



THE LOUISA LAKE HYDROGRAPHIC NETWORK

ANALYSIS OF THE PROPOSED DAM CONSTRUCTION PROJECT

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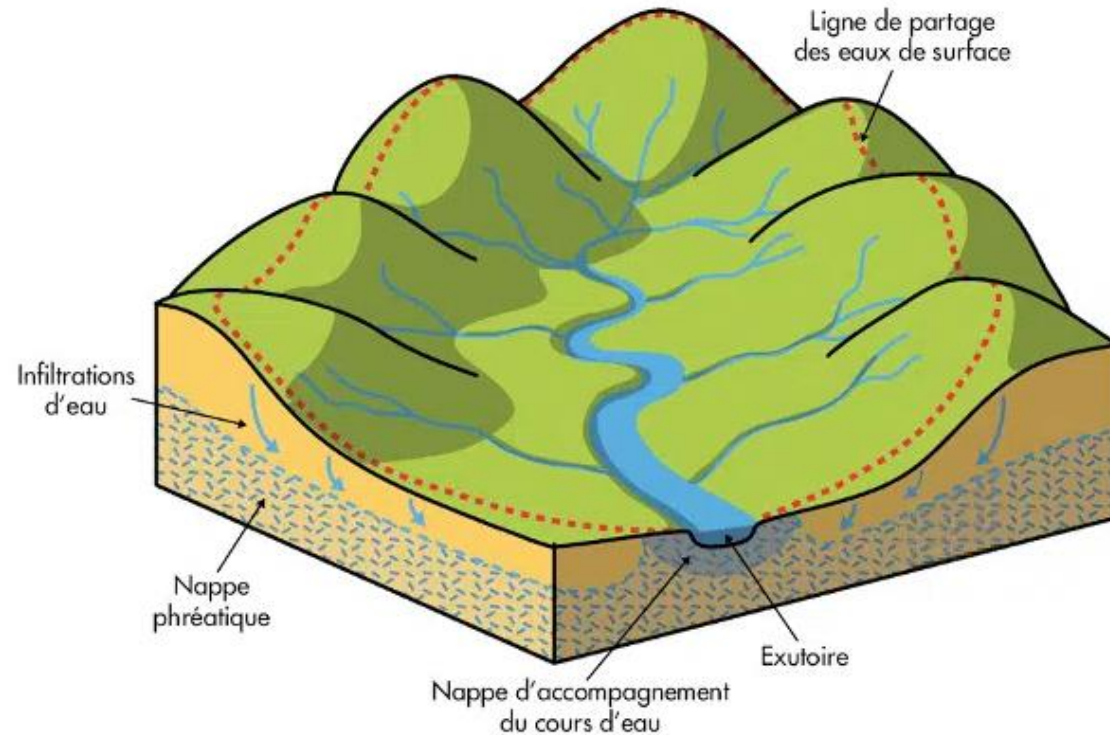
Topics Covered

- Overview of the hydrographic network
- The preservation of ecosystems
- The impact of climate change
- Louisa lake
- The feasibility analysis of a dam at Louisa lake
- Questions?



Overview of the hydrographic network

The watershed



Le bassin versant illustré. Crédit : Parc régional du Massif du Sud



Different watershed scales

Québec is made up of four major drainage basins (the St. Lawrence River, James Bay, Hudson Bay and Ungava Bay), representing territories of thousands of km². At smaller scales, a watershed can encompass the hydrographic network of a stream and represent an area of a few m².

