

GREENSTONE WASTE MANAGEMENT ENVIRONMENTAL ASSESSMENT

Welcome to our Round 2 Open House!

The Municipality of Greenstone is conducting an Environment Assessment to develop a municipal Waste Management Master Plan for the long-term management of solid waste.

From
May 7th to 10th, 2024
we are hosting four open
house events across the
municipality in Longlac,
Nakina, Geraldton, and
Beardmore.

Why is this Project Needed?

As of Spring 2024, the status of the four municipal landfill sites within the Municipality of Greenstone is:



Beardmore Landfill

Was near capacity in 2021 and was expanded in 2023 to 42% capacity and rising

Nakina Landfill

At 50% capacity and rising



Longlac Landfill

At 74% capacity and rising



Geraldton Landfill

Closed

The Municipality needs a new, long-term solution to waste management.

Overview of Process



Notice of Commencement



Round 1: Introduction to the Project

- Need a refresher? **Round 1** boards are on the **projector**.
- What were the results? Go to **Board 2!**



Round 2: Waste Management System Selection

- Learn more about the different ways to participate in **Board 2!**



Round 3: Waste Management System and Site Selection

- What happens after Round 2? Learn more on **Board 9 and 10.**

Round 2 Objectives

1

Present Waste Management Systems and evaluation criteria

2

Collect feedback on preferred Waste Management Systems

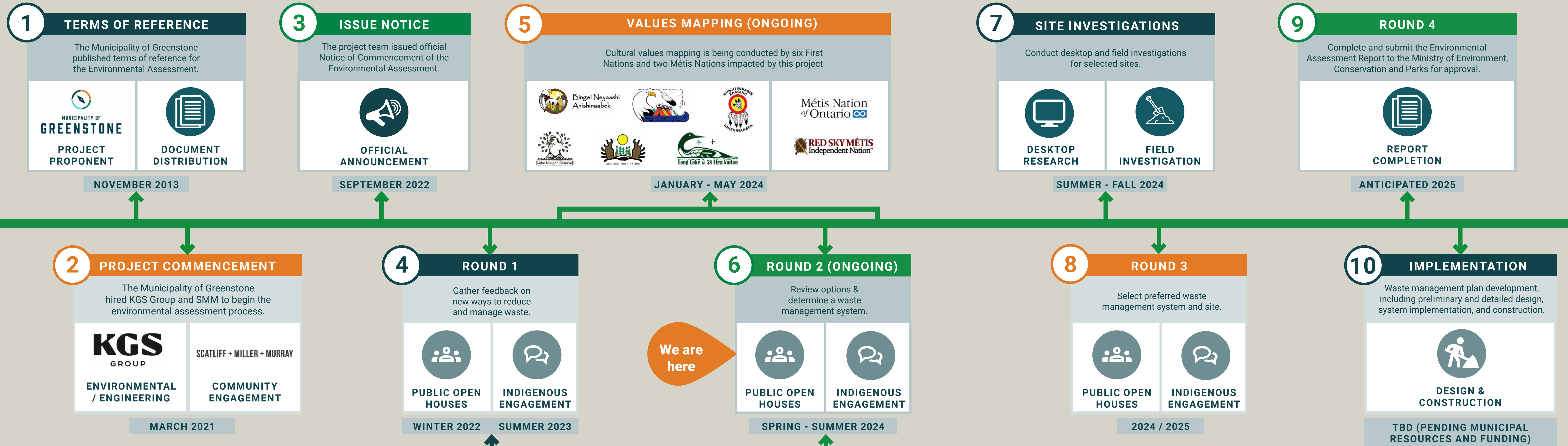
3

Present site exclusion criteria and eight (8) potential sites for the future Waste Management System

4

Present site evaluation and selection criteria

PROJECT TIMELINE



ROUND 1 - WHAT WE HEARD

Key priorities for the new Waste Management System (WMS) we heard about in Round 1.

BE LOCALLY ACCESSIBLE	PROTECT LOCAL WATER	INVEST IN LOCAL EDUCATION
INCLUDE WASTE DIVERSION	EFFICIENT OPERATIONS	RIGOROUS MONITORING

SIX WAYS TO PARTICIPATE TODAY

A Discuss the overall project with Greenstone representatives at this Open House.	B Review Round 1 boards on the project and associated engagement results on this board.	C Review Round 2 information presented on the Open House boards.
D Give your opinion on your preferred waste management system.	E Map your concerns and needs for the potential new landfill sites.	F Complete a comment form.

EXISTING WASTE MANAGEMENT SYSTEM

MAP OF THE EXISTING WASTE MANAGEMENT SYSTEM (WMS)



PROCESS TO SELECT NEW WMS FACILITY

1 SELECTING A SYSTEM

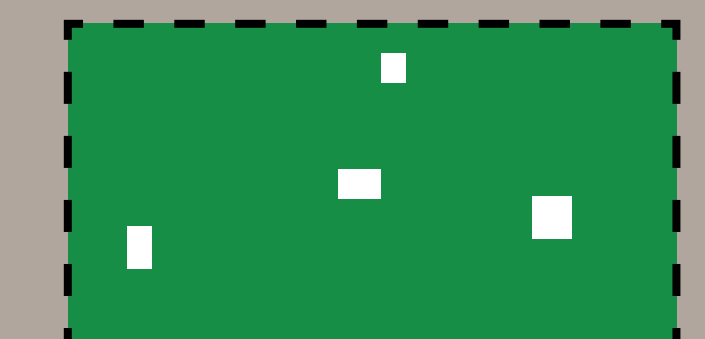
System Selection Evaluation Criteria
See Board 5 for more information.

We are here

2 SELECTING A SITE

A. Unoccupied Lands

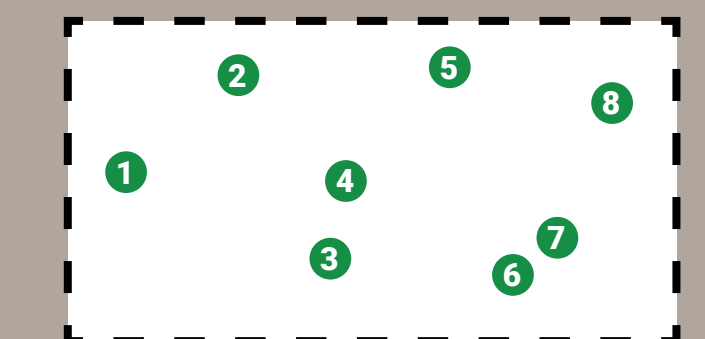
Land without any settlements



Areas without any settlements (green) selected.

B. List of Potential Sites

Site Exclusion Criteria



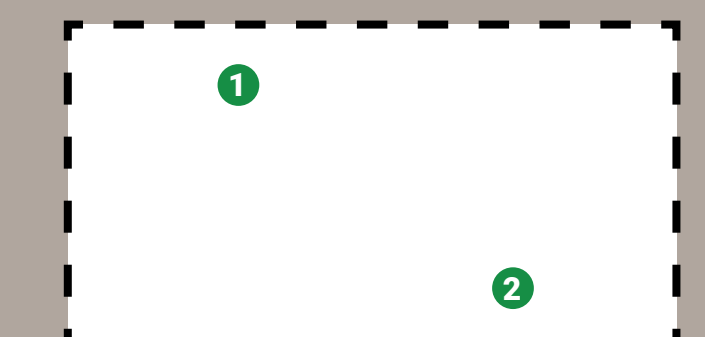
8-10 potential sites identified.

See Board 6.

We are here

C. Short-List of Sites

Site Evaluation Criteria + Values Mapping



2-3 sites selected for further study.

See Board 8 and Board 9.

D. Final Site Selection

Site Selection Criteria + Field Work

One site will be selected to locate the new WMS.

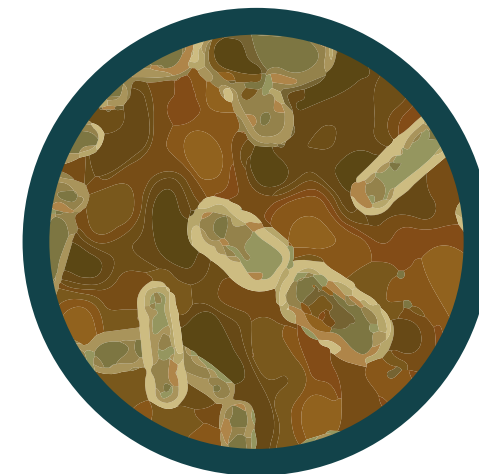
WASTE MANAGEMENT SYSTEMS

THERMAL PROCESSING



- Thermal processing involves the conversion of solid waste to energy, most often through combustion.
- Energy can be captured and used to generate electricity or heat, depending on the process used.
- Residual waste (typically classed as hazardous) and CO₂ gas are by-products.
- Residual waste requires landfill disposal.

BIOLOGICAL PROCESSING



- Biological processing involves the use of micro-organisms (anaerobic bacteria) to break down and stabilize the organic portion of the waste stream.
- There is potential to capture biogas in this process which can be used to generate energy.
- Residual waste requires landfill disposal.

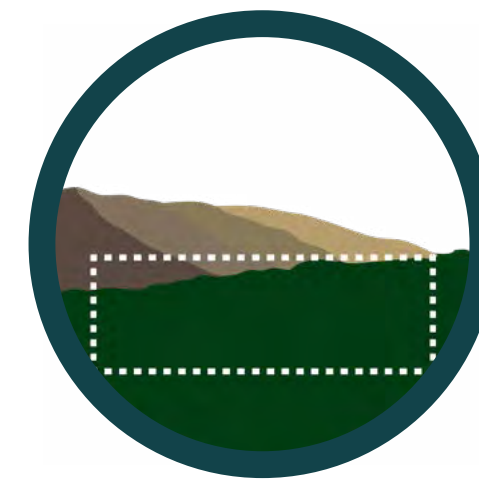
LANDFILL

LANDFILL EXPANSION



- Expand one or more of the Municipality's existing landfills to receive more future waste.
- This could either include vertical or horizontal expansion.

