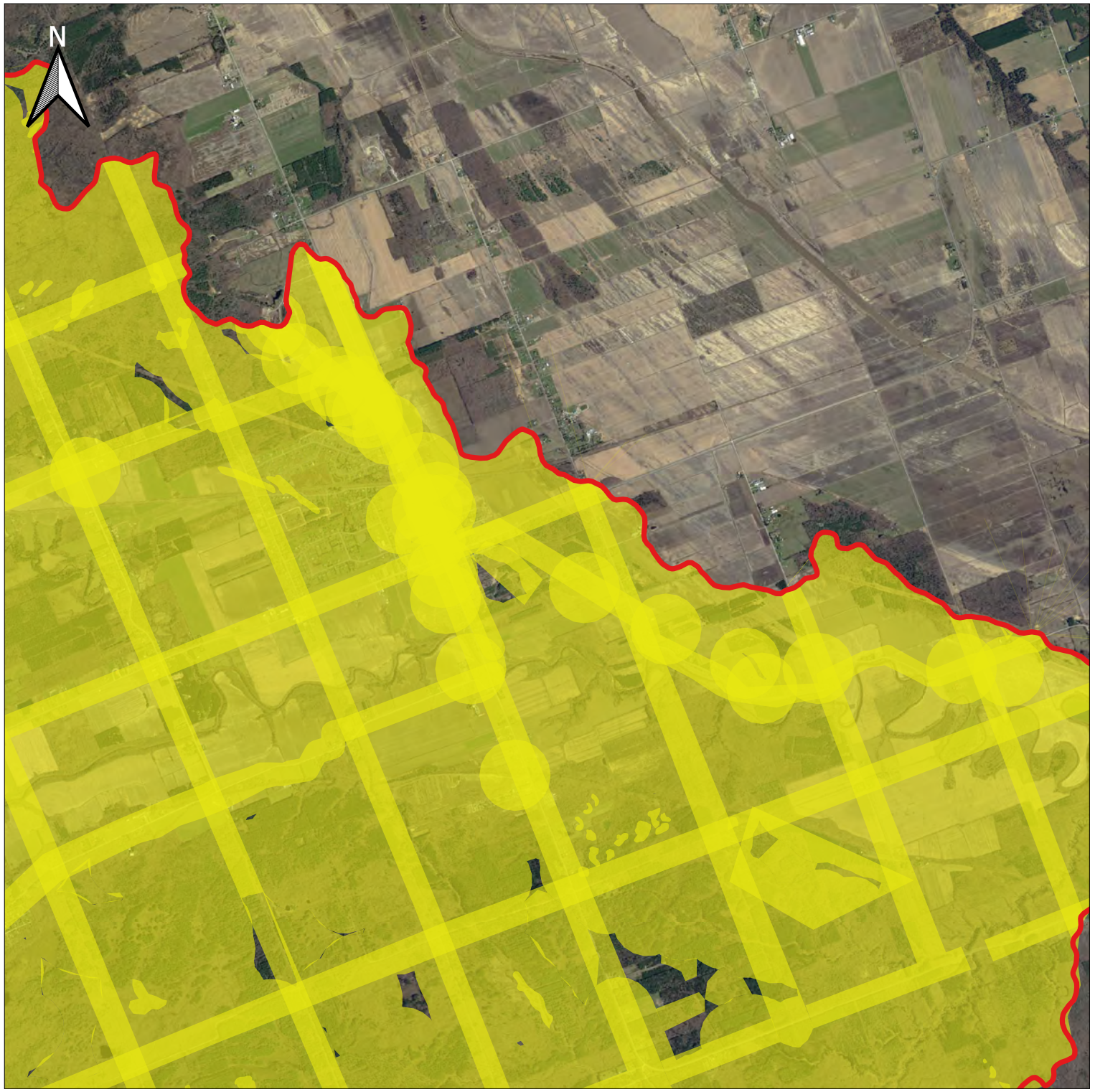
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**2-D**



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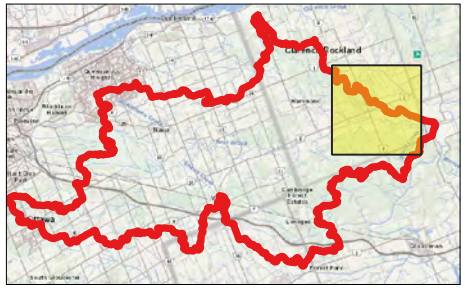


