



NORTHWEST TERRITORIES  
**POWER  
CORPORATION**

*Empowering Communities*

**TALTSON WINTER ROAD  
CLOSURE AND RECLAMATION PLAN**

**TALTSON HYDROELECTRIC FACILITY  
TALTSON RIVER, NORTHWEST TERRITORIES**

**August 2019**

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## DOCUMENT MAINTENANCE AND CONTROL

The Director, Health, Safety & Environment is responsible for the distribution, maintenance and updating of the Winter Road Conceptual Abandonment and Restoration Plan. This Plan will be reviewed annually and updated as required, taking into account changes in the law, environmental factors, NTPC policies, and Taltson Winter Road characteristics. Changes in phone numbers, names of individuals, etc. that do not affect the intent of the Plan are to be made as required. Additional copies can be provided by the Director, Health, Safety & Environment.

DOCUMENT HISTORY				
Revision #	Revised Section(s)	Description of Revision	Prepared by	Issue Date
1	All	Prepared for 2019 Water Licence application	NTPC	April 2019
2	All	Revised in accordance with MVLWB LUP & WL conditions (Part G, condition 4)	NTPC	August 2019

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# 1 INTRODUCTION

This Closure and Reclamation Plan (CRP) provides a general closure and reclamation plan for the Taltson Winter Road (WR) between Fort Smith and the Taltson Hydroelectric Facility (Taltson Facility). The Taltson Facility is a remote hydroelectric power generating facility located 56 km northeast of Fort Smith. The nearest community is Fort Smith, NWT. The Taltson WR is required to support upgrade and maintenance activities at the Taltson Facility and is tentatively scheduled for construction and operation for three to five seasons, beginning in December 2019.

## 1.1 BACKGROUND

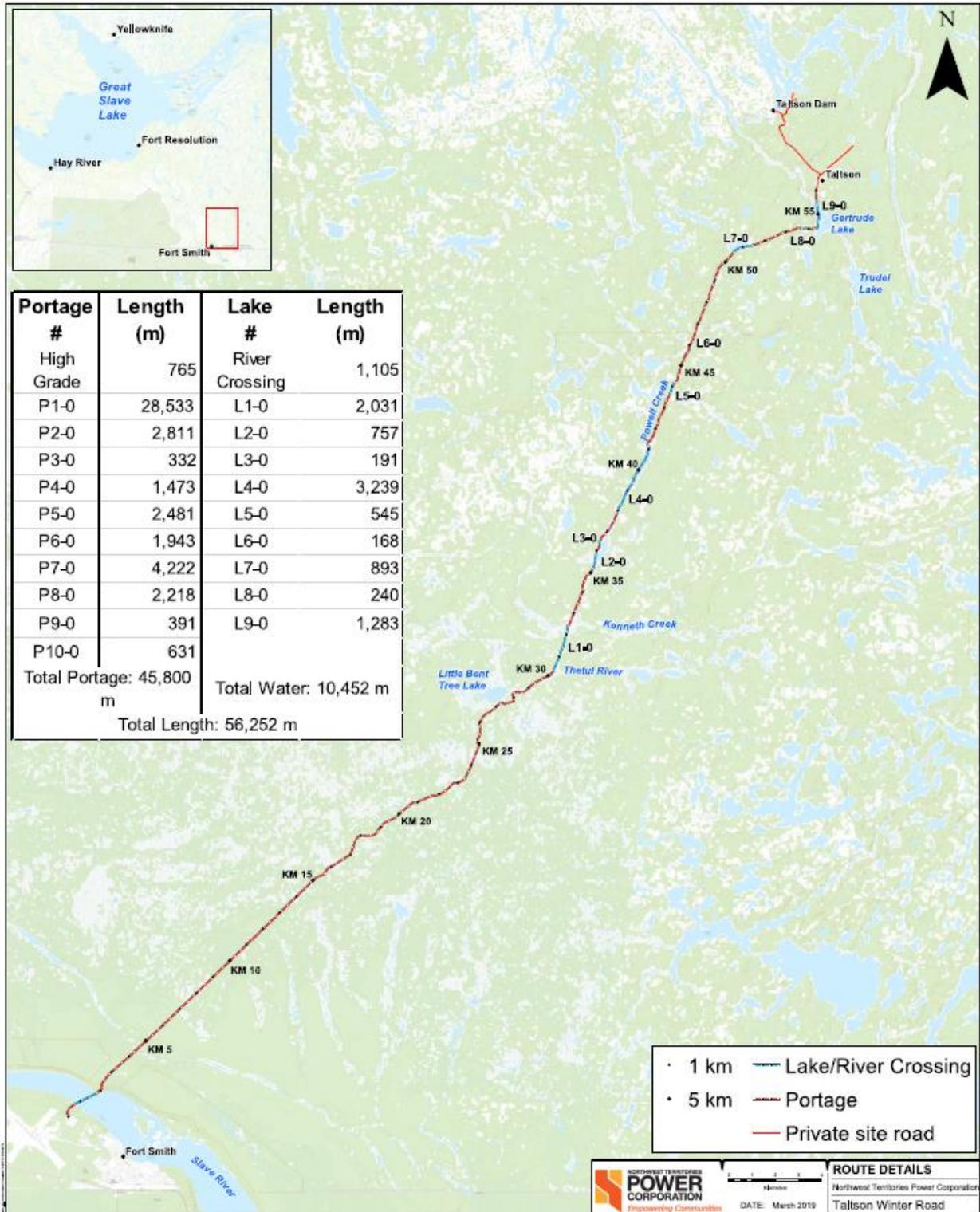
The Taltson Facility has been providing hydroelectric power since 1966. It was initially constructed to provide power to Fort Smith and the Pine Point Mine. When the Pine Point Mine closed in the mid-80's, the transmission line from Taltson Facility was extended to provide power to other communities in the area. The facility currently provides power to Fort Smith, Hay River, K'atl'odeeche First Nation, Fort Resolution, and Enterprise.