NEW LANDFILL



- Construct a new landfill. Landfilling is one of the most commonly used and readily available forms of disposing of waste.
- When existing landfills are full, they can then be converted to transfer stations, with waste transported to a new landfill.
- A new landfill would accept solid non-hazardous waste.



TRANSFER STATIONS



- Transfer stations are designed to temporarily store solid waste.
- From there, municipal waste can be sent to a private or public facility within or outside of the municipality's borders.
- Following a Ministry approval process, a contract will be needed with the receiving site.
- Local transfer stations will be a part of all Waste Management Systems.



WASTE DIVERSION & WASTE RE-USE

Waste can be diverted from disposal through a broad range of waste diversion and re-use programs (recycling, organics, and excess soil management). Waste not diverted would require disposal. Some methods include:



RECYCLING

- Recycling includes the collection, sorting, marketing, and processing of materials removed from the solid waste stream, and the transformation or remanufacture of those materials for use in new products and/or other productive uses.



COMPOSTING

- Composting involves the breaking down of organic matter by microorganisms in the presence of oxygen.



EXPORT OF WASTE

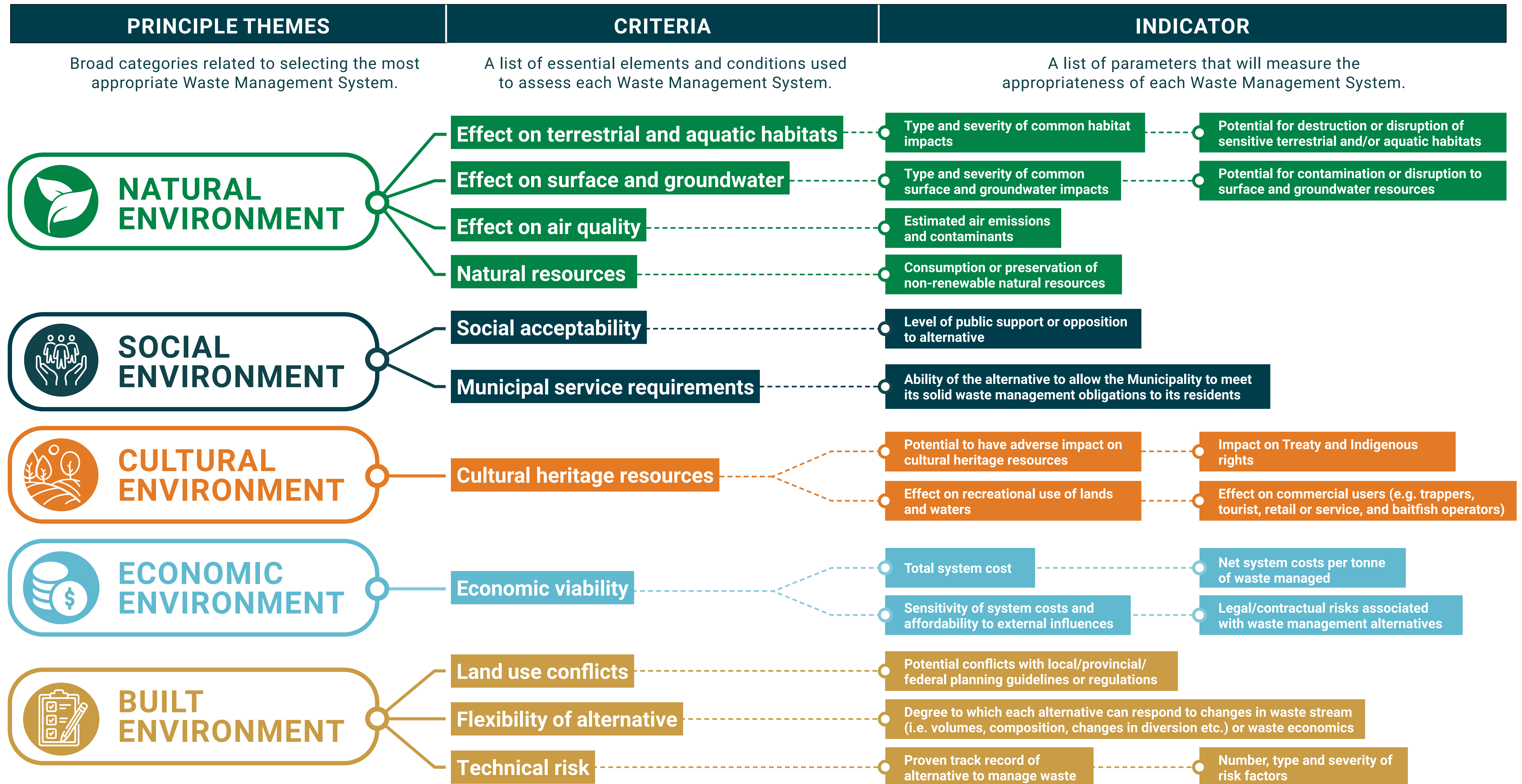
If no method of managing the Municipality's waste stream is available, then waste could be sent to another private or municipal facility for disposal.



DO NOTHING

Maintain the status quo and continue with current disposal activities. Included in the evaluation of alternatives to provide a benchmark against which other alternatives may be measured.

SYSTEM SELECTION EVALUATION CRITERIA



SITE EXCLUSION CRITERIA

FIRST NATION, MÉTIS, AND INUIT LANDS

PROXIMITY FROM SPECIFIC FEATURES

- 500 m from residential areas
- 500 m from institutional areas
- Where possible, areas less than 50 metres from a permanent watercourse
- 500m from Designated Natural Heritage areas
- 15 km from federally regulated airports
- Land that would prevent the efficient expansion of settlement areas, on sites adjacent or close to settlement areas

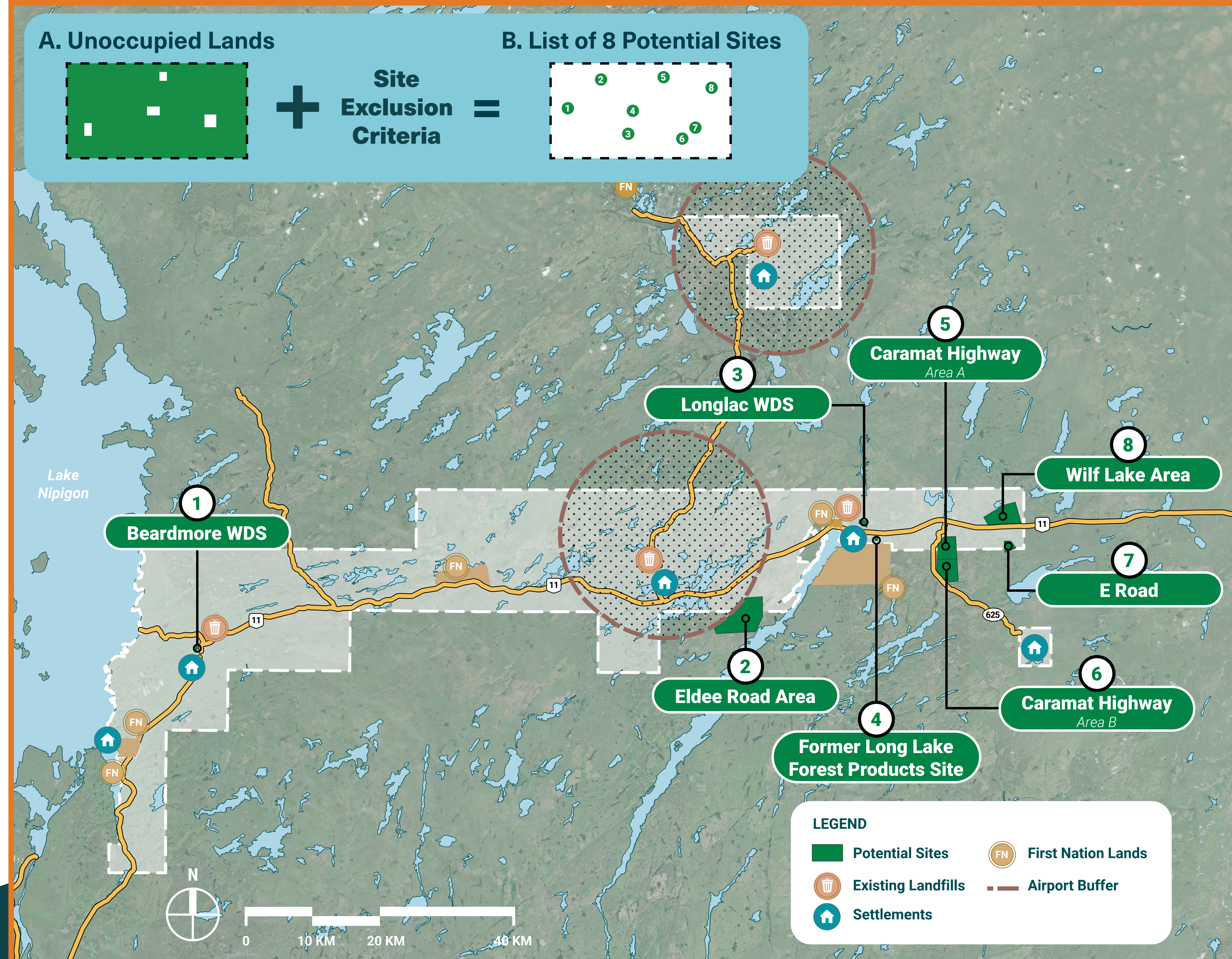
INCOMPATIBLE LANDS

- Class 1 prime agricultural lands
- Park and recreational lands
- Land containing significant habitat of endangered species and/or threatened species
- Land use designation that do not conform with the project (Sites with land use direction not consistent with the project.)