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

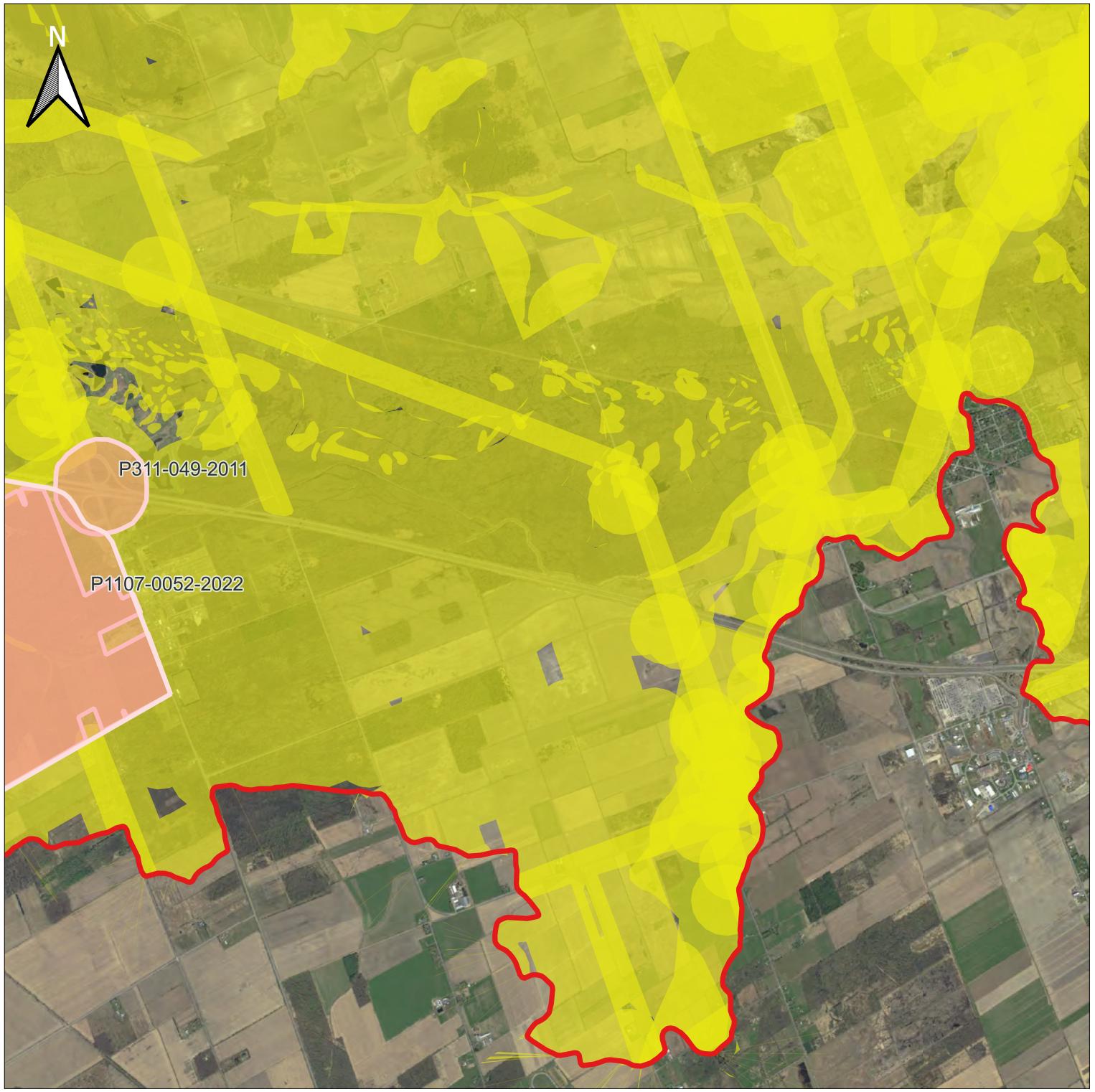
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-E**



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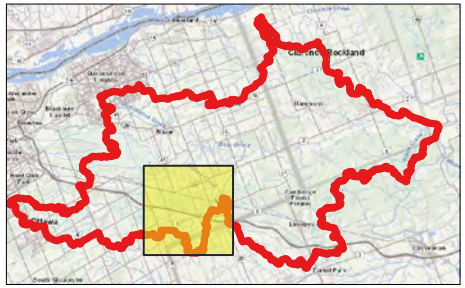