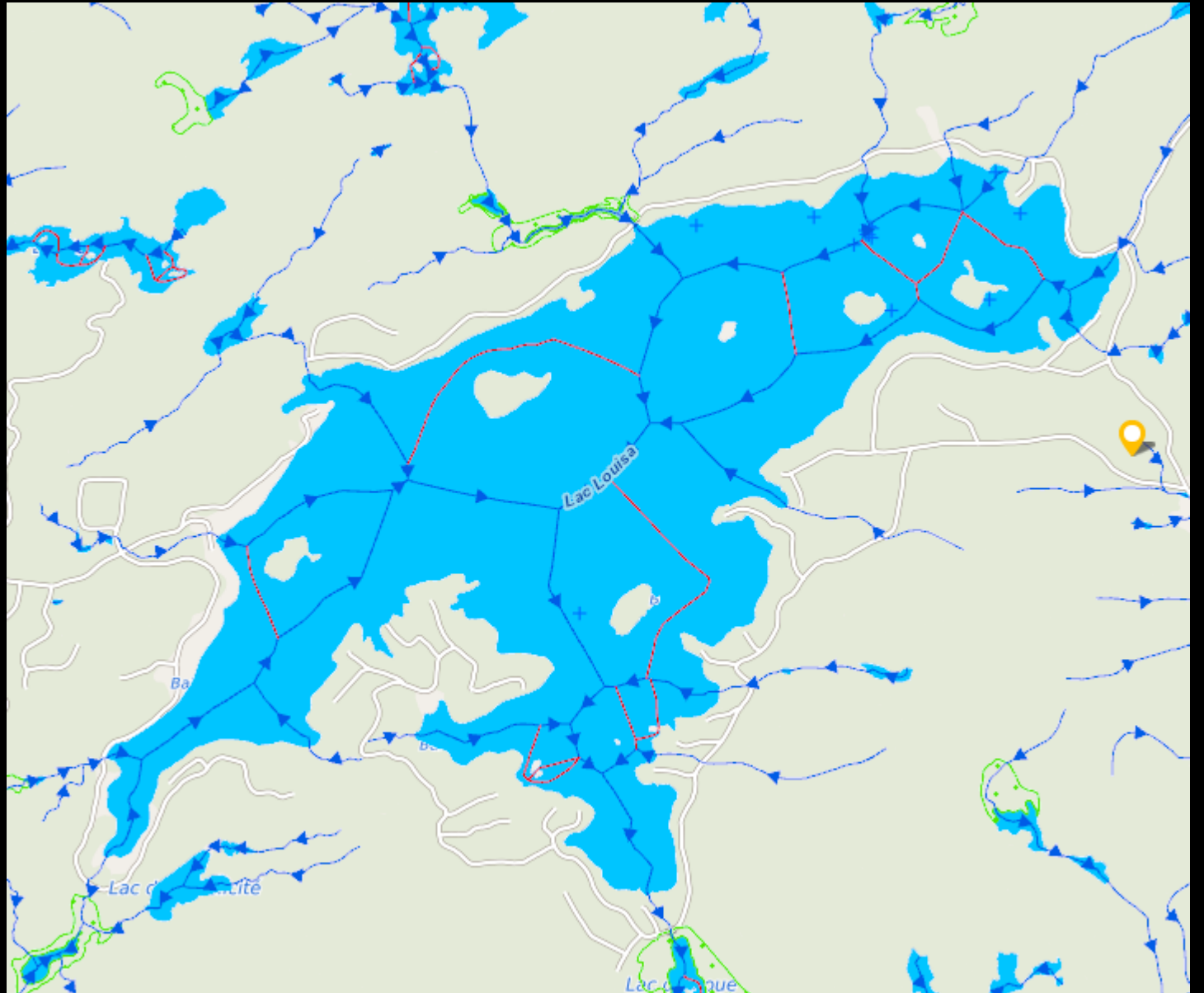
The territory of the MRC d'Argenteuil mainly belongs to the level 2 watersheds of the Rivière du Nord and the Rivière Rouge, which are part of the large Ottawa River watershed.

Lac Louisa is part of the Rivière du Nord sub-watershed.