SITE CHARACTERISTICS

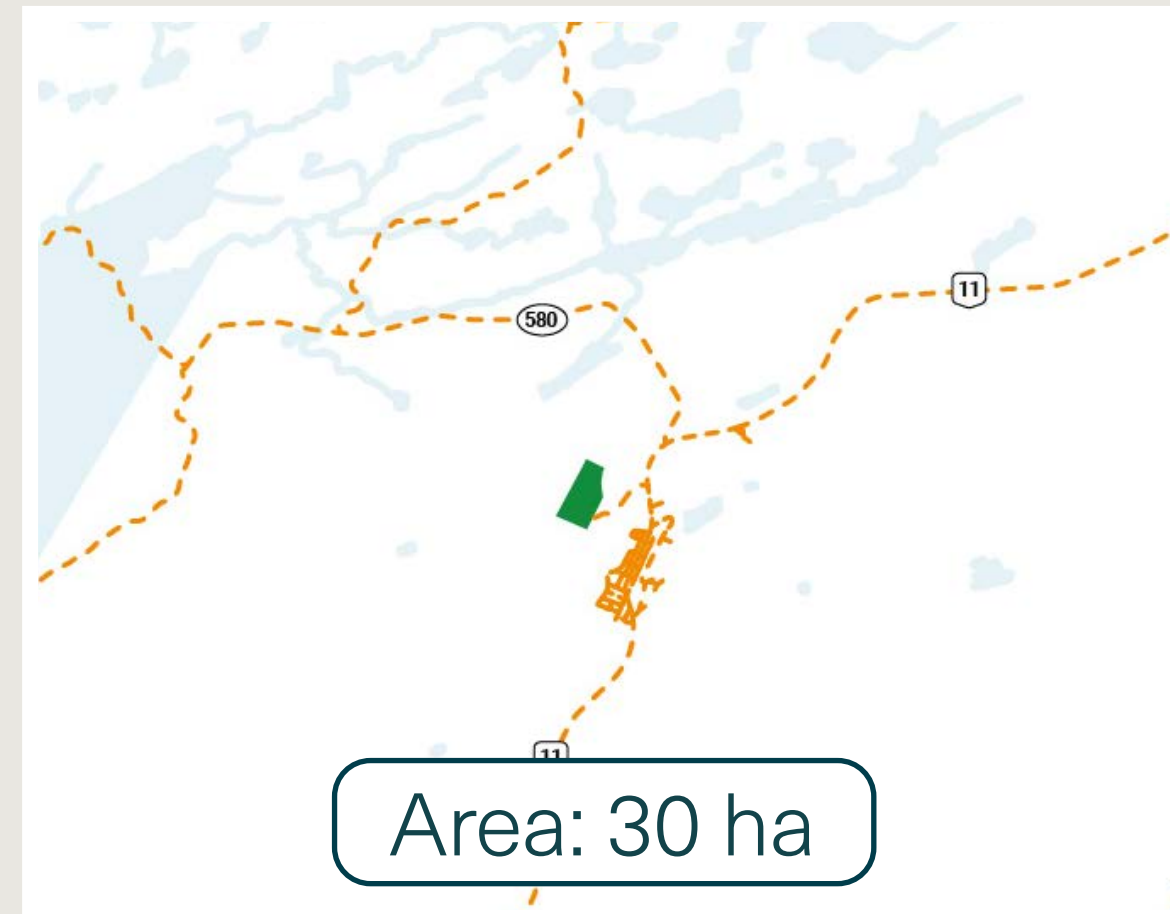
- Where possible, areas with less than 1 metre (subject to further consideration) of overburden in the base of the potential landfill.
- Land where there are natural and or/ human made hazards that cannot be mitigated (e.g., flooding, mine hazards, etc.).
- Land containing sufficiently significant cultural heritage resources (archaeological, built heritage, cultural heritage landscape)
- Land known/identified as a mineral, mineral aggregate, or petroleum resource, where development would preclude or hinder their expansion or continued use or which would be incompatible for reasons of public health, safety or environmental impact.

MAP OF POTENTIAL 8 SITES IDENTIFIED VIA SITE EXCLUSION CRITERIA



DETAILS OF POTENTIAL SITES

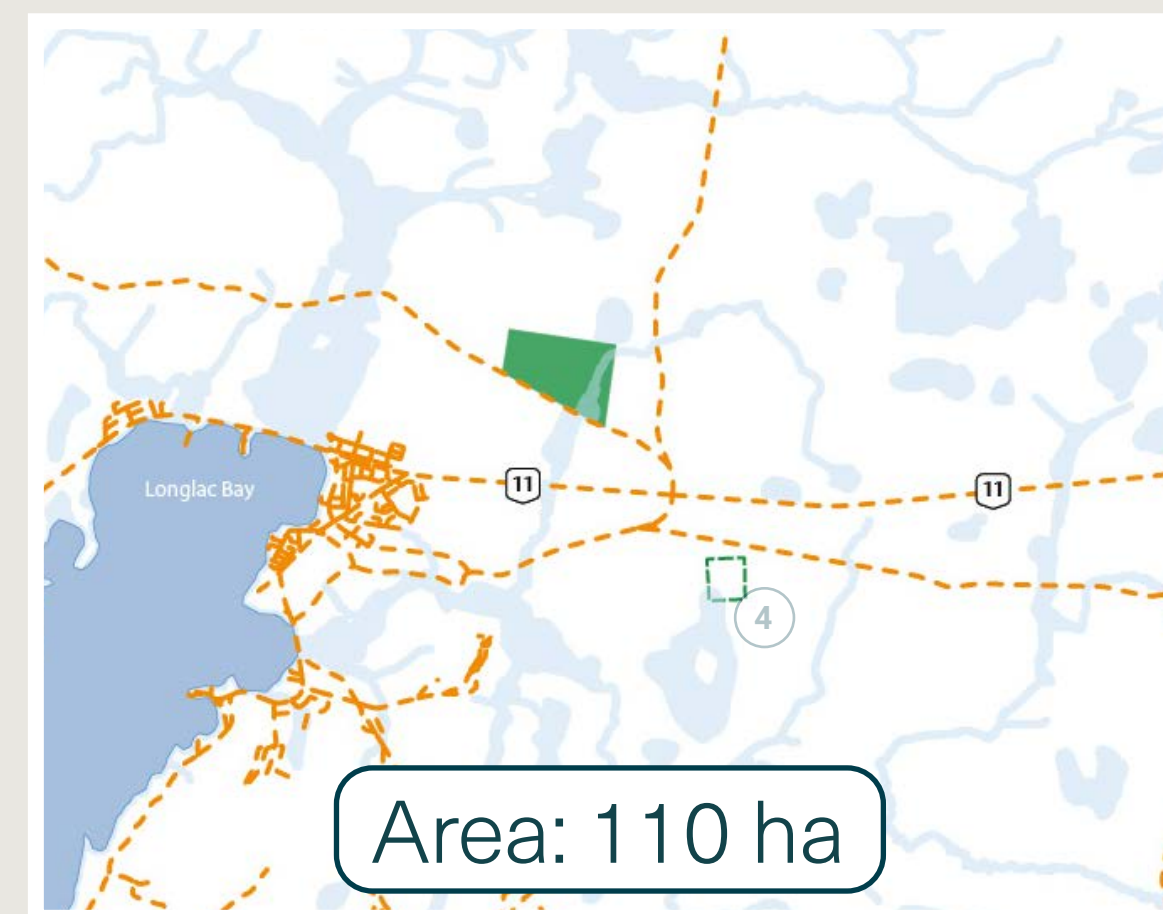
1. Beardmore Waste Disposal Site (WDS)