SCALE 1:50,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

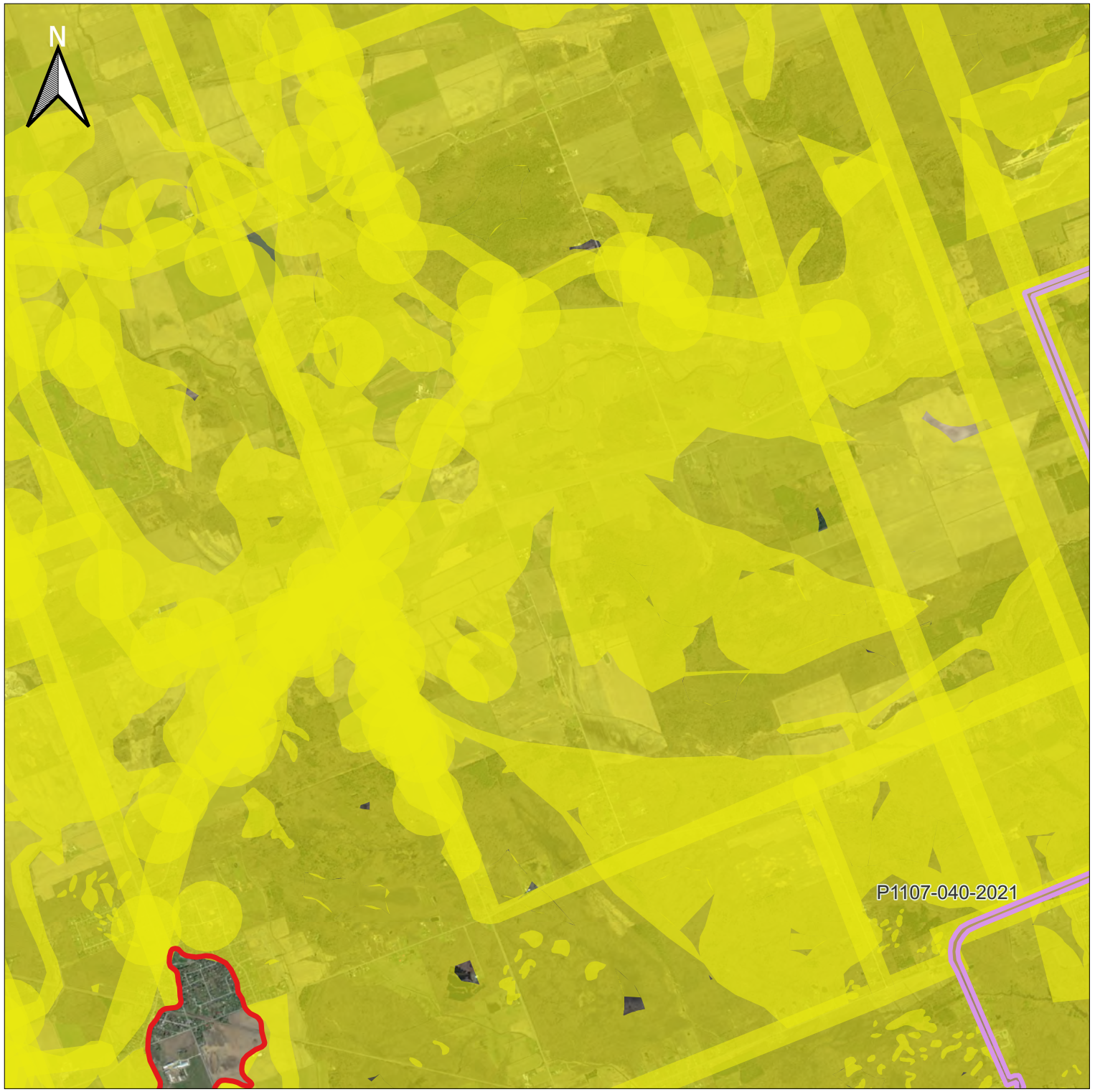
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-F**



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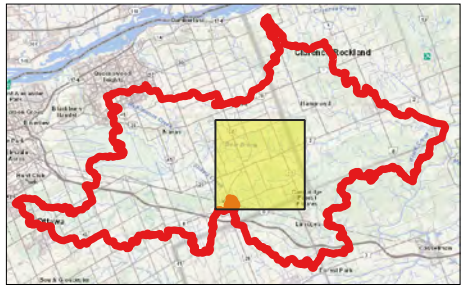