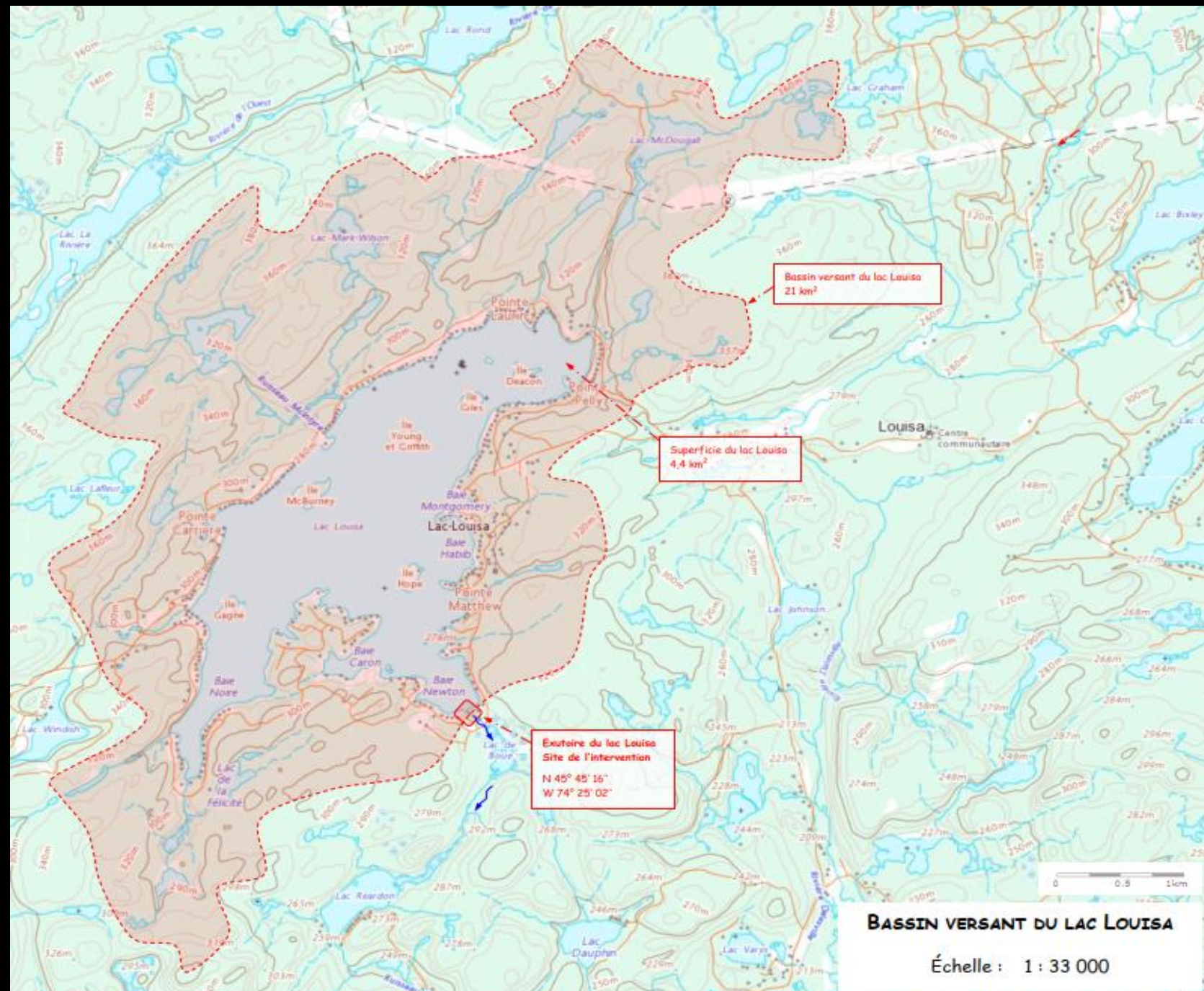
The Louisa lake Hydrographic Network

Source: Géobase of the Québec Hydrographic
Network (GRHQ)