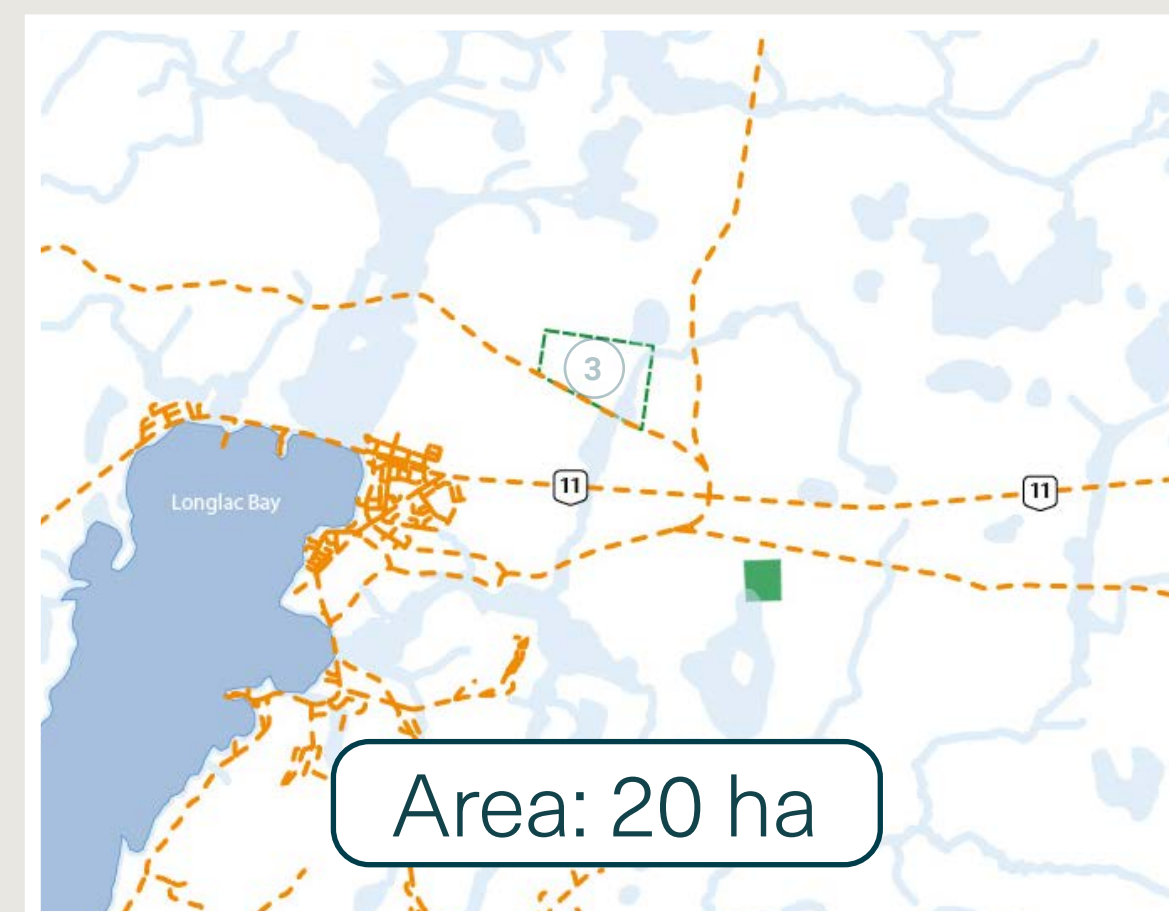
2. Eldee Road Area



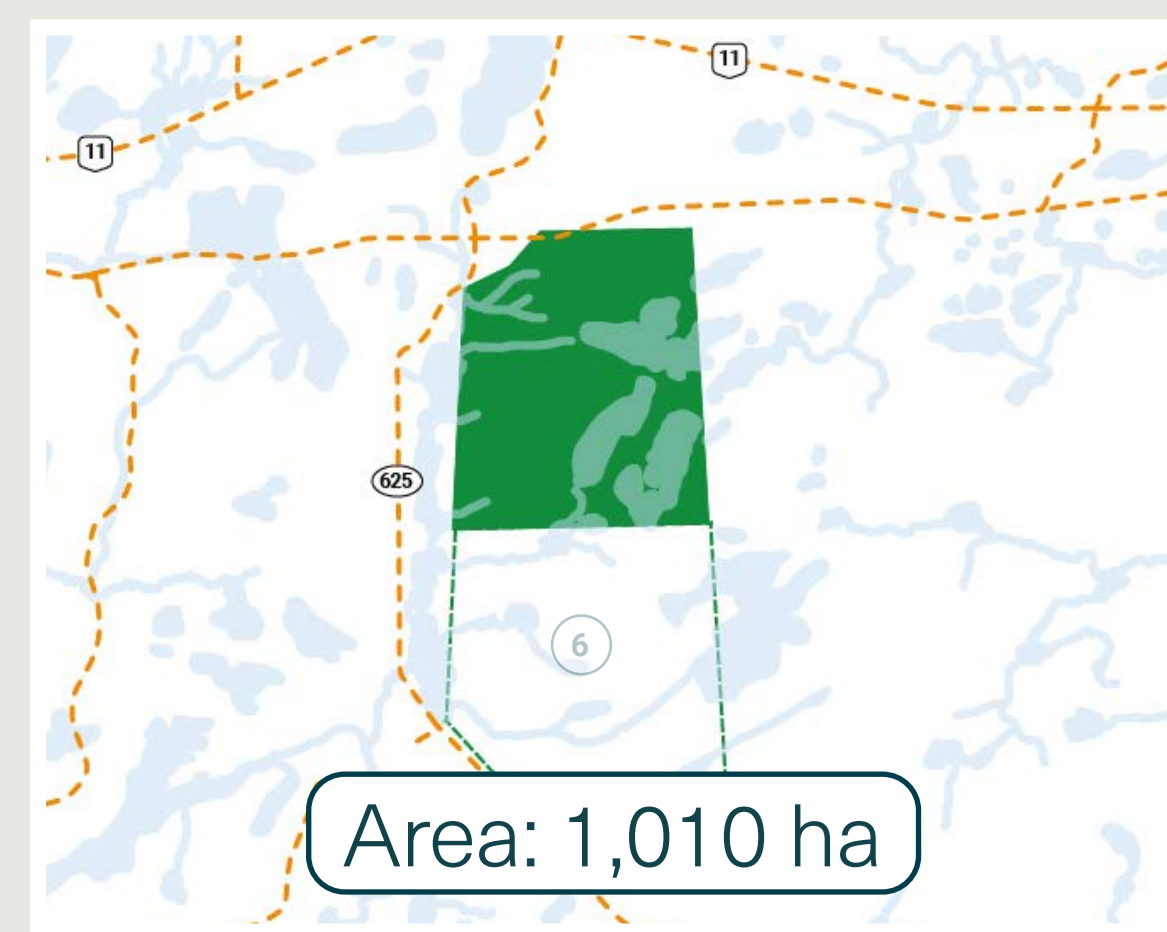
3. Longlac WDS



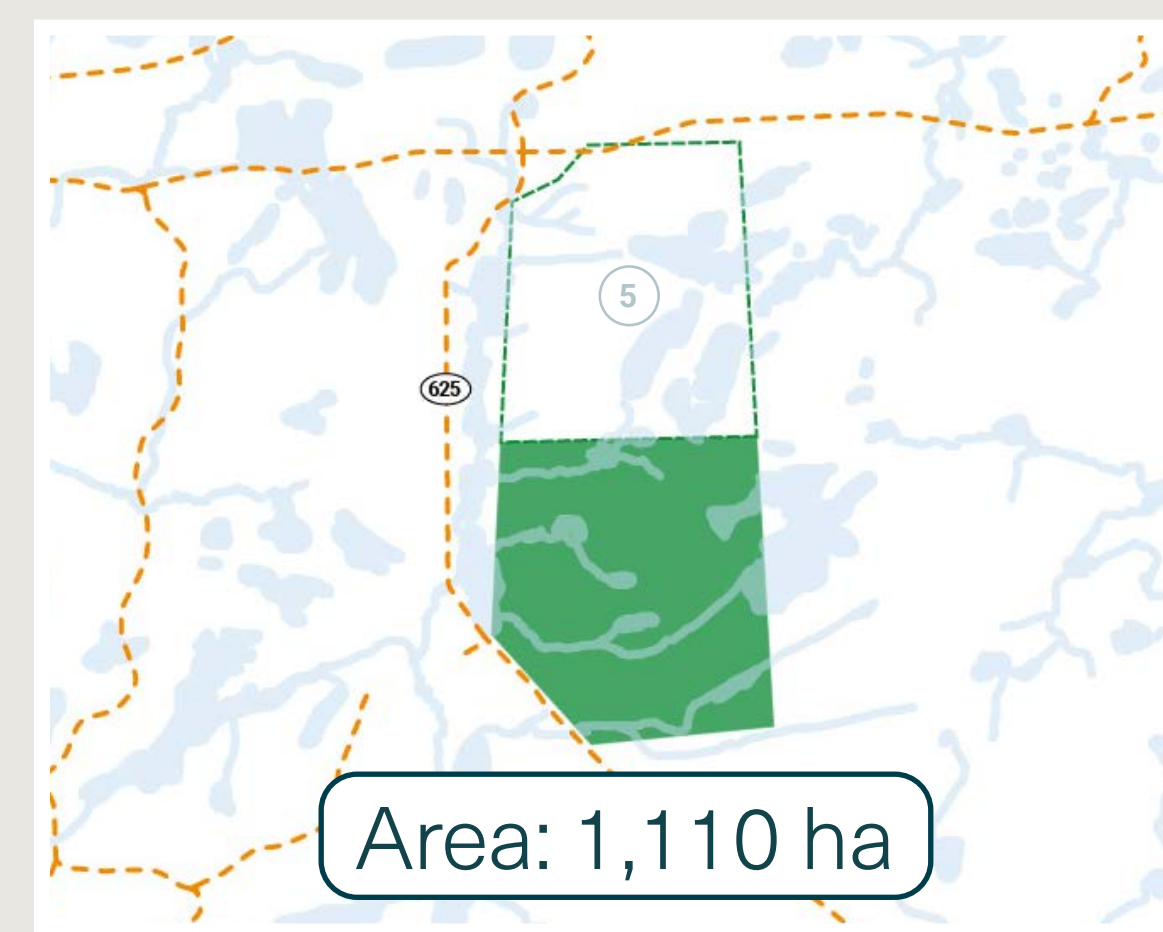
4. Former Long Lake Forest Product Site



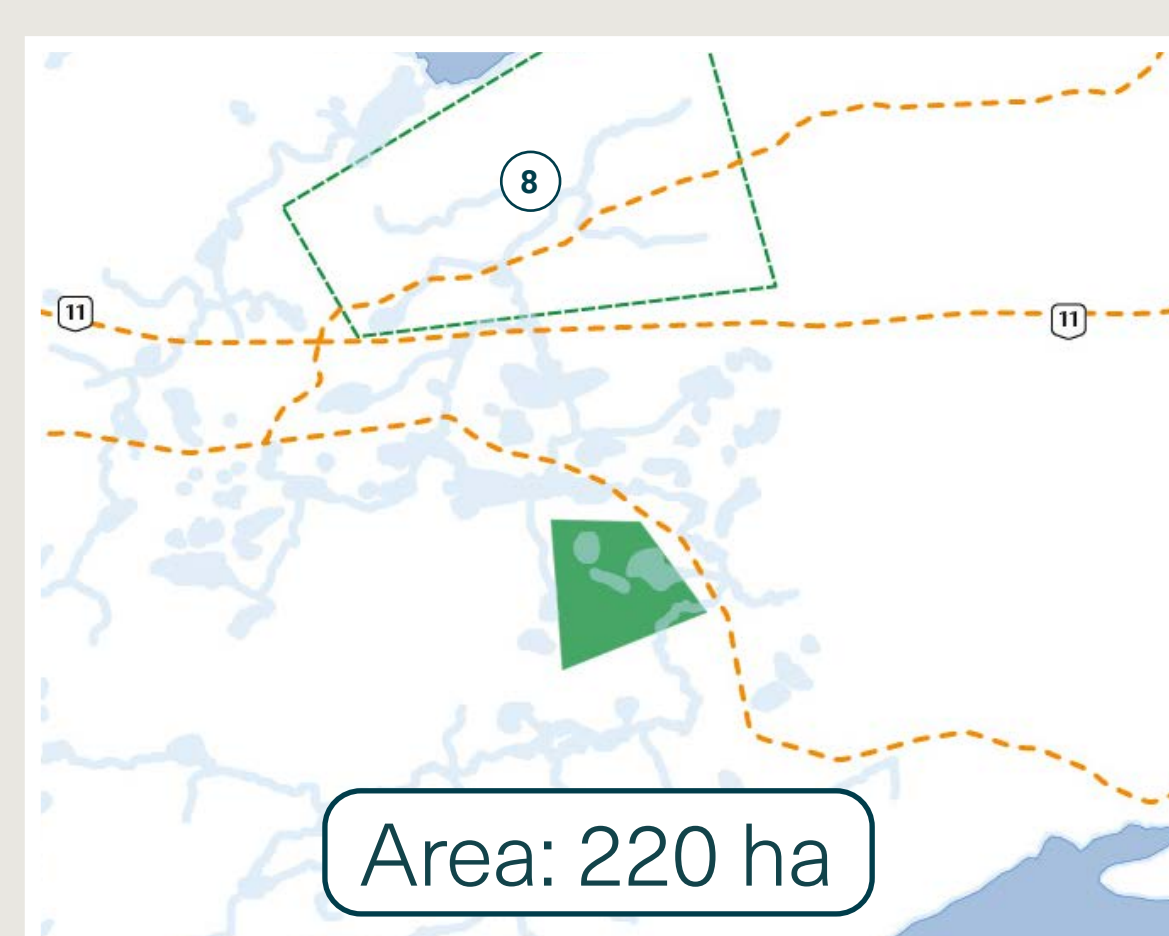
5. Caramat Highway Area A



6. Caramat Highway Area B



7. E Road



8. Wilf Lake Area



Overall Site Area Required for New WMS

~ 35 ha



ATTRIBUTES OF AN IDEAL WASTE MANAGEMENT SYSTEM



The site is closest to the highest population densities.



The site will have the least impact to traffic volumes.



The site does not have existing environmental liabilities.



The site is closest to major road routes and convenient to access.



The site will be a large property (minimum 35 ha).



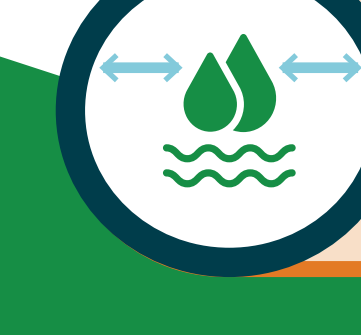
The site will not be adjacent to developed or sensitive areas.



The site will be immediately available for development.



The site will not be close to airports.



The site will be as far away from waterbodies as possible.

NEXT STEPS - SITE SELECTION IN ROUND 3

PRINCIPLE THEMES, CRITERIA, INDICATORS

FIELD ASSESSMENTS PLANNED IN SUMMER/FALL 2024 WILL INFORM WHICH SITES BEST FIT THE SITE EVALUATION CRITERIA



NATURAL

Terrestrial and Aquatic Habitats

- Potential for destruction or disruption of sensitive terrestrial and/or aquatic habitats
- Effects on protected natural areas such as ANSIs, ESAs, designated wetlands or other significant or locally important areas
- Effects on fish and their habitat, spawning movement, or environmental conditions
- Distance from parks and protected areas

Air Quality

- Estimated air emissions and contaminants

Surface and Groundwater Quality and Quantity

- Number of watercourses on or adjacent to the site
- Effects on surface and groundwater quality, quantities, or flow, including significant sedimentation or soil erosion on or off-site
- Potential for contamination or disruption to surface and groundwater resources

Wildlife and Vegetation

- Effects on wildlife and vegetation, including rare (vulnerable), threatened or endangered species of flora, fauna and their habitat
- Effects on wildlife habitat, populations, corridors and movement



SOCIAL

Integration with Community

- Effects of emissions of odours, dust, noise, light pollution
- Potential disruption to businesses along haul routes or in proximity (e.g. noise impacts, traffic etc.)
- Increases to demands on community services and infrastructure
- Effects on recreation and tourism
- Effects on scenic or aesthetically pleasing landscapes or views
- Potential for aesthetic impacts
- Proximity to communities

Social Acceptability