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

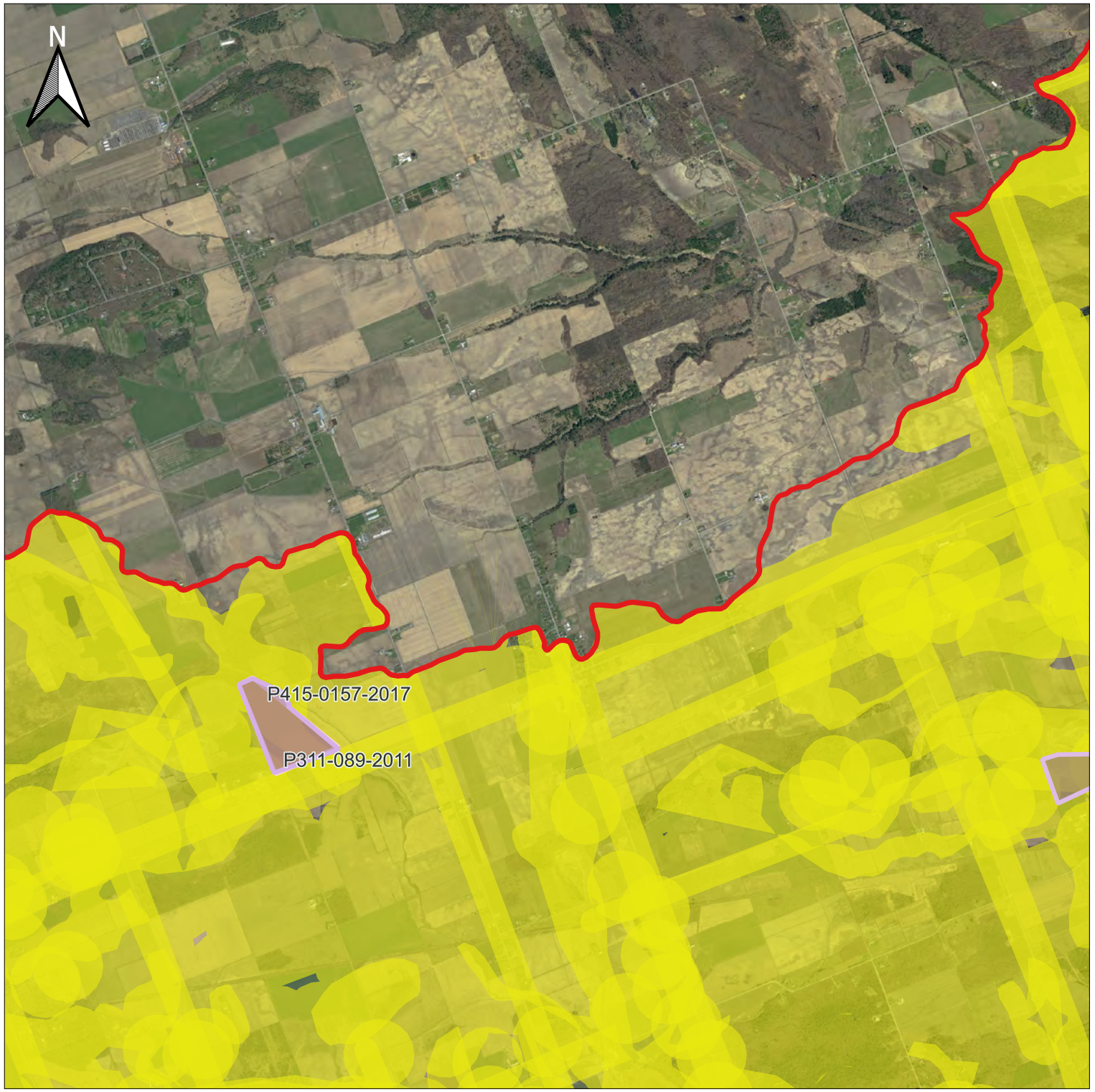
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-G**



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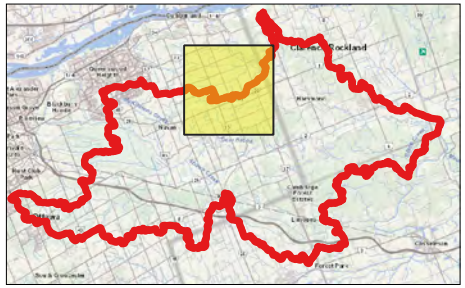


SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

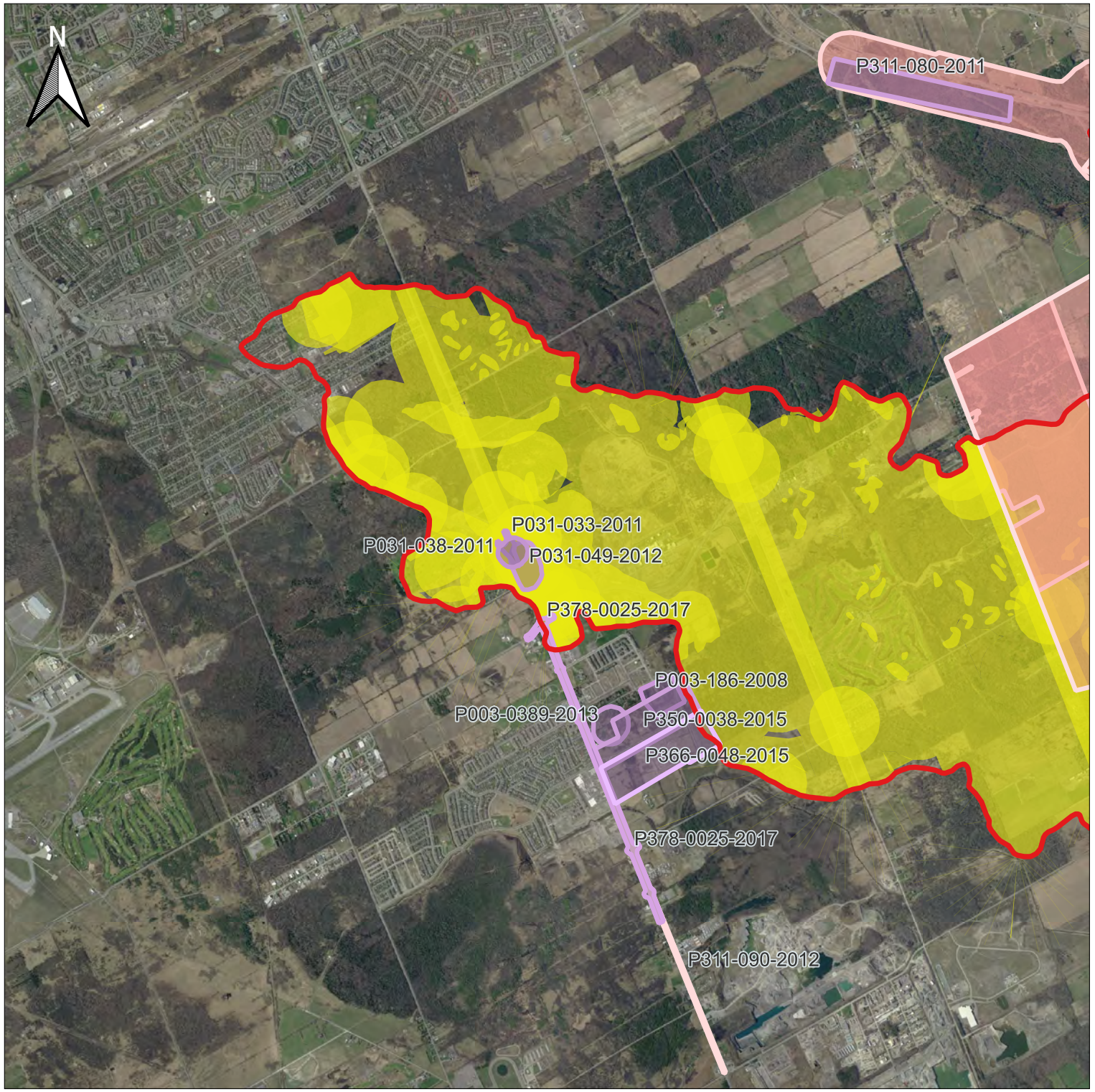
ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT		
TRUE NORTH ARCHAEOLOGICAL SERVICES	YYYY-MM-DD	2024-08-10
	PREPARED	GKB
	REVIEWED	RH
	APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-H**



KEY MAP

SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assessment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