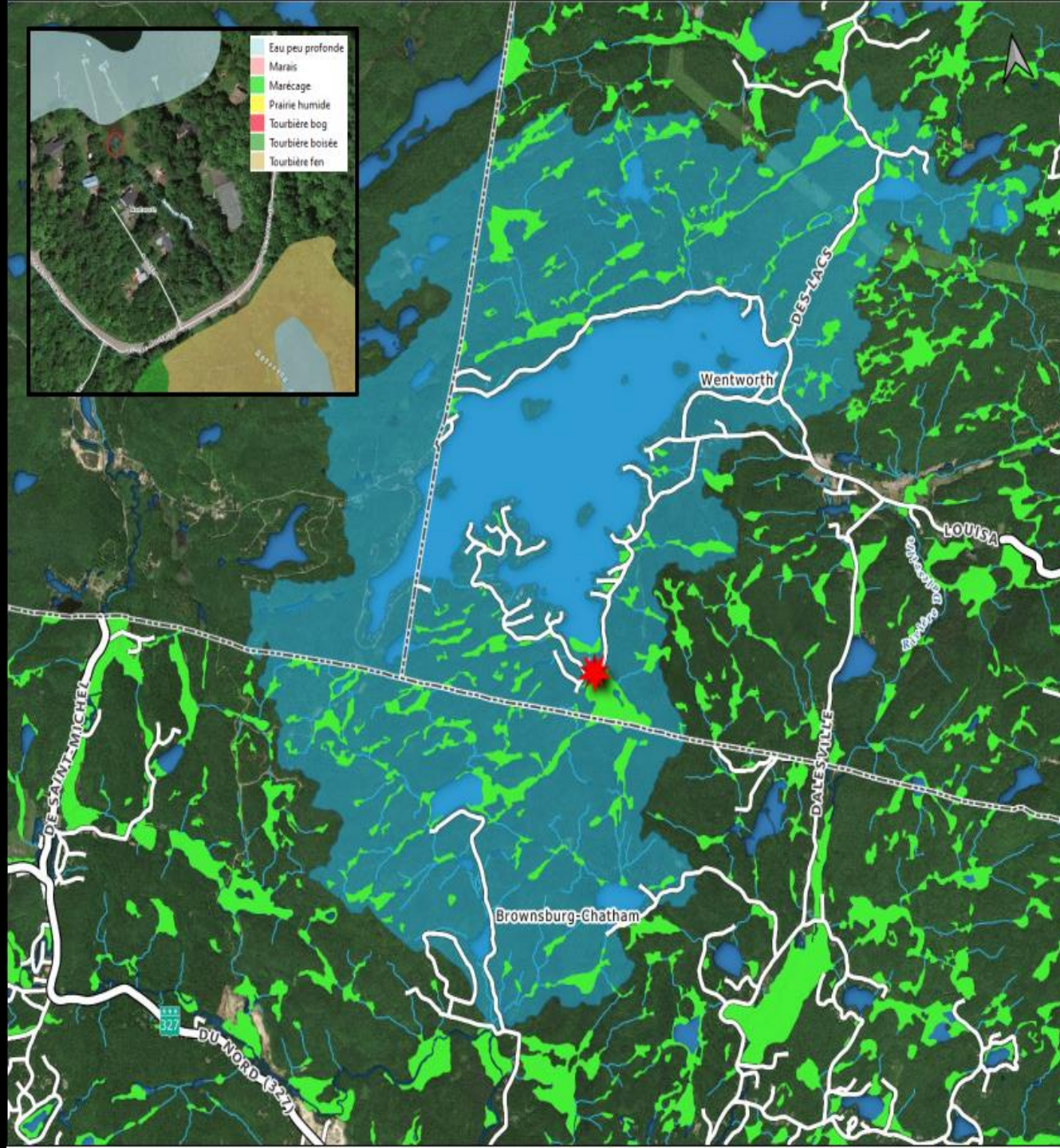


THE LOUISA LAKE WATERSHED





THE REARDON WATERSHED



CARTE 4
Bassin versant Reardon

- Bassin versant Reardon
- Milieux humides (CIC)
- Cours d'eau
- Étendue d'eau
- Cadre_Atlas_Mun_s
- Brownsburg-Chatham
- Wentworth

Projection :
Mercator transverse modifiée (MTM) zone 8
Datum Nord-Américain 1983 (NAD 83)

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Cartographie réalisée par le Service de génie et
des cours d'eau, MRC d'Argenteuil

