



Erosion and Sediment Control Plan
for the
**Fort Providence / Kakisa Transmission
Line Project**

**Government of Northwest Territories
Department of Infrastructure**



Government of
Northwest Territories

Document Maintenance and Control

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Erosion and Sediment Control Plan Document History

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1 INTRODUCTION

This Erosion and Sediment Control Plan (ESCP) was developed by the Government of Northwest Territories Department of Infrastructure (GNWT-INF) and contractor for the Fort Providence / Kakisa Transmission Line Project (Project). The Project involves constructing a 170-km transmission line to connect the communities of Fort Providence, Kakisa, and the Dory Point area to the Taltson Hydroelectric system at an interconnection point near Hay River.

As required by the Mackenzie Valley Land and Water Board, the purpose of the ESCP is to inform all site personnel on erosion and sediment control measures for all Project-related activities to reduce potential effects on air, water quality, and wildlife, including fish and fish habitat. The ESCP also provides procedures on monitoring and inspection of erosion and sediment control mitigation measures and to control, respond to, and dispose of sediment and turbid water during the construction.

All persons involved with the Project will read and be familiar with the ESCP. The site manager will be responsible for ensuring erosion and sediment control measures are in place according to the ESCP. The environmental monitor will monitor and inspect erosion and sediment control mitigation measures and report to the site manager.

1.1 Project Contacts

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1.2 Roles and Responsibilities

The GNWT-INF is ultimately responsible for the success of this plan and approves all relevant policies and documents, auditing, action planning, and the verification process. The contractor is responsible for the implementation of this plan including overall management of the plan and internal reporting.

The contractor is responsible for the implementation of this plan, including ensuring compliance and adaptive management.

This ESCP is to be used in conjunction with the following Project references:

- Spill Contingency Plan
- Waste Management Plan

1.3 Legislation and Guidelines

Territorial and federal legislation that apply to the ESCP objectives for the Project (applicable environmental legislation and guidelines) include:

- Government of Northwest Territories, Department of Transportation Erosion and Sediment Control Manual (GNWT 2016)
- Fisheries and Oceans Canada Measures to Protect Fish and Fish Habitat (DFO 2023)
- Federal *Fisheries Act* and regulations
- Federal *Mackenzie Valley Resource Management Act* and regulations
- Northwest Territories *Waters Act* and regulations

2 PROJECT DETAILS

The Project will consist of a new sub-transmission line extending from a new switching station located at the junction of Highway 2 and 5 south of Hay River. It will extend along Highway 2 south to Enterprise, then follow Highway 1 to the Kakisa highway junction. A new substation will be built at Kakisa junction, and a new distribution line will extend along Highway 1 and 3 to Dory Point. The distribution line will then cross the Mackenzie River via a cable tray on the underside of the Deh Cho Bridge. The distribution line will terminate at a new substation in Fort Providence.

The Project will be built within the existing highway rights-of-way (ROWs), which has buffer on either side of the highway centerline. This existing road allowance is considered to be a sufficient width for construction, although minimal clearing and brushing may be required at certain locations. Wood pole structures will be used and typical pole foundation will involve augured hole, crib, or culvert arrangement with rock fill. Pole anchoring will be used as necessary (e.g., deflection points) by guy wire and helix screw, log, or grouted rock anchors.

It is anticipated there will be limited interactions with fish bearing or potential fish-bearing waterbodies and watercourses including lakes, streams, and rivers. Conductors will span over watercourses or will be strung under existing bridges. Pole foundations will be above the high-water mark of any watercourse wherever possible. Construction laydown and staging areas are anticipated to be located within existing GNWT-INF quarries or laydown areas.

The Project map is included in Appendix A.

3 EROSION AND SEDIMENT CONTROL MANAGEMENT

3.1 Erosion and Sediment Potential and Management

Ensuring proper erosion and sediment control will help stabilize the terrain and ensure the safety of nearby natural habitats. Some of the proposed activities that could potentially cause impacts (erosion and/or sedimentation) when in sensitive areas, and how they may be managed through mitigation measures are presented in the remaining subsections.

Table 1: Erosion and Sediment Potential and Mitigation Measures

Proposed Works	Potential Impacts	Mitigation Measures ^(a)
Operation of heavy equipment (e.g., drilling, excavating) in the ROW	sedimentation from exposed earthworks and operation of equipment	<ul style="list-style-type: none"> • silt fencing will be installed around perimeter of working area if there is a risk of erosion • silt fencing will be installed at the downstream toe of the stockpile, if less than 10 m from a watercourse, to prevent dust and erosion • land use permit conditions will require that work stop at the first sign of soil rutting or gouging
Excavation to extract existing poles and anchors during salvage operation	sedimentation from exposed earthworks and operation of equipment	<ul style="list-style-type: none"> • silt fencing will be installed around perimeter of excavation if there is a risk of erosion • silt fencing will be installed at the downstream toe of any stockpile, if less than 10 m from a watercourse, to prevent dust and erosion
Brushing activities within the ROW	sedimentation from exposed earthworks and operation of equipment and movement of vehicles	<ul style="list-style-type: none"> • brushing will be completed to leave the root mass in place, reducing the likelihood of erosion • temporary silt fencing may be installed near watercourses if brushing is likely to lead to erosion

(a) A full list of mitigation measures is presented in Section 3.2.

