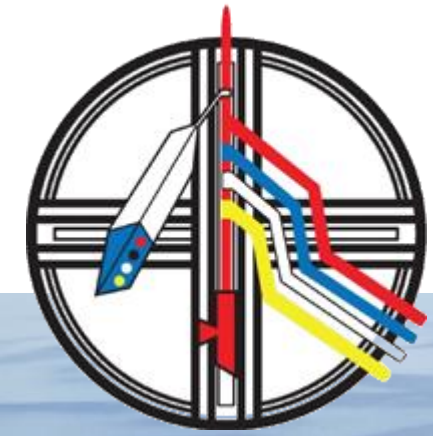


WESTERN CANADA WATER – 2025 EXECPTIONAL PROJECT AWARD

**FROG LAKE CREE NATION – WATER SYSTEM PROJECT**

**RAW WATER INTAKE**



# Frog Lake Cree Nation – Water Systems Project

M2 Engineering, Frog Lake Cree Nation, and Indigenous Services Canada have been working together to plan and design a potable water supply system for the community since 2019. The project evolved since its first conception and ultimately resulted in a new water supply system for the community inclusive of:

- New Raw Water Supply Systems
- New Water Treatment Plant
- 11 km of potable water transmission pipeline
- Upgrades to existing water treatment plant



Pipeline alignment assessment



Indigenous Services  
Canada



Sage Frog Lake  
Development Advisory Corp.