When the facility was constructed (1964-66), access to the site was via a seasonal winter road from Fort Smith. The proposed route for the Taltson WR follows the same corridor used when the facility was built. NTPC and the GNWT are considering options to increase the output from the Taltson and provide the additional hydroelectric power that will be generated to other part of the NWT. This expansion is outside the scope of the upgrade and maintenance activities at the Taltson Facility that are associated with the Taltson WR.

## 1.2 SCOPE

The CRP provides information on the progressive reclamation that will be undertaken to close and reclaim the Taltson WR should NTPC no longer require the seasonal road to access the Taltson Facility or any other NTPC facilities in the area. However, it is unlikely that the Taltson Facility will be closed, and the plans contained in this report are conceptual only. If the Taltson Facility is operational, NTPC must retain the ability to access the facility via a seasonal access road from Fort Smith. As a result, the Taltson WR corridor between Fort Smith and the Taltson Facility will not be fully reclaimed until the facility is permanently closed and abandoned. If another organization were to assume operating and maintenance responsibilities for the Taltson Facility, the responsibility to close and reclaim the WR corridor would be transferred to that organization.

Figure 1.1: Taltson Winter Road Map



### 1.3 TALTSON WINTER ROAD LOCATION

The Taltson WR runs between Fort Smith and the Taltson Facility. It is approximately 56 km long; the start point is a temporary laydown area at the northeast corner of the Fort Smith airport. The end point is a temporary laydown area at the southern end of the airfield at the Taltson Facility (refer to Figure 1.1). The Taltson WR consists of 11 over land portions (portages) and 10 over ice portions (lakes/ivers). The total length of portages is approximately 45.3 km (81%) and the total length of lakes/ivers is 10.7 km (19%). The breakdown of the Taltson WR is shown in Table 1.1.

<b>NTPC Taltson Winter Road Route Alignment</b>				
<b>Portage</b>	<b>Length (m)</b>	<b>Lake</b>	<b>Length (m)</b>	<b>Lake Name</b>
Ft. Smith	765	Slave River	1,050	
P1-0	28,301	L1-0	2,249	Tethul River
P2-0	2,403	L2-0	978	
P3-0	386	L3-0	85	
P4-0	809	L4-0	3,955	Powell Creek
P5-0	2,514	L5-0	408	
P6-0	2,047	L6-0	105	
P7-0	4,521	L7-0	657	
P8-0	438	L8-0	62	
P9-0	2,390	L9-0	1,158	Gertrude Lake
P10-0	715			
<b>Portage length sub-total: 45,289 m</b>		<b>Lake length sub-total: 10,707 m</b>		
<b>NTPC Winter Road length total: 55,996 m</b>				

**Table 1.1: Taltson Winter Road Portage and Lake Summary**

### 1.4 ANNUAL CONSTRUCTION PROGRAM

The annual construction, operation, and maintenance for the Taltson WR will occur in five phases. Although each phase of the project is sequential in the annual program, there are elements of overlap between the phases.