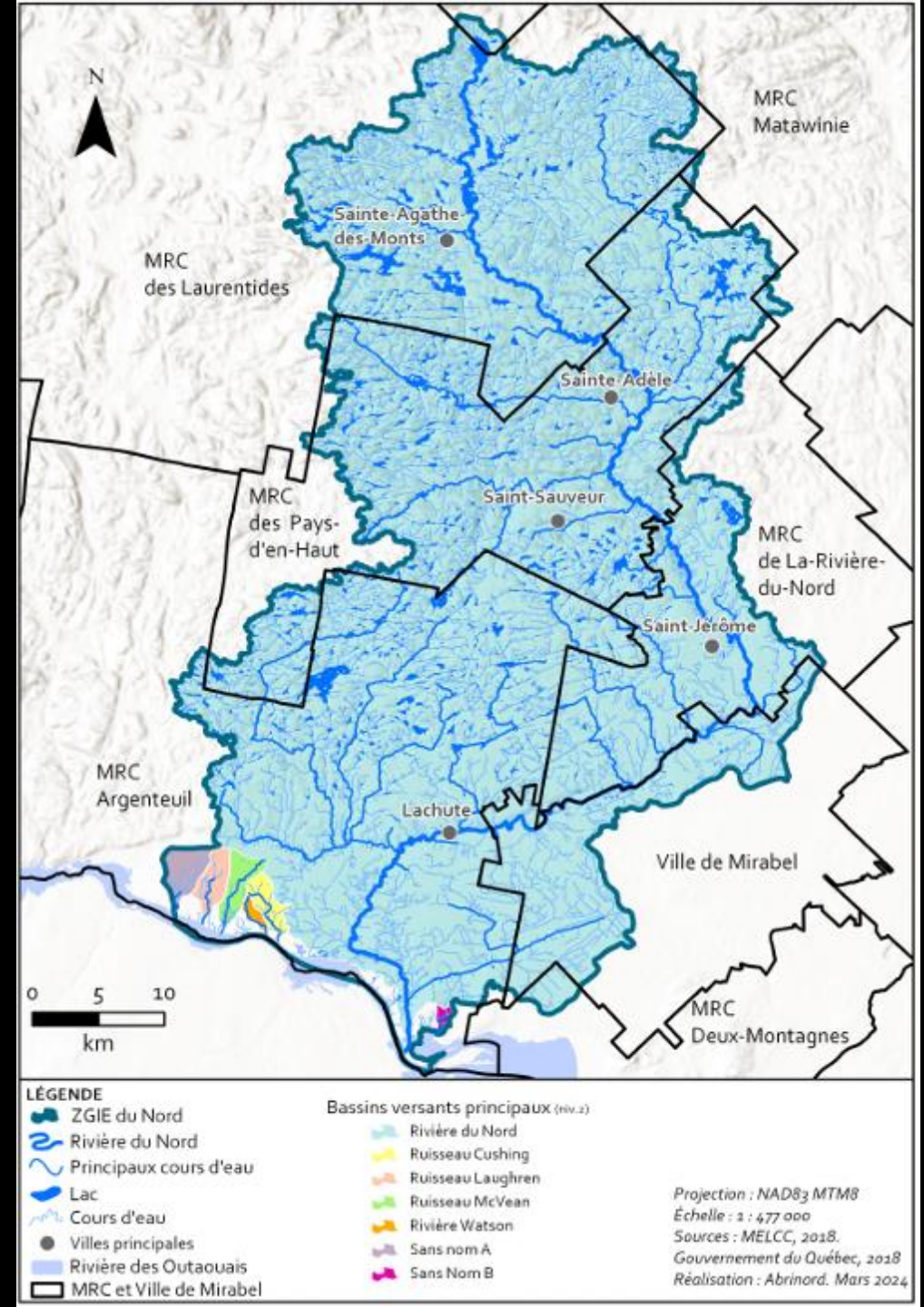
0 1 2 km



THE RIVIÈRE DU NORD WATERSHED

(INTEGRATED WATERSHED-
BASED WATER MANAGEMENT
ZONE)

SOURCE:
PDE 2024-2034 OF THE RIVIÈRE DU NORD OBV



THE PRESERVATION OF ECOSYSTEMS





Avoid, minimize, compensate

This is the approach used by analysts at the Ministry of the Environment, the Fight Against Climate Change, Wildlife and Parks (MELCCFP).

1. Avoid

The first step is to **avoid** the destruction of natural environments as much as possible. This means planning projects so as not to affect sensitive ecosystems. For example, choosing construction sites that do not interfere with wetlands or critical habitats is crucial.

2. Minimize

If destruction is unavoidable, the second step is to **minimize** the impacts. This may include measures such as reducing the area affected by the project, using less invasive construction techniques, or implementing sustainable management practices to reduce negative effects on the environment.

3. Compensate

Finally, when residual losses are unavoidable, the last step is to **compensate** for these losses through restoration actions or the creation of natural environments. This may involve restoring wetlands elsewhere or contributing to conservation programs aimed at improving biodiversity and ecosystem health.

This sequence is applied when evaluating projects



The PRMHH of the MRC d'Argenteuil

A tool to better understand the reality of an MRC's territory. An overview and a diagnosis.

A prioritization tool for the conservation of wetlands and water environments

Developed in collaboration with local stakeholders, the PRMHH is intended as a reflection document aimed at integrating the conservation of wetlands and water environments into an MRC's land-use planning. The objective of the PRMHH is to identify the environments to be conserved, restored and created. This plan involves drawing up an overview of the territory, establishing a diagnosis of wetlands and water environments, making conservation choices and putting in place an action plan to achieve the objectives set by the MELCCFP.

THE METHODOLOGY

Réseau écologique



Plan de développement des
transports (circuit de taxi-bus)