CHANDOS

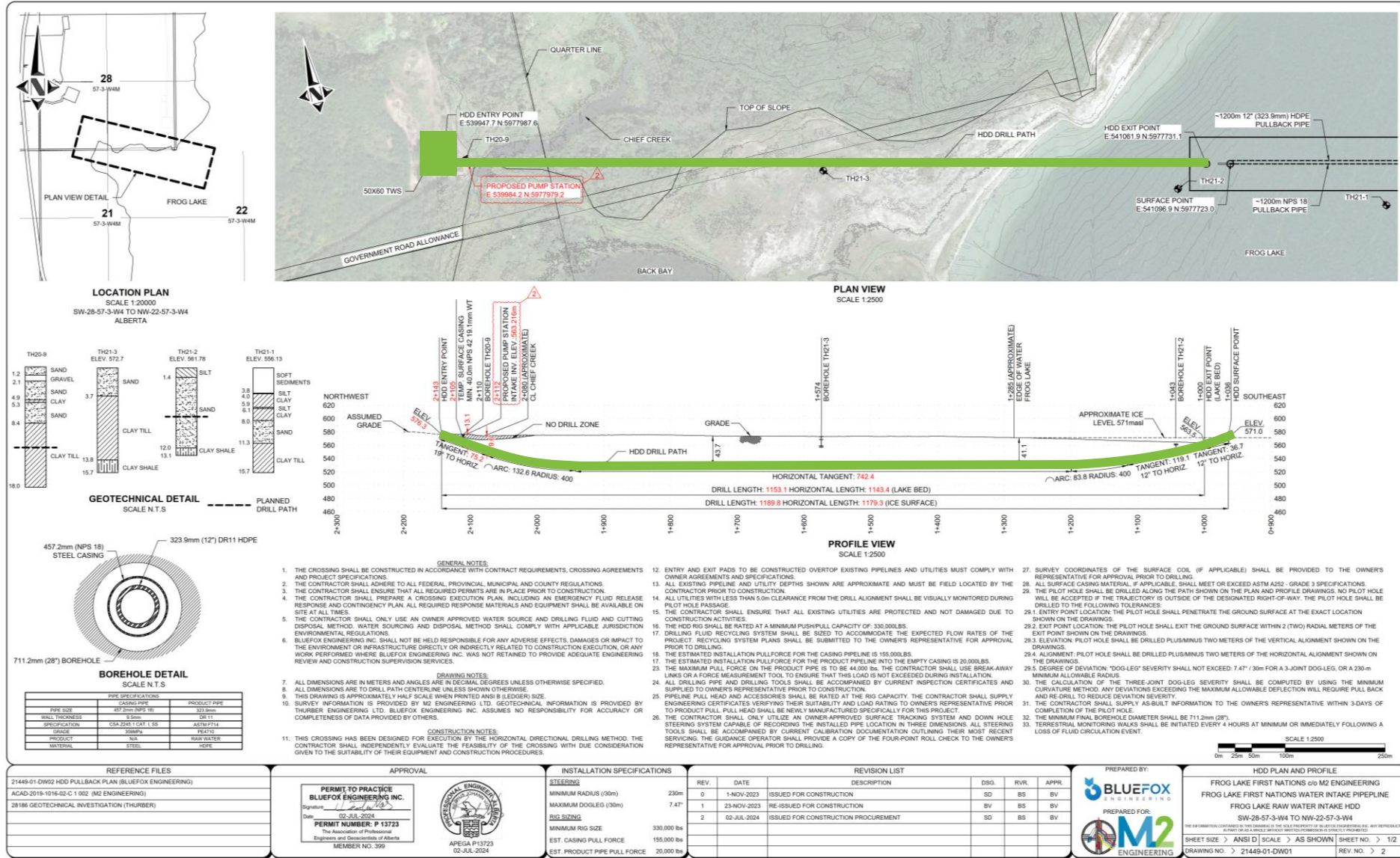


# Frog Lake Cree Nation – Water Supply System



# Frog Lake Cree Nation – Raw Water Supply Systems

The raw water supply systems within the Water Supply Project are all encompassing and include: a raw water intake, raw water intake pump station, raw water transmission pipeline, raw water storage ponds, and raw water transfer pump station.



# Raw Water Intake Planning & Design Project Challenges

The planning and design team noted several project challenges during the planning and design stage of the raw water intake project.

This led us to incorporate construction management and early contractor involvement into the procurement process.

## **Key objectives of the construction management contract approach included:**

- Maximizing local engagement
- Working with limited workspace
- Managing winter construction
- Managing time constraints
- Ice road / platform planning & construction
- Managing deep excavation adjacent to lake
- Challenging geotechnical conditions
- Sand seams
- Environmental coordination
- Managing multi-disciplinary collaboration with layered inputs

# Team Collaboration

In early stages of design, the project team was aware of the challenges associated with constructing the new 1,100 meter raw water intake pipe into Frog Lake.

This led the team to building a team of experts to execute the project collaboratively under a Construction Management contract.

The team assembled started collaboration during pre-construction and has continued the team environment throughout construction.

	<b>Owner:</b> Frog Lake Cree Nation
 Indigenous Services Canada	<b>Funding Agency:</b> Indigenous Services Canada
	<b>Engineering Consultant:</b> M2 Engineering
 Sage Frog Lake Development Advisory Corp.	<b>Owner's Advisory Group:</b> Sage-Frog Lake Development Advisory Group
	<b>Owner's Project Manager:</b> JV Driver Group
 CHANDOS	<b>General Contractor:</b> Chandos

# Groundbreaking Ceremony



**M2**  
ENGINEERING



 **CHANDOS**

**Frog Lake Cree Nation  
Water System Project**

Anticipated Completion  
May 2027

Emergency Contacts:  
Superintendent (587-336-9228)  
Project Manager (780-717-6356)  
Senior Superintendent (780-619-9263)  
Frog Lake Emergency Services (780-943-3473)