- Phase 1 – Detailed Planning (June – October)
- Phase 2 – Mobilization (November – December)

- Phase 3 – Construction (December – January)
- Phase 4 – Operation and Maintenance (February – March)
- Phase 5 – Demobilization and Road Closure (March – April)

At the end of each season, all WR equipment, material, and any temporary structures will be demobilized to either Fort Smith or the Taltson Facility. All waste, including hazardous waste and any contaminated snow or soil, will be disposed of in accordance with the Taltson Facility Spill Contingency Plan. Apart from the existing outline, there should be no evidence of the Taltson WR within the WR corridor at the end of Phase 5 for each season that the WR is in operation.

## 1.5 GOVERNING LEGISLATION

The Taltson WR Water Licence and Land Use Permit are issued under the authority of the Mackenzie Valley Land and Water Board (MVLWB). As part of these licenses, a closure and reclamation plan is required.

## 2 CLOSURE PLAN

The objective of the CRP is to prepare the Taltson WR in such a manner as to facilitate natural revegetation. This will be achieved by removing all evidence of the Taltson WR within the WR corridor at the end of each season that the WR is in operation.

Should NTPC no longer require access to the Taltson Facility or any other NTPC facilities in the area, long-term reclamation goal of this CRP to return the Taltson WT to its current state i.e., a seasonal winter road used locally for recreation and harvest. This is the desired steady state condition of the Taltson WT.

### 2.1 OVERVIEW

This CRP addresses the scope and purpose of the Taltson WR between Fort Smith and the Taltson Facility as described in the 2019 water licence application to the MVLWB. Taltson WR is required to support upgrade and maintenance activities at the Taltson Facility. This CRP assumes that the MVLWB and local communities' reclamation goal is not the permanent decommissioning of the Taltson WR, but the continual use of the pre-existing seasonal winter road by the public. Should the scope and/or purpose of the Taltson WR or the reclamation goals change, the CRP will be updated to reflect those changes.

Considering the Taltson WR corridor is used by the Fort Smith community to access area west of the Slave River for hunting, fishing, and other recreational/cultural activities, the natural state of the WR corridor following closure will be one that is safe for public winter use and preserves the natural environment of the portages, rivers, and lakes along the corridor in accordance with the reclamation goal.

The progressive reclamation that will be taken to close and reclaim the Taltson WR includes the removal of all structures, equipment, and material related to the Taltson WR with minimal environmental disturbance, allowing for natural revegetation of the WR corridor during summer months.

## 2.2 PORTAGES, STAGING AREAS, AND REST STOPS

The construction and operation of the Taltson WR 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 on portages, staging areas, and rest stops. At the end of each winter road season, the following progressive reclamation will be undertaken to facilitate natural revegetation:

- Remove all garbage, petroleum products, machinery, and equipment from the WR corridor. Waste products will be disposed of in accordance with the Waste Management Plan. Machinery and equipment will be demobilized to either Fort Smith or the Taltson Facility.
- Scrape off any sand/gravel placed on the portage transitions for traction control using heavy equipment. Sand/gravel will be moved off ramps and onto portages a minimum 10 m away from the high-water mark to avoid impacts on the aquatic environment. The sand/gravel will be spread out over portages so that it does not accumulate in a pile. This will be inspected by the Lands Inspector at the end of each winter road season.
- V-notch all snowfills at stream crossings to avoid flooding and minimise the risk of bank erosion. This will be inspected by the Lands Inspector at the end of each winter road season.
- Remediate and/or remove any portages or rest stops that have been contaminated due to petroleum hydrocarbon spills or other hazardous materials. Contaminated snow will be handled in accordance with the Taltson Hydro Spill Contingency Plan (Section 5.3-5.9). In the event contaminated soils are treated in-situ, the GNWT Environmental Guideline for Contaminated Site Remediation (GNWT 2003) will be followed. For parameters not covered under the GNWT guidelines, the CCME Canada-wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) and the CCME Soil Quality Guidelines for the Protection of Environment and Human Health (2007) will be followed. The final land use criteria proposed for soils remediation standards is Residential/Parkland.
- Install adequate cross drainage on areas that have been improved with heavy equipment and/or granular fill. Drainage will be directed into vegetation and away from surface water.
- Restore areas impacted by operation by removing fallen trees and any other obstructions from the corridor.
- Do not restrict public access at any time during closure or reclamation.