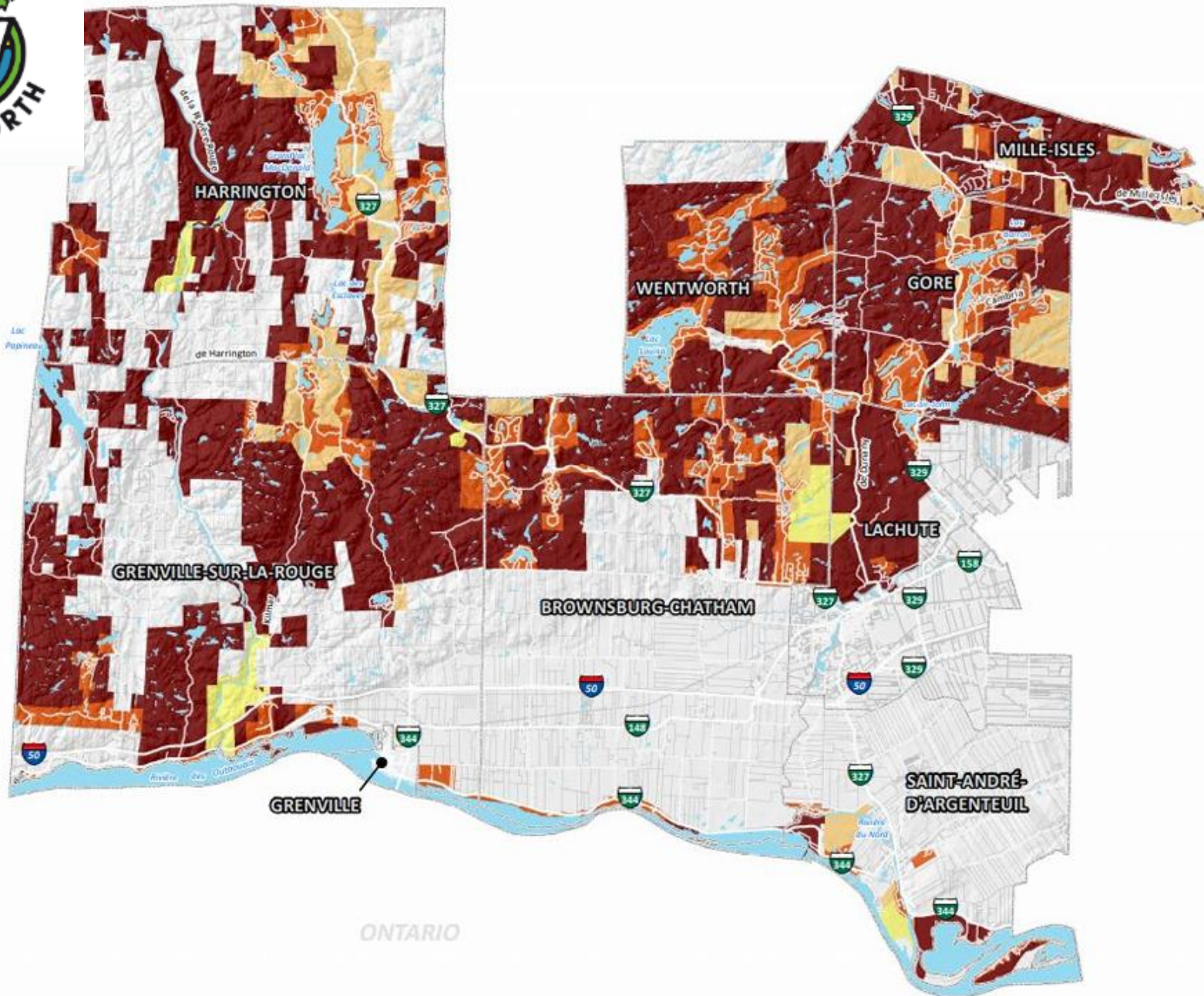


Vocation du territoire
(secteur développé)



Secteurs prioritaires
d'aménagement



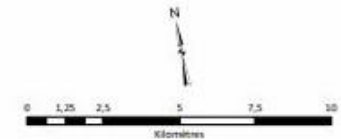


ANNEXE D - CARTE 4.6 SECTEURS PRIORITAIRES D'AMÉNAGEMENT HORS PÉRIMÈTRE D'URBANISATION MRC D'ARGENTEUIL

Types de secteurs*

- Secteur de restriction
- Secteur de consolidation
- Secteur de développement
- Secteur récréotouristique

Zone agricole, terres publiques,
affectations de conservation,
urbaines ou industrielles