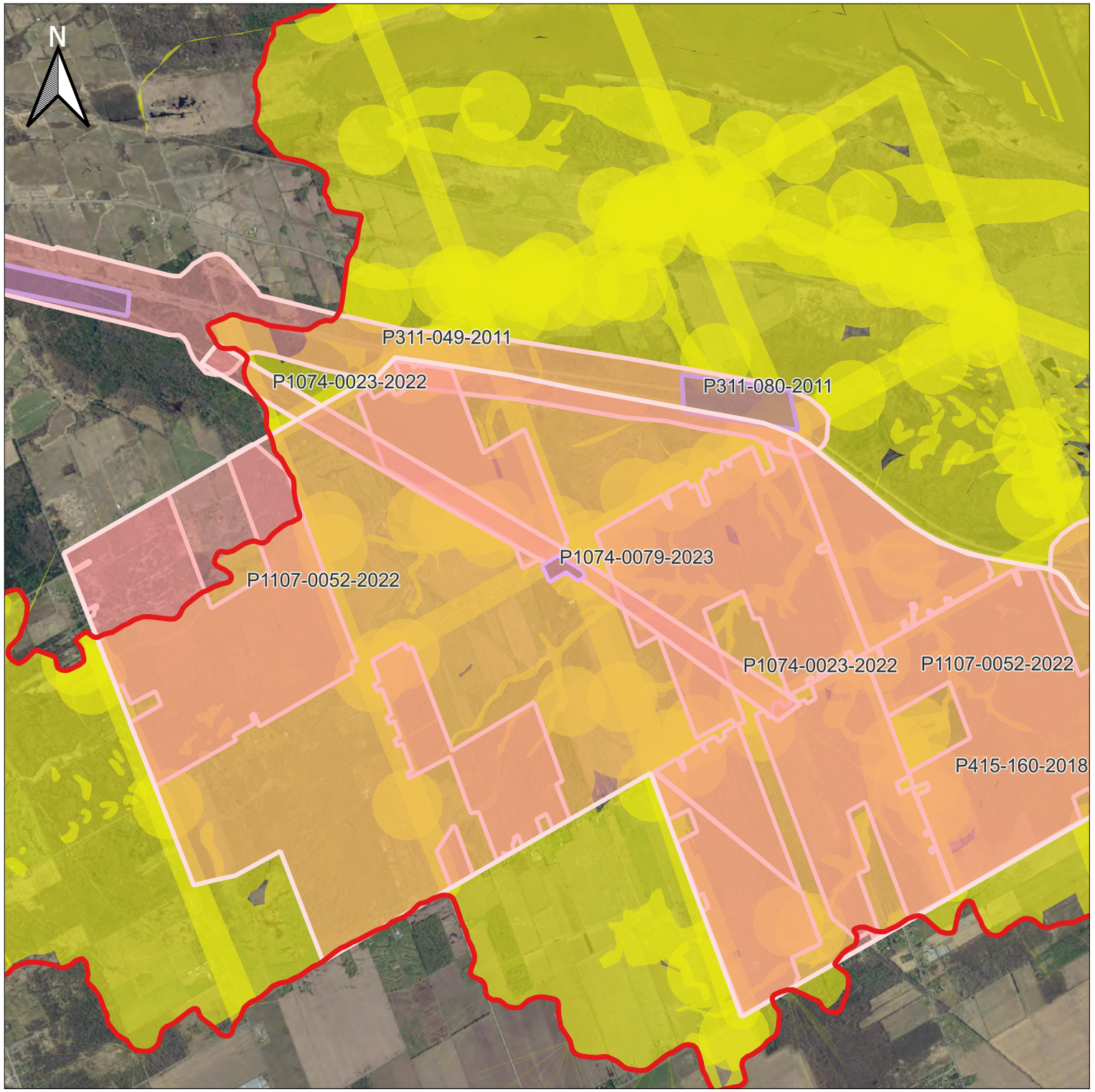
COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-I**



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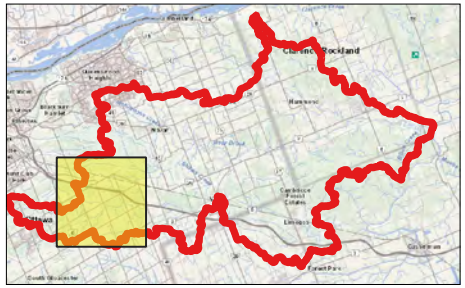

SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

- Archaeological Potential
- Previously Assessed; no further archaeological assessment recommended
- Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