 Indigenous Services  
Canada

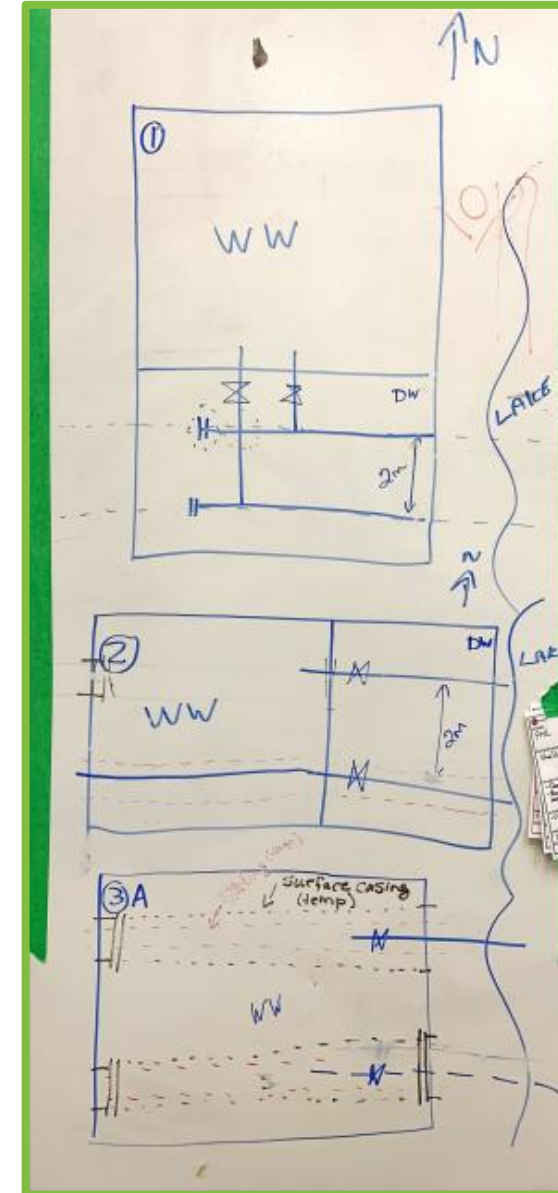
Services aux  
Autochtones Canada

# Pre-Construction: Project Values Alignment



# Pre-Construction Successes

- Raw water intake constructability review & optimization
- Raw water intake pump station shoring design
- Establishing an option(s) for future raw water intake twinning
- Planning and designing of surface casings and pipe casing
- Establishing the ability to horizontal directional drill through concrete secant pile wall to accommodate tight drilling space and geotechnical conditions
- Established drilling plan to protect the environment
- Preparation of ice road design
- Establishing project risk register
- Establishing local engagement plan to provide job opportunities, learning, and economic benefits to local Frog Lake companies and facilities.





Secant Pile Wall Construction  
Prior to HDD of Intake

# 2,000-meter Ice Road & Working Platform



# Horizontal Directional Drilling Site



# 24-7 HDD Operations



# 24-7 HDD Operations



# 24-7 HDD Operations



# Construction Challenges

- Planning ice road platforms and work areas
- Ice road construction: late start due to weather conditions
- Continual monitoring of ice conditions
- Deterioration of ice conditions during warmer weather
- Team productivity during 24-7 operations and cold weather
- HDD through concrete secant pile wall & accuracy of drilling location
- Drilling equipment failure / maintenance





Successful  
Raw Water Intake Install



Excavation of Secant Pile Wall,  
Surface Casing Exposure



# Construction Successes – from Team Members

- Project execution was meticulous and well planned  
– **Chandos**
- The project team was full of years of experience, brought together to forecast the execution and challenges of each trade/vendor  
– **Chandos**
- Unpredictable weather restraints were mitigated with precise and targeted planning  
– **Chandos**
- No environmental incidents throughout the project  
– **Chandos**
- Constant adaptation and team support  
– **Chandos**
- Successful collaboration and communication between all parties  
– **M2 Engineering**



# Local Content Success

The contractor team partnered with the **Frog Lake Careers Centre** to support the construction efforts and local labour involvement throughout construction of the raw water intake

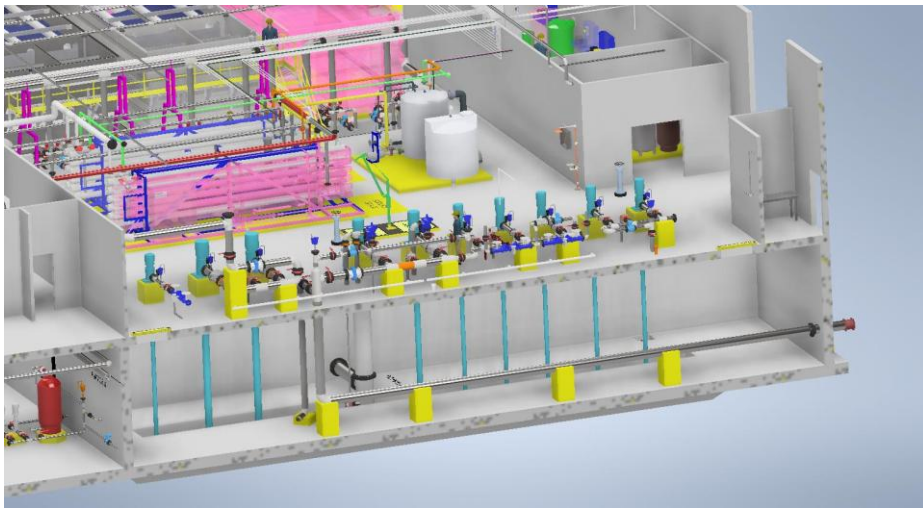
*Approximately \$2,150,000 was spent during the raw water intake project towards local labour, materials, and businesses.*

Arc Trenchless (HDD Subcontractor)	\$1,250,000  Approx. 36% of contract value
Red Deer Piling (Red Deer Piling)	\$400,000  Approx. 33% of contract value
Gabbez (Earthworks)	\$80,000  - Equipment operators - Laborers
Chandos (General Contractor)	\$ 420,000  - Site Security - Fuel - Catering - Travel centre purchases - Waste management - Port-a-potty

# Frog Lake Cree Nation Raw Water Intake Project

The raw water intake was successfully completed in March 2025. The planning, design, and construction of the intake structure came with several technical challenges along the way.

A strong, knowledgeable, and collaborative team led this project to success. The team met on weekends and evenings as needed to keep the project moving and showed continued support and dedication to making this a success for Frog Lake. This is truly an exceptional project.



The remaining portions of the Frog Lake Water Supply Project are still in construction and commissioning is scheduled for spring 2027.



Indigenous Services  
Canada



Sage Frog Lake  
Development Advisory Corp.



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