

WORKPLAN 2025

MARCH 2025

RIVIÈRE-À-LA-TRUITE WATERSHED



SUMMARY

Climate model projections for Eastern Canada indicate an increase in both the frequency and magnitude of floods due to torrential downpours, rapid snowmelt, and the formation of ice jams. Traditional engineering solutions, such as dams and retaining walls, provide limited flexibility for adapting to these emerging climate realities. Moreover, they offer minimal environmental and social benefits.

The Rivière-à-la-Truite watershed, intersecting the municipality of Edmundston, has experienced recurrent flooding events in the Saint-Jacques district, causing significant property damage and mental distress among affected residents. Flood risk modeling highlights substantial inundation areas downstream, with estimated flood extents of 0.6 km² and 0.8 km² for 20-year and 100-year recurrence intervals, respectively.

Given these challenges, it is essential to explore nature-based solutions that enhance the watershed's resilience while delivering ecological co-benefits. This project seeks to assess and implement nature-based strategies that can effectively mitigate flood risks in the Rivière-à-la-Truite watershed, based on an in-depth study of the ecological and socio-economic contexts.

OBJECTIVES

The primary goal of this project is to identify, plan and implement appropriate nature-based flood mitigation strategies for the Rivière-à-la-Truite watershed. The specific objectives include:

- Identifying nature-based solutions that improve flood resilience while enhancing biodiversity and ecosystem services.
- Developing an implementation plan for integrating natural infrastructure into flood risk management.
- Engaging stakeholders, including local municipalities, environmental organizations, and Indigenous communities, in the planning process.
- Evaluating the potential for long-term sustainability and scalability of the proposed strategies.

ACTIVITIES

1

The activities for year 2025 will build upon previous work done in relation to the project, such as:

- Planning Natural and Nature-Based Management Strategy for Flood Risk Mitigation (Study, 2023)
- Channel and Floodplain Restoration on Demers Street (2024)

Channel and Floodplain Restoration

This project will focus on improving the function and stability of Rivière à la Truite by rehabilitating its riverbank and safeguarding nearby infrastructure downstream of the restoration work done in 2024. The rehabilitation will involve constructing a stable riverbank with a revised radius of curvature to reduce erosion forces. A terracing approach will be applied, allowing the river channel to adapt to fluctuating water levels, dissipate flow energy, and mitigate rapid flooding.

The terraced design will enable the river to occupy different channel widths at various flow stages, promoting resilience against high-water events while maintaining natural hydrological processes.

To further stabilize the system, a grade control structure will be installed. This will serve two key functions: (1) protecting an exposed pipeline on the channel bed by preventing scour and loss of supporting materials, and (2) maintaining the riverbed elevation and gradient to limit excessive sediment transport and control back flooding risks. These integrated measures will enhance the long-term stability and ecological function of the river while reducing risks to infrastructure.

2

Sustainable Forest Road Management

This activity focuses on coordinating stakeholders and planning the implementation of two key interventions to improve forest road management and mitigate flood risks:

1. **Deactivation/Rehabilitation of Inactive Forest Roads:** Restore inactive forest roads to re-establish natural water flows, enhance infiltration, reduce downstream flood risks, and minimize erosion and sediment transport into waterways. This intervention also supports ecosystem regeneration by restoring soil and natural vegetation.
2. **Restoration of Active Forest Roads Using Sustainable Drainage Systems (SuDS) :** Maintain road functionality while minimizing hydrological and environmental impacts. Measures include limiting erosion and sedimentation, promoting natural water infiltration, and protecting water quality to balance ecological and operational needs.

Stakeholders Involved:

- Provincial forestry and natural resource departments (Québec & New Brunswick)
- Integrated Resource Management Tables (GIRT - Québec)
- Office de Vente des produits forestiers du Madawaska
- Forestry industry (Acadian Timber & Bégin Bégin)
- ATV associations
- Local contractors
- Forest road managers
- University of Moncton Forestry School

The primary goal is to build consensus, identify risks and priorities and identify pilot sites for implementing these interventions in the coming years.

3

Public Consultation for a Community Sponge Park

The project aims to assess the feasibility and define the criteria for creating a multifunctional sponge park in the Saint-Jacques district of Edmundston. This initiative seeks to improve stormwater management, reduce flood risks, and enhance environmental resilience to climate change. Through a co-creation approach, the project will identify the most suitable and sustainable solutions tailored to the territory's specific challenges. The study will determine whether the project is viable and establish its implementation framework.

Key Activities:

- **Feasibility & Implementation Criteria** – Assess technical, social, economic, and environmental factors to ensure the project's long-term success.
- **Stakeholder Co-Creation Process** – Develop an inclusive engagement strategy integrating equity, accessibility, and participatory decision-making.
- **Hydrological and Territorial Analysis** – Ensure the project integrates with the local watershed system and effectively manages stormwater.
- **Review of Best Practices** – Identify optimal sponge park solutions based on literature and successful case studies.
- **Structured Consultation Process** – Organize iterative consultations with experts, citizens, and stakeholders to build consensus on proposed solutions.
- **Development of a Methodological Approach** – Define a structured process from planning to potential implementation.

4

Ecological Unused Drinking Water Lagoons Rehabilitation

This project aims to assess the feasibility, design, and plan the ecological rehabilitation of a 3-hectare site along the Rivière-à-la-Truite in Edmundston. The site currently consists of unused drinking water basins that hinder river mobility and negatively impact riparian habitats.

A key activity for this project will be to conduct an Environmental Impact Assessment (EIA) to ensure that the project is designed with minimal negative environmental effects while maximizing sustainability and compliance with regulations.

During the 2025 summer, some key data will be gathered on the project site, such as:

- Soil Sampling
- Climate & Weather Patterns
- Hydro morphology
- Surface Water Hydrology and Water Quality
- Riparian Zones Condition
- Invasive Species and Species at Risk
- Wildlife Surveys
- Aquatic Habitat Quality