- Level of public support or opposition



BUILT

Land Use Conflicts

- Potential conflicts with local/provincial/federal planning guidelines or regulations
- Effects on use of Canada Land Inventory Class 103, specifically crop or locally significant agricultural land
- Bird hazards to airport facilities
- Number of sensitive land uses in proximity
- Effects on traffic (particularly from haul routes)
- Effects on resource harvest (e.g. forestry, trapping, hunting, baitfish, etc)



ECONOMIC

Economic Viability

- Facility cost (capital/operating)
- Impact on transport/collection costs



CULTURAL

Cultural Heritage Resources

- Effect on heritage buildings, structures or sites, archaeological sites or areas of archaeological importance or cultural heritage landscapes
- Effect on land, resources, traditional activities, or other interests of Indigenous communities
- Effects on neighbourhood or community character



CONSTRUCTABILITY

Existing Infrastructure

- Roads adaptable to hauling needs
- Site access (i.e. secondary roads and upgrades)
- Site electrical services

Land

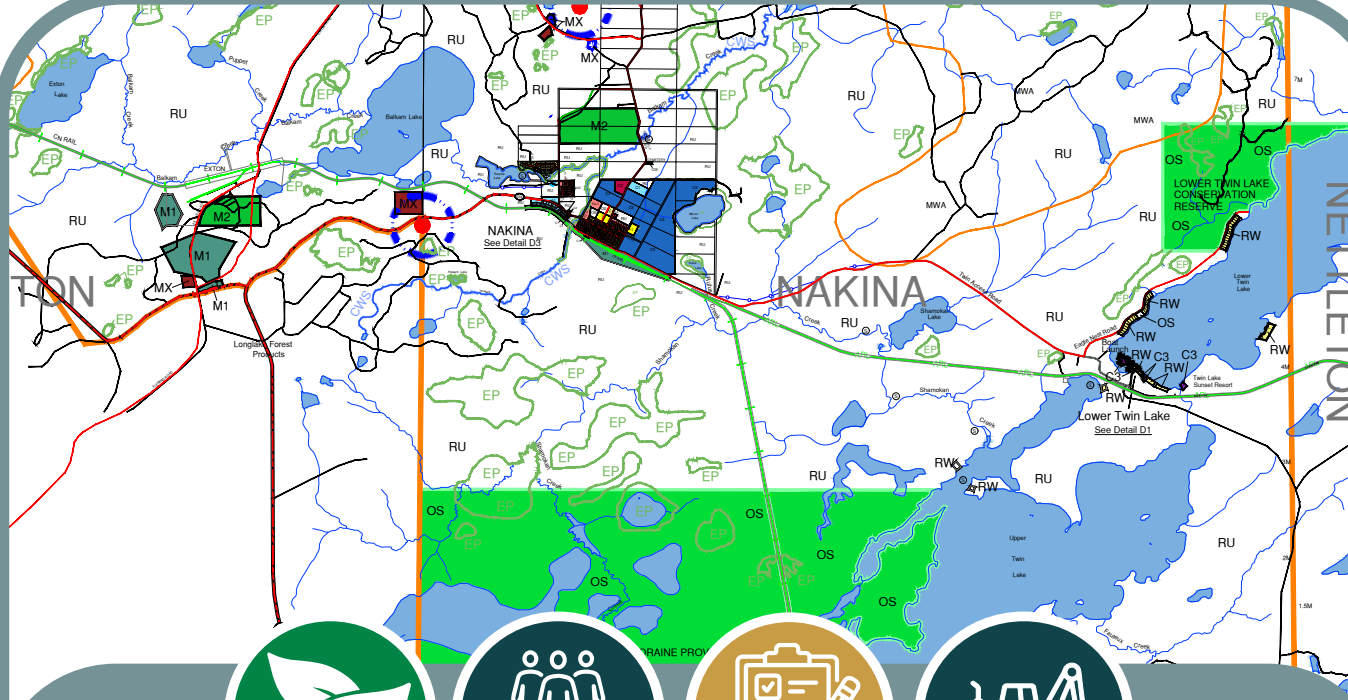
- Sufficient land area for development
- Topography of site
- Adjacent land use
- Site and area geology
- Presence of permafrost
- Depth to groundwater table
- Distance to drinking water sources
- Location of floodplains

ACTIVITY

Are we missing any critical final site evaluation criteria?


Please add a sticky note!

NEXT STEPS - 2024 SUMMER FIELD WORK




EXISTING AND PLANNED LAND USES REVIEW

Including the identification of parks and protected areas, crown land recreational values and users, and other items.



GEOLOGIC AND HYDROGEOLOGIC STUDIES


Including baseline assessments, and in accordance with O.Reg. 232/98.



SURFACE WATER STUDIES

Features and conditions, including baseline assessments.

AIR AND NOISE STUDIES



SOCIO-ECONOMIC EVALUATION

Present site and adjacent landuse and value dollar assessment



NATURAL RESOURCE USE REVIEW

Agriculture, forestry, and mineral extraction, as well as other commercial uses (e.g. trapping, tourism operations, baitfish operators, bear management areas, etc).




NATURAL HERITAGE SPECIES-AT-RISK ASSESSMENT

Including fish values, aquatic resources, and wildlife habitats, among other items.



ARCHAEOLOGICAL AND HERITAGE STUDIES

Stage I and Stage II Archeological Studies.



OTHER STUDIES

Identification of potential effects, mitigation measures and net effects of the "alternatives to" and the alternative methods.

THANK YOU

We appreciate your participation at our Round 2 Open House!

TODAY

Comment Form

Please fill out a comment form before you leave today.