ROW = right-of-way.

3.2 Erosion and Sediment Control Mitigation Measures

Brushing, salvage, and construction activities will follow best practices in accordance with the Northern Land Use Guidelines – Access: Roads and Trails (GNWT 2015), to protect the ground surface and prevent erosion within the ROW.

In areas where heavy equipment will be operated for salvage of existing poles or installation of new poles, erosion and sediment control measures will be implemented, when appropriate, in accordance with BMP#1 and BMP#7 of the Government of Northwest Territories, Department of Transportation – Erosion and Sediment Control Manual (GNWT 2016). See Appendix B for BMP#1, and BMP#7.

The following additional measures will be taken during brushing, salvage, and construction activities to minimize the risk of erosion when working in sensitive areas:

- To avoid potential risk of soil contamination due to hydrocarbon spills, all equipment and trucks will be maintained in good working order and inspected daily for hydrocarbon leaks.
- Drip trays will be deployed under all stationary equipment that use fuel, and all equipment and vehicles will be equipped with spill kits.
- There will be no fuel storage or cross-loading within the ROWs. Fuelling of equipment shall not be conducted within 100 m of waterbodies.
- When possible, cleaning, refuelling, and maintenance of any equipment will be conducted in designated areas away from any slopes and away from waterbodies on impermeable pads (drip tray).
- All personnel will be trained in the safe handling, transfers, and dispensing of fuels, and required to familiarize themselves with the Spill Contingency Plan.
- Excavation activities required for the pole and anchor placement will be suspended during periods of heavy rain.
- No work will be completed within 10 m of any surface waterbody, including the removal of vegetation, until the appropriate erosion and sediment control measures have been properly implemented, as determined by the site manager.
- Damaged or non-functional erosion control measures will be repaired as soon as possible.
- Ground disturbance will be avoided where practical to reduce surface erosion processes.
- Only the minimum amount of soil and vegetation necessary for the safe installation of transmission poles and anchors will be disturbed.

- Salvageable timber from brushing activities will be cleared off the alignment progressively as brushing proceeds. Salvageable timber with a butt size greater than 12 cm will be stockpiled adjacent to the cleared area in staging areas for the public to utilize for firewood or other purposes.
- To reduce changes to soil structure, operation of machinery when soils are highly saturated (primarily during freshet) will be avoided where possible. Where unavoidable, suitable ground equipment will be used to prevent unnecessary soil damage.
- Work will stop if sedimentation issues occur outside of work areas until the cause of sedimentation is identified and properly addressed.

3.3 Contractor Responsibility

The contractor will be responsible for ensuring compliance with all erosion and sediment control measures outlined within this document.

3.4 Erosion and Sediment Control Inspection and Monitoring

For the duration of construction activities, erosion and sediment control best management practices will be used where practical, in accordance with BMP#1 and BMP#7 of the Government of Northwest Territories, Department of Transportation – Erosion and Sediment Control Manual (GNWT 2016). The following monitoring and inspections of work areas will be performed by the Environmental Monitor using the form in Appendix C, and reported to the site manager:

- observe runoff leaving the site during storms, checking for turbid water
- inspect downslope areas surrounding the site for tracking of sediment
- report the results of the inspection and recommend improvements, if any, to the contractor
- evaluate the implementation of any specified erosion and sediment control measures and ensure installation is in accordance with drawings and manufacturer specifications
- erosion and sediment controls will be inspected daily in active work areas, and weekly following major rain events in areas where ground disturbance work is complete

4 REFERENCES

Fisheries and Oceans Canada (DFO). 2023. Measures to Protect Fish and Fish Habitat. Available at <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

GNWT (Government of Northwest Territories). 2015. Northern Land Use Guidelines. Volume 05 : Access - Roads and Trails. Available at <https://publications.gc.ca/site/eng/9.693034/publication.html>

GNWT. 2016. Erosion and Sediment Control Manual. Available at https://www.inf.gov.nt.ca/sites/inf/files/resources/dot_erosion_and_sediment_control_manual_-_mar_31_16.pdf

Appendices

Appendix A: Project Map

Appendix B: Erosion Control Best Management Practices

Appendix C: Erosion Control Inspection Form

Appendix A: Project Map

Appendix B: Erosion Control Best Management Practices

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