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COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
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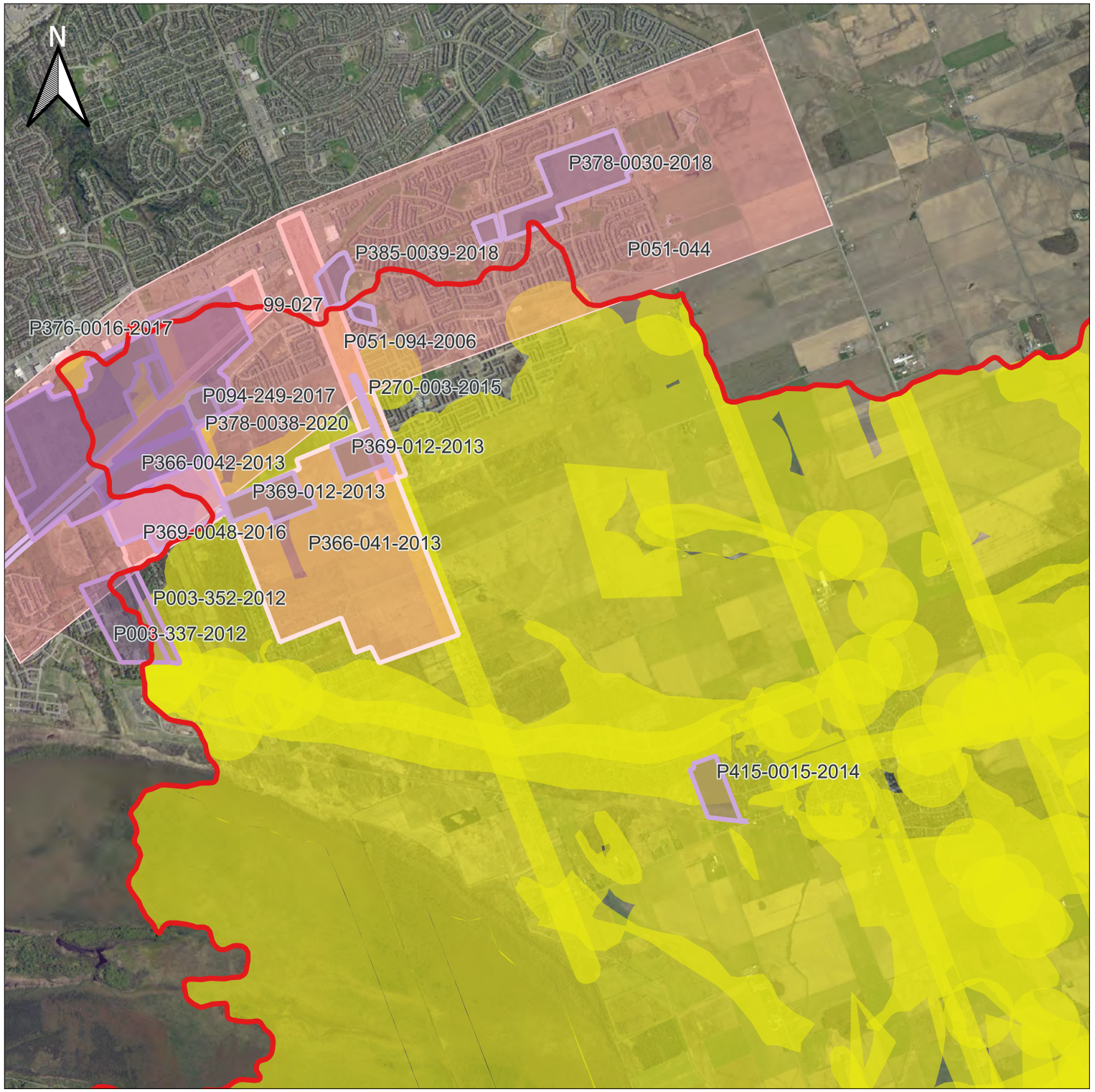
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-J**



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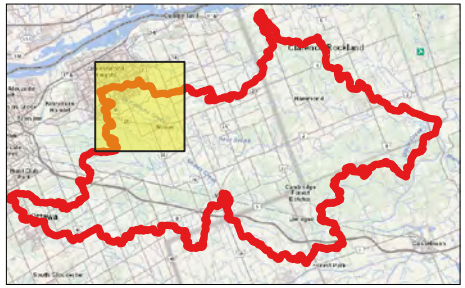

SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

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BEAR BROOK WATERSHED

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CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
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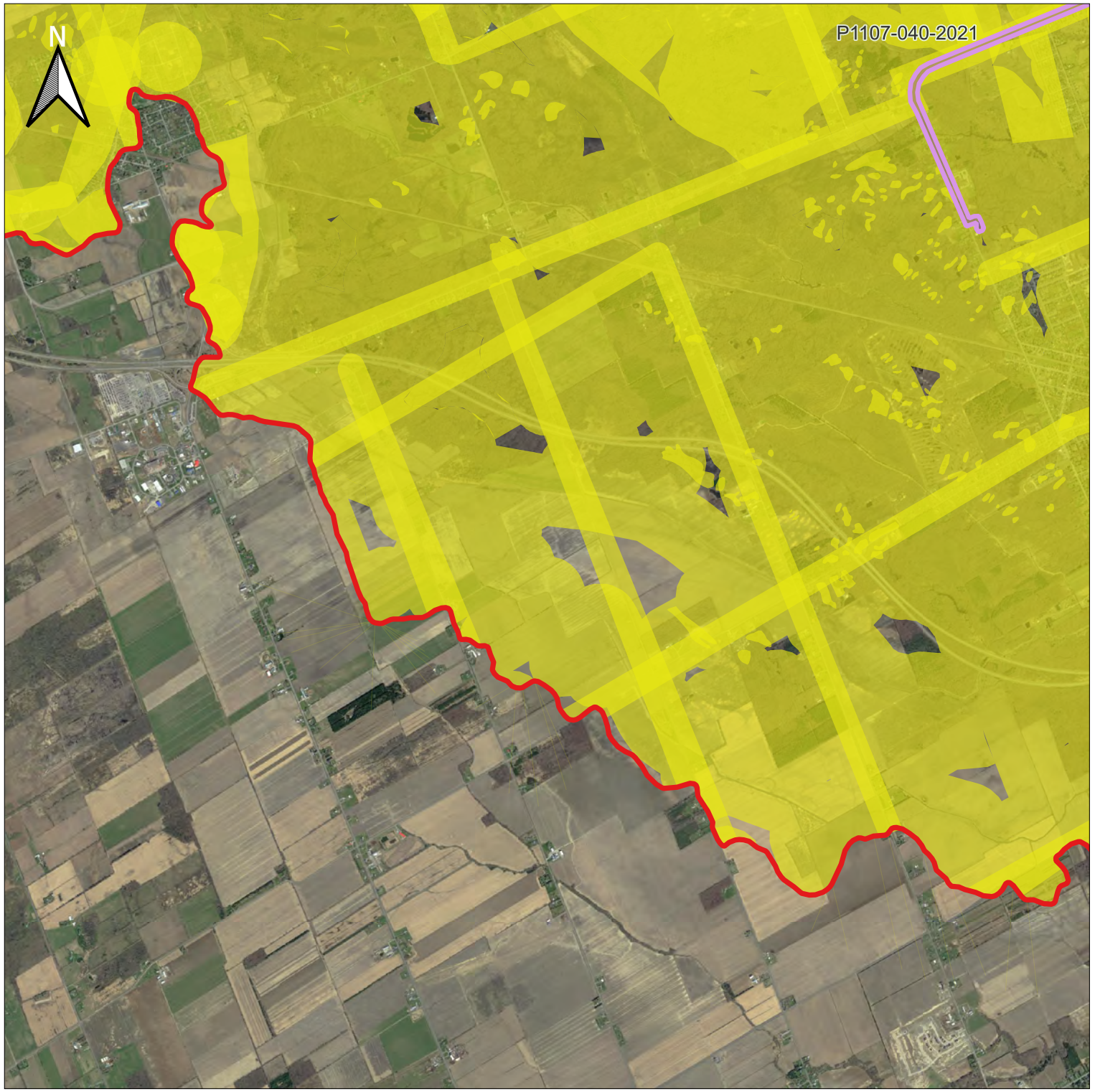
PROJECT NO.	REV.	MAP
2024031	001	**13-K**



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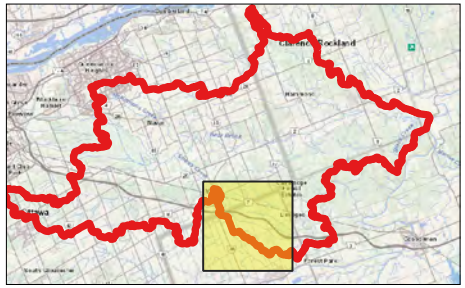

SCALE 1:110,000

LEGEND

Study Area

Archaeological Potential

Archaeological Potential

Previously Assessed; no further archaeological assessment recommended

Previously Assessed; further archaeological assessment recommended

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83.
COORDINATE SYSTEM: UTM ZONE 18, VERTICAL DATUM: CGVD28

2. BASE PLANS: LAND INFORMATION ONTARIO (LIO) OPEN DATA DRAPE 2019 AND LIO TOPOGRAPHIC MAP

500 0 500 1,000 1,500 m

SCALE 1:6,500

CLIENT

SOUTH NATION CONSERVATION

PROJECT

ARCHAEOLOGICAL SCREENING REPORT
BEAR BROOK WATERSHED

TITLE

COMBINED ARCHAEOLOGICAL POTENTIAL

CONSULTANT

TRUE NORTH ARCHAEOLOGICAL SERVICES

YYYY-MM-DD	2024-08-10
PREPARED	GKB
REVIEWED	RH
APPROVED	RH

PROJECT NO.	REV.	MAP
2024031	001	**13-L**

12.0 Signature Page

We trust that this report meets with your current needs. If you have any questions, or if we may be of further assistances, please contact either of the undersigned.

TRUE NORTH ARCHAEOLOGICAL SERVICES INC.

Randy Hahn, PhD
Project Archaeologist

Aaron Mior, MMA
Principal, Senior Archaeologist