- Let us know how your experience was at this event.
- Share ideas you have with us for the future of the project.

Your comments during the Environmental Assessment process are an important step in determining the best solutions for the Municipality.

Further Investigation

Based on the feedback provided during the Round 2 open houses, our team will narrow the sites and systems being considered to a few preferred options.

Throughout the summer of 2024, the potential list of sites and systems will be evaluated based on the criteria identified on Board 7 and 8, which will be informed by technical studies identified on Boards 9.

This process will help us identify the final site.

Round 3 Events

Round 3 events will present the preferred site(s) and system(s).

The timing of the next round of open houses are to be confirmed.

Interested in keeping up-to-date with project progress, or providing further feedback?

Contact our team at:



GreenstoneEA@kgsgroup.com



www.greenstone.ca

WASTE MANAGEMENT SYSTEM SELECTION

1 Which Waste Management System do you prefer?
Place one dot on your top preference for Greenstone!

RATING CATEGORIES	THERMAL PROCESSING	BIOLOGICAL PROCESSING	EXISTING LANDFILL EXPANSION	NEW LANDFILL
CAPITAL COST	\$\$\$	\$\$\$	\$\$	\$\$
OPERATING COST	VERY HIGH	VERY HIGH	MODERATE	MODERATE
AREA REQUIRED	LOW	MODERATE	MODERATE	MODERATE
VALUABLE BY-PRODUCTS	LOW	LOW	LOW	LOW
CARBON FOOTPRINT	HIGH	LOW	MODERATE	MODERATE
POLLUTION	HIGH	LOW	MODERATE	LOW
STANDALONE SYSTEM	NO	NO	YES	YES

DO NOTHING

2 Which waste diversion and re-use opportunities do you want to see in Greenstone?
Place dots on your choices!

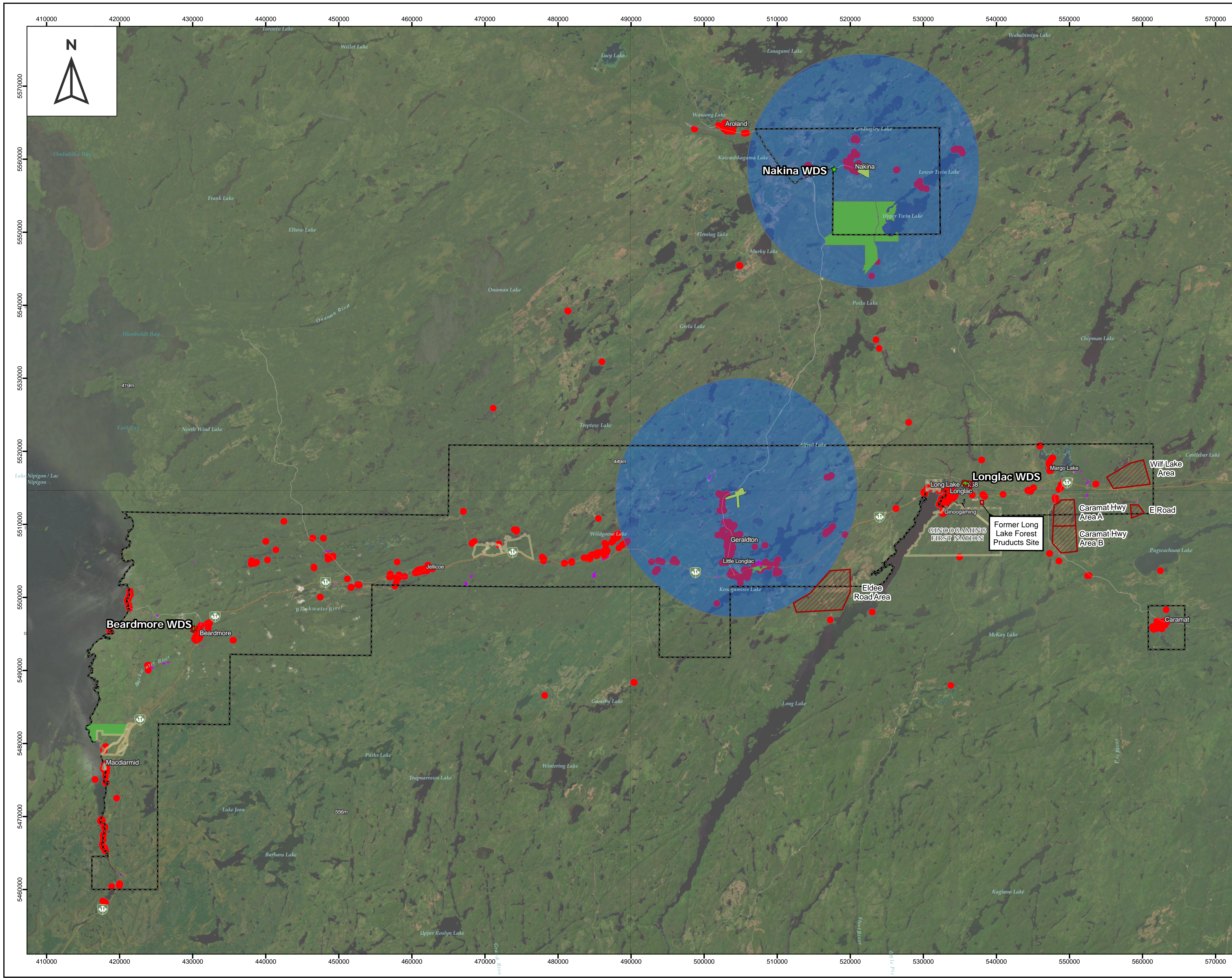
- Reduces carbon footprint of the overall WMS
- Expands life of the WMS selected
- Higher capital and operating costs

RECYCLING

COMPOSTING

NONE

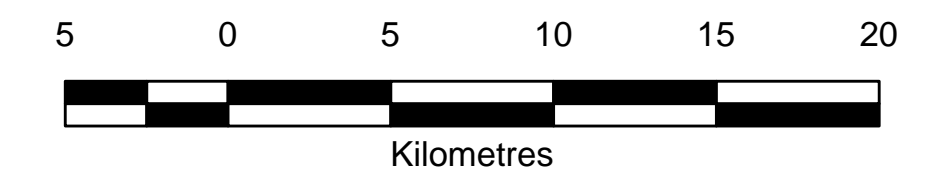
Materials/Items?
*Which materials/items would you like to see diverted or reused?
Write your suggestions on a sticky note, and place a dot on any suggestions you agree with.*



- LEGEND:**
- ★ Current Active Waste Disposal Sites
 - Potential Sites (Nov 2023)
 - First Nation Boundary
 - Pit/Quarry
 - Greenstone Municipal Boundary
 - Provincial Park Boundary
 - Airport 15 km Buffer
 - Airport Boundary
 - 500 m from Designated Residential Areas

- NOTES:**
1. All units are metric and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1983, Zone 16. Elevations are in metres above sea level (MSL).
 2. Imagery Source: ESRI Base

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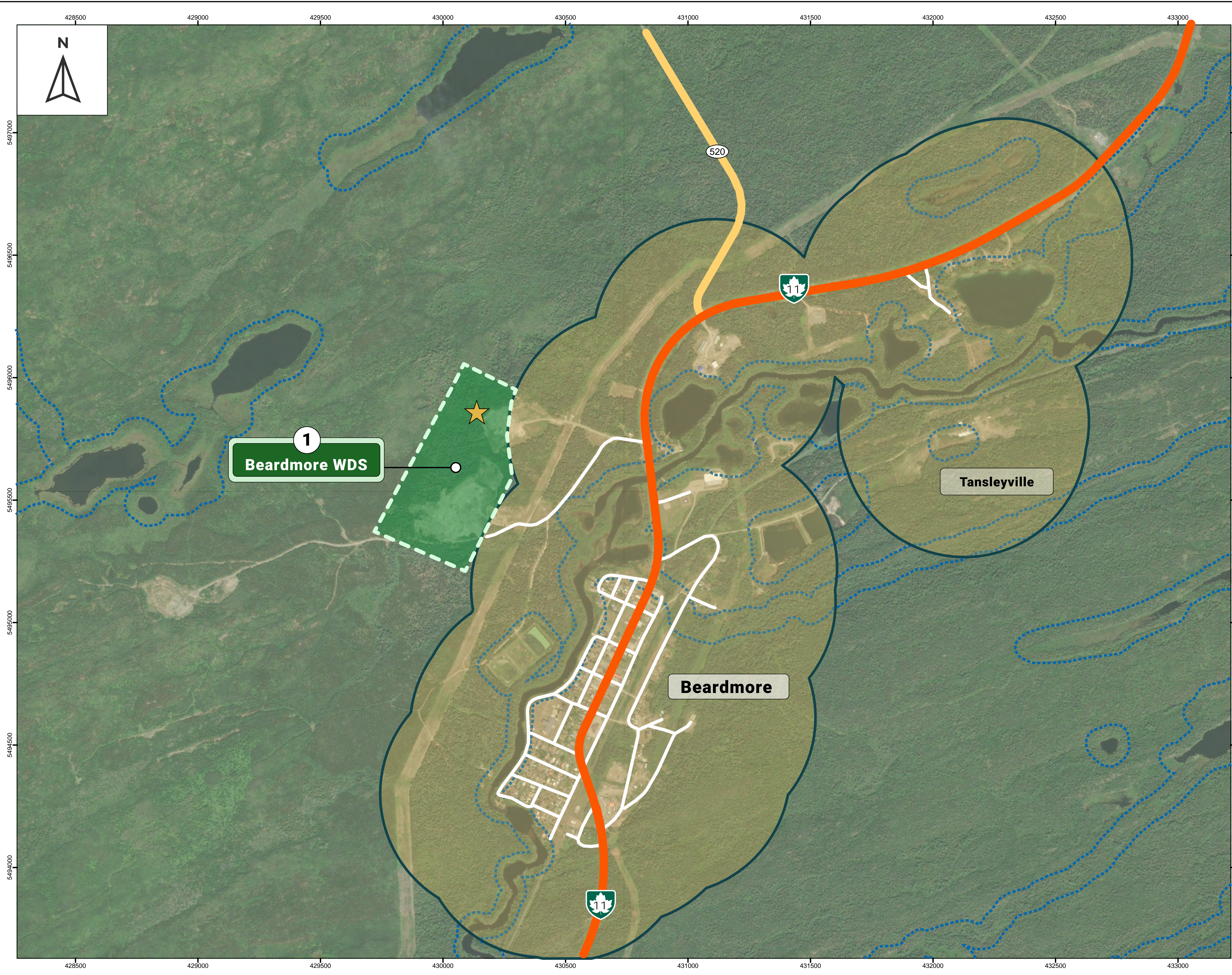