The completion of the steps above at the end of each season of operation will meet the long-term reclamation goal of this CRP.

## 2.3 LAKES AND RIVERS

At the end of each winter road season, the following the following progressive reclamation will be undertaken to facilitate natural revegetation:

- Remove all garbage, petroleum products, machinery, and equipment from the WR corridor. Waste products will be disposed of in accordance with the Waste Management Plan. Machinery and equipment will be demobilized to either Fort Smith or the Taltson Facility.
- Scrape off any sand/gravel placed on the portage transitions for traction control using heavy equipment. Sand/gravel will be moved off lakes and rivers and onto portages a minimum of 10 m from the high-water mark, to mitigate impacts on the aquatic environment. The sand/gravel will be spread out over portages so that it does not accumulate in a pile. This will be inspected by the Lands Inspector at the end of each the winter road season.
- V-notch all snowfills from ice bridges to avoid flooding at crossing sites and minimise the risk of bank erosion. This will be inspected by the Lands Inspector at the end of each winter road season.
- Remove any snow from lakes or rivers that have been contaminated due to petroleum hydrocarbon spills or other hazardous materials. Contaminated snow will be handled in accordance with the Taltson Hydro Spill Contingency Plan (Section 5.3-5.9).
- Remove any temporary culverts in a manner that prevents sedimentation and avoids changes to the local drainage. Culverts will be backhauled to Fort Smith for final disposal.

The completion of the steps above at the end of each season of operation will meet the long-term reclamation goal of this CRP.

## 2.4 ENVIRONMENTAL MONITORING

A minimum of 10 days prior to the commencement of any progressive reclamation, NTPC will provide written notification to the MVLWB and Lands Inspector. Notification will include the name and contact information for the individual responsible for overseeing the progressive reclamation (Environmental Monitor). The Environmental Monitor, empowered to stop work if required, will oversee the closure of the Taltson WR and the implementation of the progressive reclamation outlined in Sections 2.2.and 2.3. The Environmental Monitor will be responsible for ensuring:

- All garbage, machinery, and equipment are removed.
- Any sand/gravel is spread out a minimum of 10 m from the high-water mark.
- Any large snowfills and ice bridges over streams are v-notched.

- Any petroleum hydrocarbon spills or other hazardous materials are removed or treated in-situ to the in line with appropriate standards for Residential/Parkland land use.

In accordance with the *Northern Land Use Guidelines*, environmental monitoring will be performed for at least two years after the reclamation activities are completed and results demonstrate that the desired steady state conditions have been achieved (i.e., until the Taltson WR reverts to a seasonal winter road for public use only, and is inaccessible during other times of the year). This will involve traveling the winter road by ATV the winter following closure to access its capacity to accommodate larger vehicles, and confirming that the road is impassible in summer. Photographic evidence will be provided to the Lands Inspector on an annual basis until this is achieved. This is expected to be achieved within one year of closure and rehabilitation. The Taltson WR is not expected to be accessed in summer as this would not contribute to the goal of the Closure and Reclamation Plan and may result in environmental effects beyond those realised by the operation of the Taltson WR.

Once the Lands Inspector is satisfied that Taltson WR has been closed, the regulator will issue a letter of final clearance stating that NTPC is no longer responsible for the Taltson WR corridor.

### 3 REFERENCES

- CCME (Canadian Council of Ministers of the Environment). 2014. Canadian Environmental Quality Guidelines.
- CCME (Canadian Council of Ministers of the Environment). 2008. Canada-wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008)
- CCME (Canadian Council of Ministers of the Environment). 2007. Soil Quality Guidelines for the Protection of Environment and Human Health (2007)
- GNWT (Government of the Northwest Territories). 2017. Guidelines for Hazardous Waste Management.
- GNWT. 2015. Northern Land Use Guidelines – Access: Roads and Trails.
- GNWT. 2003. Environmental Guidelines for Contaminated Site Remediation.