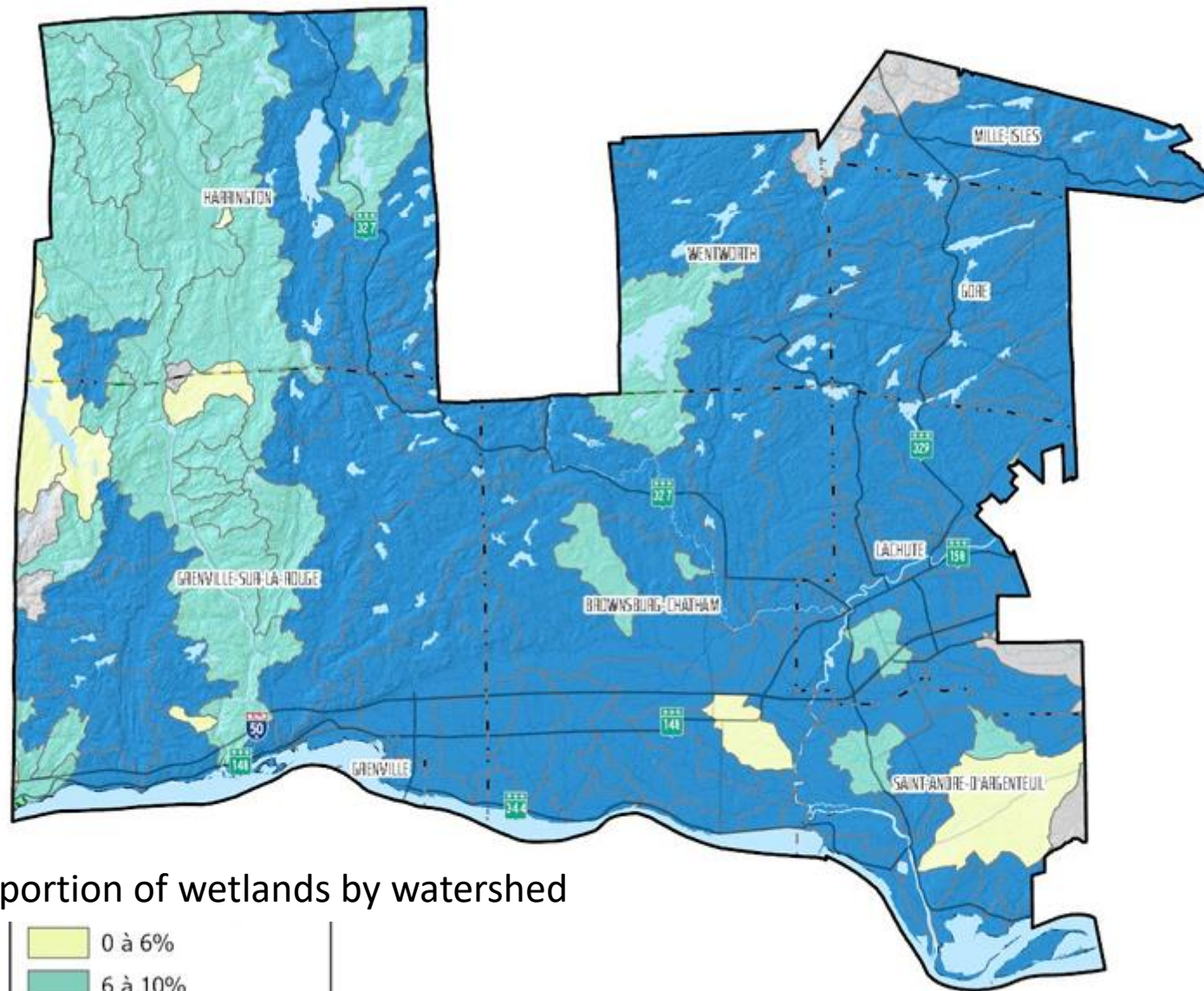
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Projection : Mercator transverse modifiée (MTM), Zone 8
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14 juin 2017

Ce plan fait partie intégrante du règlement no. 68-17-17

*Pour des fins de précisions et de calculs statistiques, la délimitation
des secteurs se base sur les matrices graphiques des municipalités,
qu'elles soient en territoire rénové ou non-rénové.

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Proportion of wetlands by watershed

