



February 9, 2024

Mr. Ryan Fequet
Executive Director
Wek'èezhì Land and Water Board
#1-4905 48TH ST,
YELLOWKNIFE NT X1A 3S3

Dear Mr. Fequet:

Government of the Northwest Territories Information Request for Consideration of Winter Road Construction in Closure Cost Estimates (W2020L2-0004) - Response to the owners and operators of the Joint Venture Tibbitt to Contwoyto Winter Road

On March 21, 2023, the Government of the Northwest Territories (GNWT), Department of Environment and Climate Change (ECC) received [an information request \(IR\)](#) from the Wek'èezhì Land and Water Board (WLWB) as a result of a memorandum that the GNWT submitted to support its request for a ruling on the site-wide security update.

The GNWT responded on [June 16, 2023](#), suggesting that a multi-party working group would best resolve the outstanding security required for developing or partnering to operate the winter road to the major mines. Following further discussion with the WLWB in October 2023, GNWT-ECC provided an [update](#) to our original IR response. In this response, the GNWT outlined the information that would be required from the owners and operators of the Joint Venture Winter Road (JVWR) to assist in providing an initial cost estimate for the building and operation of the Tibbitt to Contwoyto Winter Road (TCWR) to support mine reclamation.

On November 10, 2023, the owners and operators of the JVWR issued a [response letter](#) stating that “the detailed operational information requested for the large-scale TCWR is an inappropriate basis, even as a starting point, for estimating costs to construct a small-scale winter road to support a single mine reclamation project... We anticipate that the usage requirements of a winter road for a single mine reclamation project would be over an order of magnitude lower and result in an entirely different winter road construction and operation strategy.” The response went on to state that the JVWR would support the application of a unit rate within the range specified in the RECLAIM Model, Version 7.

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To further assist the WLWB decision on the original IR, GNWT has responded to the November 10, 2023 letter herein, with the support of its technical consultant, Brodie Consulting Ltd. (BCL).

Winter Road Cost Background

The WLWB issued the March 21, 2023 IR to the GNWT as part of the 2023 review process to update the Ekati Diamond Mine site-wide security estimate and, specifically, further address a statement submitted by GNWT's technical consultant ([BCL memo dated October 28, 2022](#)), noting that the costs for construction of a winter road to access the site during reclamation and closure have not, to date, been included in the Ekati security estimate. Instead, it has been recognized that the TCWR supports access to the diamond mines, and that the costs to construct and operate the winter road are currently shared by owners of the Ekati Diamond Mine, Diavik Diamond Mine and the Gahcho Kué Diamond Mine under a joint venture (JV) as part of their mining operations. The concern raised by BCL in the October 2022 memo is that if active mining ceases for one or all the mines, the shared costs for the TCWR will no longer be borne by the JVWR.

The current Ekati Mine security estimate includes mobilization and demobilization costs for equipment, materials, and supplies (e.g. fuel) by land transportation via the TCWR. The current closure liability does not include direct costs for constructing the TCWR; however, a winter road usage cost of \$0.29/tonne/km is included to mobilize the 42,500,000 L of fuel (fuel only, not calculated for equipment mobilization). The total winter road usage cost in the Ekati security estimate is \$4.45M. The Diavik Mine security estimate includes \$1.12M in winter road usage costs, and the Gahcho Kué Mine security estimate includes \$926K as a fuel mobilization premium for winter road usage (described as "high" range of fuel mobilization).

RECLAIM and other Reference Costs

As noted in the November 2023 JVWR response, RECLAIM 7.0 (2014) includes unit costs for winter road construction. The model's low and high ranges for unit costs are \$2,000/km and \$11,500/km (2014 dollars), respectively, or \$2,500/km and \$15,000/km in 2023 dollars based on Consumer Price Index (CPI) inflation.

GNWT's concerns for adopting the RECLAIM "winter road construction" base unit costs, without other benchmark costs include the following:

- The model's Version 7 cost database is from 2014 and out of date,
 - CPI inflation provides a mechanism to convert past dollars to current-day dollars; however, it does not capture construction escalation factors that change and increase outside of inflation.
- The work effort to construct a winter road that is the length of the TCWR is site- and regionally-specific, which makes it difficult to apply generic cost rates.

GNWT notes that recent government-led projects in the Northwest Territories that have required the construction of a winter road, to support site remediation work, include a 2018 site remediation project within 90 km of Yellowknife and a 2019 site remediation project within 240 km of Yellowknife. The direct-winter road construction unit costs for those projects were:

- \$18,000/ km of winter road construction over a legacy route (2018 dollars)
 - Or \$21,400/ km (CPI inflation to 2023)
 - >100 km road
- \$10,000/ km for short winter road spur (2019)
 - Or \$11,600/ km (CPI inflation to 2023)
 - 50 km road spur

Winter Road Construction Closure Liability

The TCWR is a 400 km constructed winter road to provide land access from Yellowknife to the Ekati Diamond Mine, Diavik Diamond Mine, and Gahcho Kué Diamond Mine to support mining operations. GNWT acknowledges that the usage requirements of a winter road for a single mine reclamation project would result in a different winter road construction and operation strategy. However, GNWT does not concur with the opinion that it would be significantly different (up to an order of magnitude as referenced above) because many of the activities of reclamation are similar to those of mine construction and operation (movement of fuel, heavy equipment, supplies needed for reclamation).

Based on the information at hand, and notwithstanding a design for smaller winter roads to support reclamation and closure works, GNWT concurs with adopting a per kilometer unit rate to determine the reclamation and closure winter road construction costs for the applicable TCWR diamond mine files. GNWT's consultant, BCL, recommends a unit cost based on the above benchmark costs, plus 15% for a larger scale of work to complete the 400 km TCWR alignment. That is a unit cost of \$25,000/km (\$21,400/km x 1.15) or a total cost of \$10,000,000 (\$25,000/km x 400 km) for each winter road construction year.

The reclamation and closure plans for the individual diamond mines will require a review to determine the number of winter roads required for closure implementation; at minimum, one winter road is required for mobilization and one for demobilization.

Potential Security Phasing

To assist the future discussion of a working group, should the WLWB decide one is required, the GNWT could consider if there is a potential to phase security associated with winter road costs. However, this is unique to how security is phased in existing authorizations, i.e., when liability is being created and increasing over time. In this instance, winter road construction for remediation is a real cost and an existing liability that has not been secured to date. One advantage of staging is to potentially align it with the end of mining or with the submission of the final closure plan for the mine site. It could be flexible to recognize when one or more active mines are no longer part of the JWVR.

A drawback of this approach is that an increase in security may not be predictable (e.g., early shutdown or unexpected shutdown of one of the JV partners) and may come at a time when the economics of the mine in question are at their lowest in the later stages of the mine life.

Final Security Options

The above discussion presents the options which GNWT considers to be the endpoints (lowest and highest) for estimating the TCWR mines' closure liability for winter road construction. Consideration for a phased approach is also outlined.

GNWT-ECC notes there is a risk that requiring the total amount of the winter road construction costs for each mine may oversecure individual mine projects. However, it may also mitigate against unexpected mine closure scenarios, e.g., JV partners ceasing active mining in relatively successive years.

If you require further information, please contact Mr. Bill Pain, Environmental Scientist, Water Regulatory and Assessment, Regulatory and Permitting Division, at [Bill Pain @gov.nt.ca](mailto:Bill.Pain@gov.nt.ca).

Sincerely,



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