SCALE: 1:250,000 METRIC 24"x36"
SCALE: 1:500,000 METRIC 11"x17"

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REVISIONS / ISSUE				
KGS GROUP		MUNICIPALITY OF GREENSTONE		
GREENSTONE LANDFILL EA				
EXCLUSION MAPPING - OVERVIEW				
JANUARY 2024		FIGURE 01		REV: A

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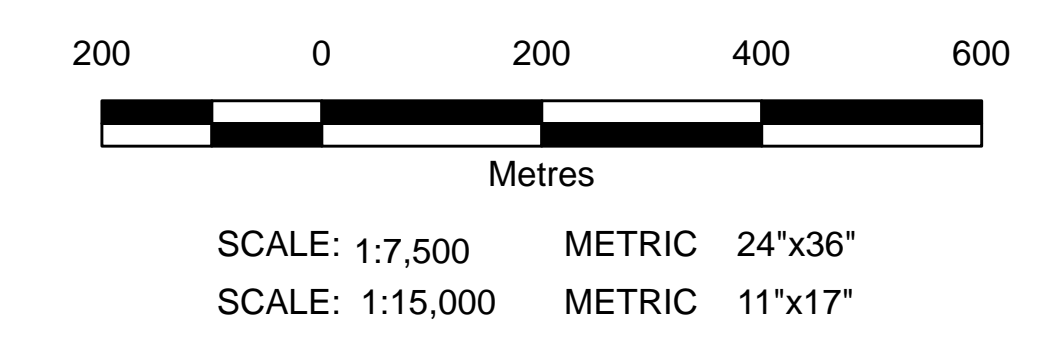
File Name: R:\Projects\2021\21-0862-001\FIG01.aprx Figure 02 - Beardmore WDS - 24x36
24 X36 PLOT SCALE 1:1



- LEGEND:**
- Current Active Waste Disposal Sites
 - Potential Sites (Nov 2023)
 - 500 m from Designated Residential Areas
 - Waterbody 50 Metre Buffer

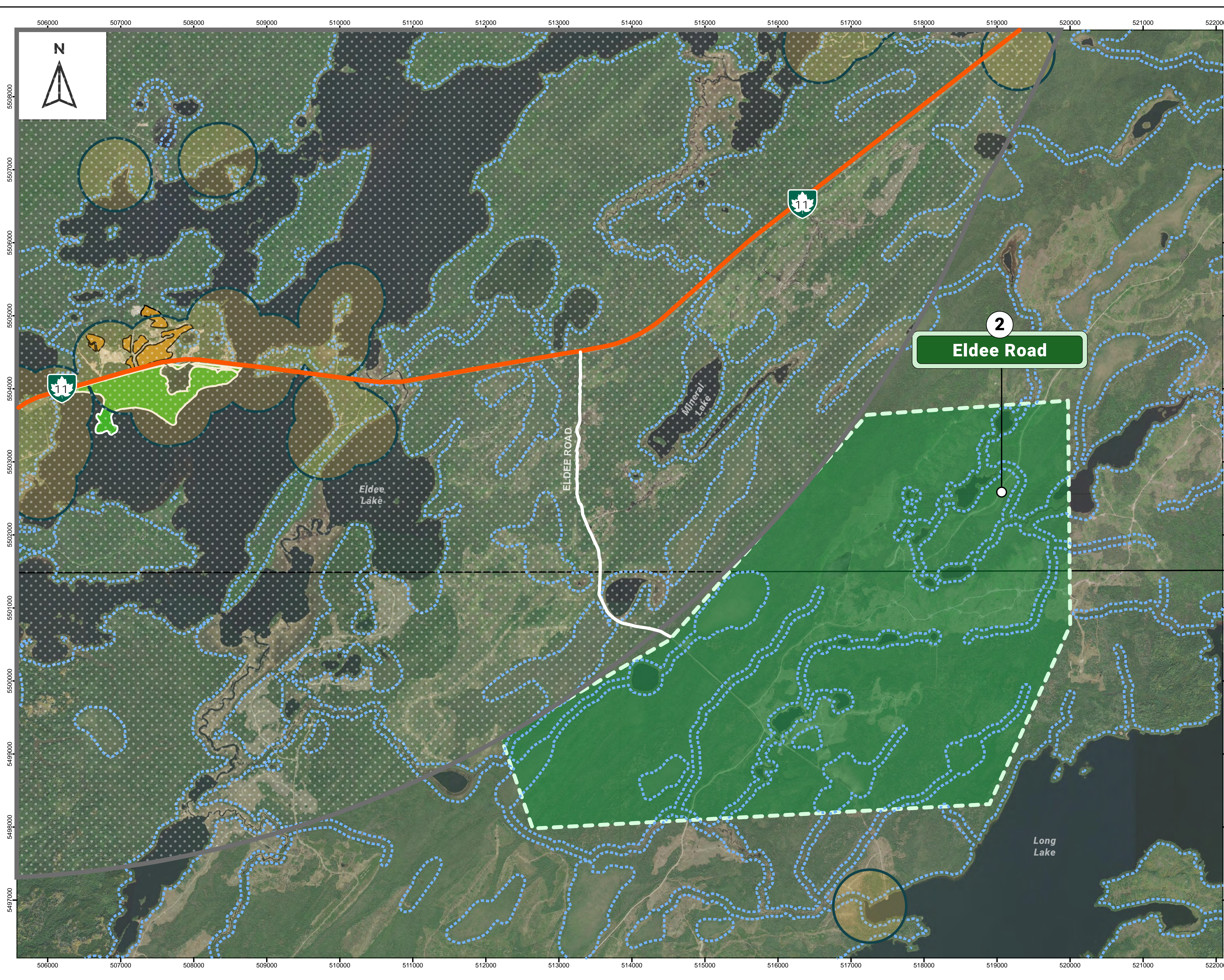
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 2. Imagery Source: ESRI Base

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EXCLUSION MAPPING BEARDMORE WDS SITE				
JANUARY 2024		FIGURE 02		REV: A

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 File Name: R:\Projects\2021\21-0862-001\Design\GIS\Data\ArcPro\21-0862-001_FIG01.aprx Figure 05 - Eldee - 24x36
 24"x36" PLOT SCALE 1:1

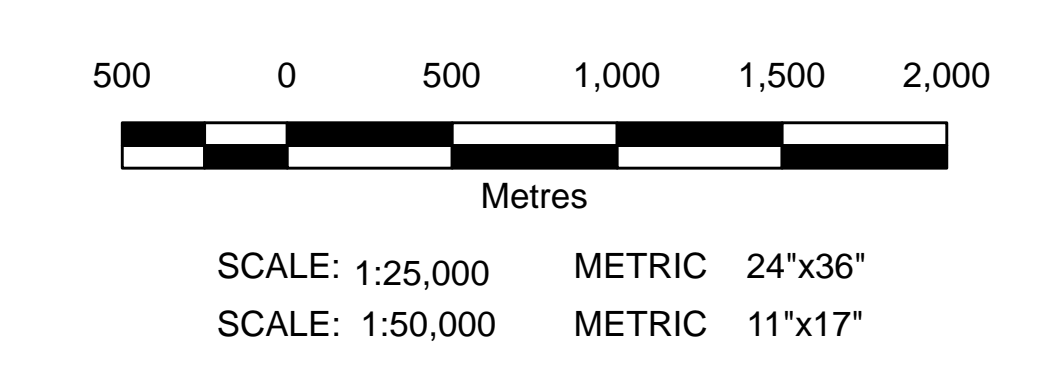


- LEGEND:**
- Current Active Waste Disposal Sites
 - Potential Sites (Nov 2023)
 - Municipality of Greenstone Boundary
 - 500 m from Designated Residential Areas
 - Waterbody 50 Metre Buffer
 - Airport Buffer
 - Quarry
 - Provincial Park
 - Railway

NOTES:

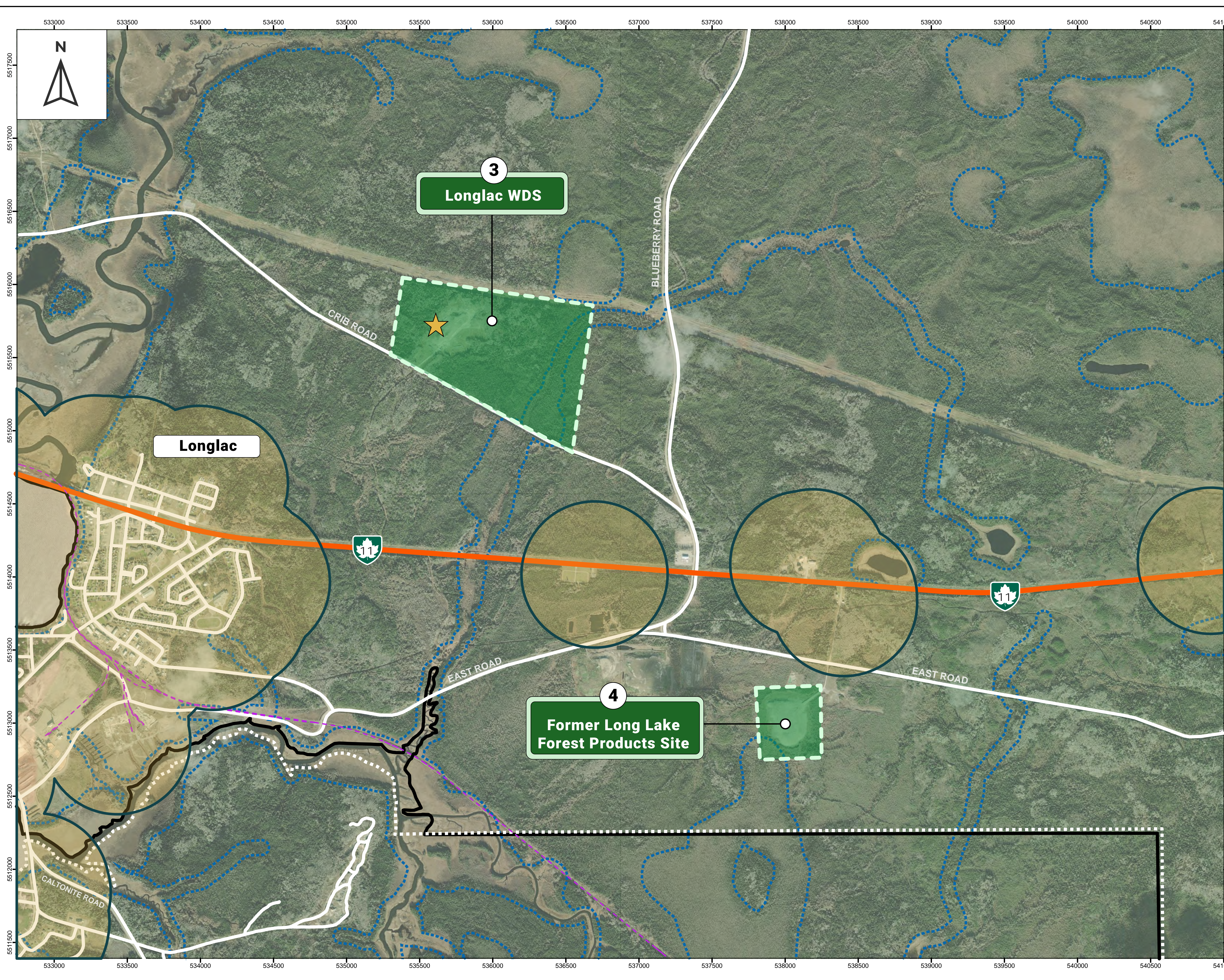
1. All units are metric and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1983, Zone 16. Elevations are in metres above sea level (MSL).
2. Imagery Source: ESRI Base

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GREENSTONE LANDFILL EA				
EXCLUSION MAPPING ELDEE ROAD AREA				
JANUARY 2024		FIGURE 05		REV: A

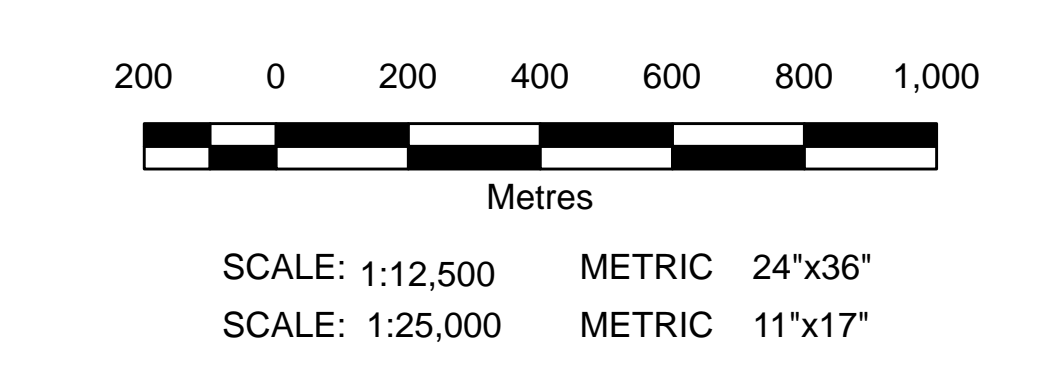
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 File Name: R:\Projects\2021\21-0862-001\FIG01.aprx Figure 03 - Longlac_WDS_LL_Forest_Product - 24x36
 24 X36 PLOT SCALE 1:1



- LEGEND:**
- Current Active Waste Disposal Sites
 - Potential Sites (Nov 2023)
 - Municipality of Greenstone Boundary
 - First Nation Boundary
 - 500 m from Designated Residential Areas
 - Waterbody 50 Metre Buffer
 - Railway

NOTES:
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 2. Imagery Source: ESRI Base

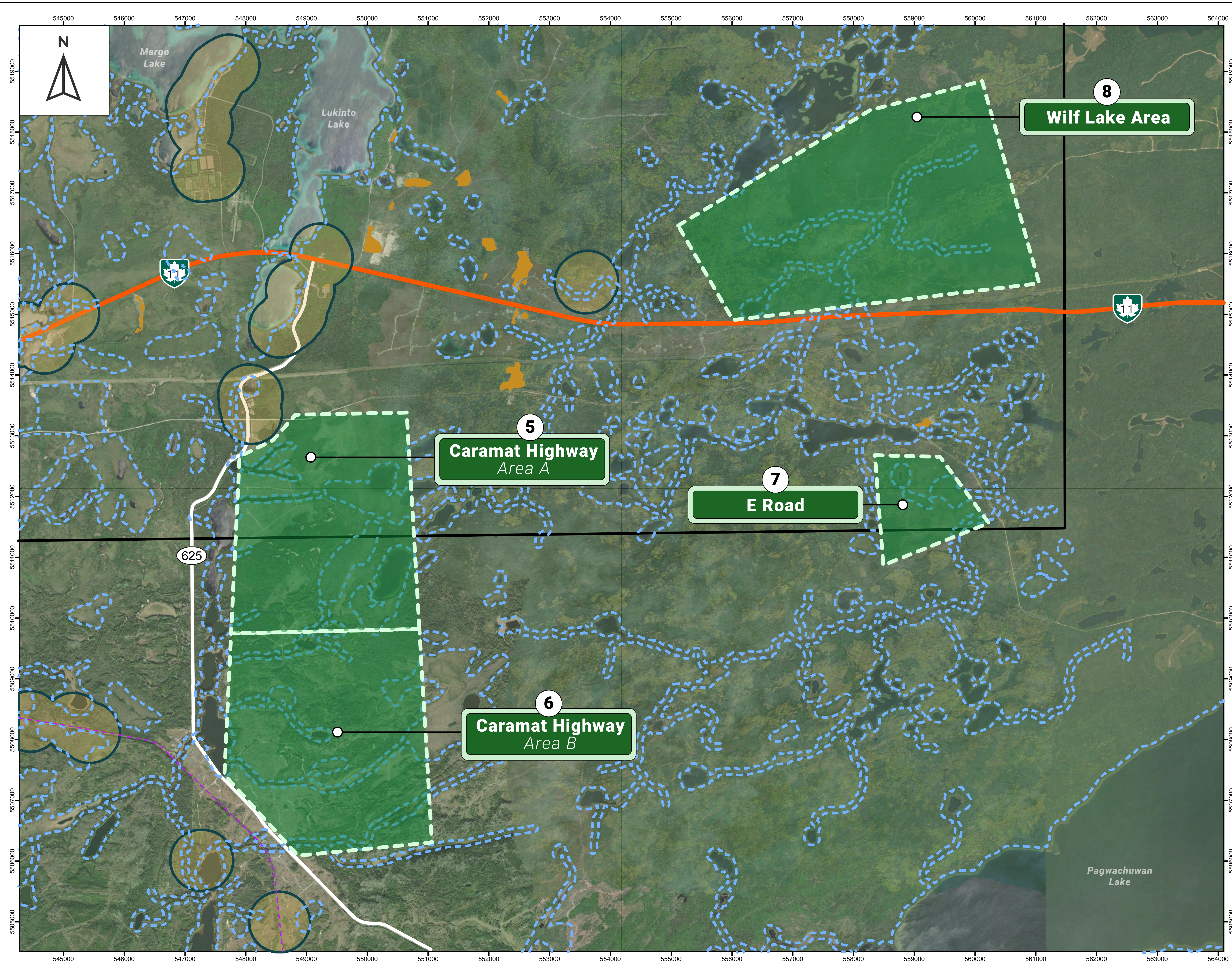
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GREENSTONE LANDFILL EA				
EXCLUSION MAPPING LONGLAC WDS SITE AND FORMER LONG LAKE FOREST PRODUCTS SITE				
JANUARY 2024		FIGURE 03		REV: A

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File Name: R:\Projects\2021\21-0862-001\Design\GIS\Data\ArcPro\21-0862-001_FIG01.aprx Figure 04 - 24x36
 24"x36" PLOT SCALE 1:1

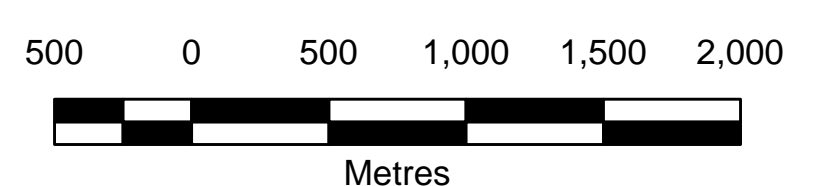


- LEGEND:**
- ★ Current Active Waste Disposal Sites
 - Potential Sites (Nov 2023)
 - Municipality of Greenstone Boundary
 - 500 m from Designated Residential Areas
 - Waterbody 50 Metre Buffer
 - Railway
 - Quarry

NOTES:

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GREENSTONE LANDFILL EA				
EXCLUSION MAPPING CARAMAT HIGHWAY AREA A AND B, WILF LAKE AREA, E ROAD SITE				
JANUARY 2024		FIGURE 04		REV: A