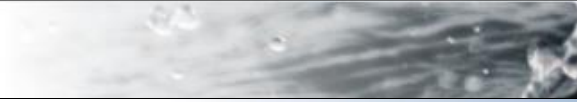


Source: PRMHH of the
MRC d'Argenteuil



The impacts of climate change

Floods and flooding



Low water levels and hydrological drought



Freeze and thaw



Extreme cold



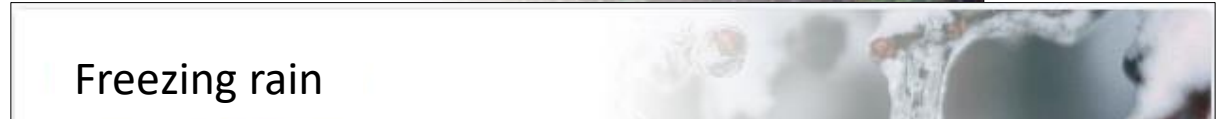
Snow cover



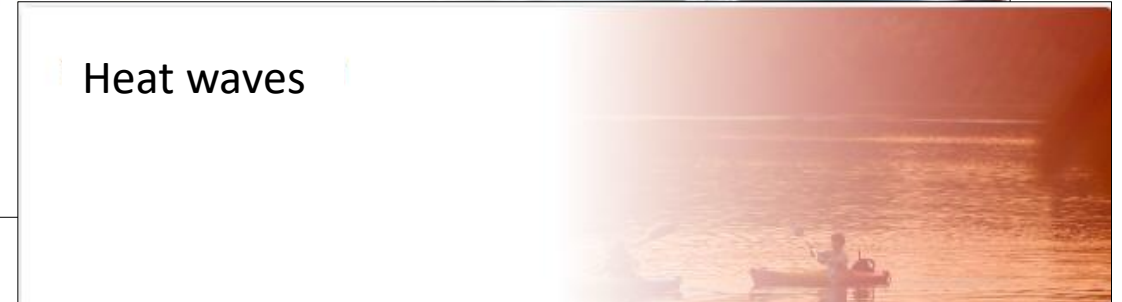
Extreme rains



Freezing rain



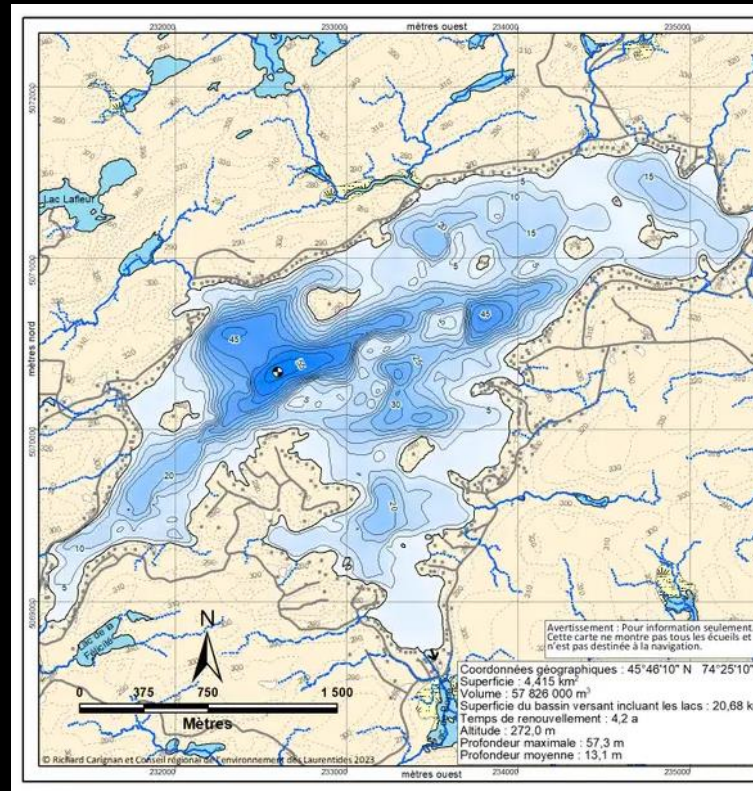
Heat waves



Source: Ouranos



Louisa Lake





The feasibility study for the development of a dam

Examples of applicable laws and regulations:

The LQE: *Environment Quality Act*

The REAFIE: *Regulation governing activities according to their environmental impact*

The RAMHHS: *Regulation respecting activities in wetlands, bodies of water and sensitive environments*

The RÉEIE: *Regulation respecting the environmental impact assessment and review*

The CEHQ : *the Québec Water Expertise Centre*

(Watercourses Act – Dam Safety Act and Regulation)

MRC = *Watercourse management – By-law 82-15 of the MRC d'Argenteuil*



History of steps taken to date

Years	Actions
2018	Approaches to the MRC and the CEHQ
2019	Preparation of plans and specifications
2021	Obtaining a ministerial authorization
2022	Decommissioning of the Lac Louisa “dam”
2023	Characterization of Louisa lake
2024	Updating of plans and specifications
2025	Consulting mandate for technical support



Cost estimate

Tasks	Costs
Conducting an impact study	Approximately 1 million dollars
Design of plans and specifications + documents for calls for tenders	Approximately \$40,000
Support for filing a ministerial authorization application	Approximately \$20,000
Compensation and authorization fees	Determined by the MELCCFP
Construction and supervision costs	Between \$500,000 and 1 million

QUESTION PERIOD





THANK YOU



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