



Topic: MVEIRB-1 Construction Schedule

Preamble from the Mackenzie Valley Environmental Impact Review Board (Review Board): The GNWT has proposed a construction timeline that extends unusually far into the future (up to 20 years). This extended timeline introduces additional uncertainty into construction impact predictions by requiring the Review Board and parties to assess impacts based on conditions that may well change over the lengthy construction period.

In a 2013 letter (attached) to the developer (PR#39), the Review Board previously raised this specific concern about the challenges of confidently predicting impacts given the unusual length of the proposed construction period. The Review Board expressed concern about the accuracy of impact predictions on wildlife, water resources, climate and permafrost, and socio-economics. Aspects of the environment, such as fire regime, certainly appear to have changed even since the Review Board raised the concern.

The Board has read GNWT's statement, in section 5.4.1 of the Developer's Assessment Report, that adaptive management and ongoing engagement are sufficient to predict and mitigate impacts and uncertainties in the future. This approach relies on adaptive management to quickly detect important impacts and for those impacts to be mitigated before they become significant. The Review Board is not convinced that the assurance of adaptive management is a sufficient substitute for credible impact prediction.

Request from the Review Board:

- A. How likely is the predicted or alternative construction timeline presented in the Developer's Assessment Report?
- B. Please justify and provide further details on the statement in DAR section 5.4.1 that adaptive management and ongoing engagement are sufficient to predict and mitigate impacts and uncertainties on the environment and people once construction is complete (a minimum of 20 years from now into the mid-2040s) and the road is entirely open to the public.
- C. Please describe the GNWT's optimal construction schedule (that is, if financial resources are available to build the highway upon receipt of permitting approval), including:
 - How long would it take to build the road from Wrigley to Norman Wells on this basis?
 - Would the GNWT consider building from multiple headings at the same time (for example, from Norman Wells, Tulita, and Wrigley simultaneously)? What would this construction schedule look like?

Attachments:

1. MVEIRB letter to GNWT October 29, 2013
2. GNWT Response to MVEIRB November 13, 2013



Response from the Government of the Northwest Territories:

- A. The GNWT has combined its responses to A and C in this section.

In its information requests, the Review Board is inquiring with respect to the GNWT’s optimal construction schedule, as well as the predicted and alternative construction schedules as currently presented in the DAR.

- i) Optimal schedule:

The GNWT’s optimal schedule, subject to available financing and receipt of project authorizations, would be to construct the project from multiple headings at the same time, in as little as three to four years.

Given recent logistical challenges associated with forest fires, low water conditions on the Mackenzie River and the subsequent disruption of critical community resupply operations over the past two years, there is an urgent need for all-season access to the Sahtú Region. Unprecedented challenges this year associated with historic low water conditions along the Mackenzie River have resulted in the recent decision to cancel barging services to the communities of Norman Wells and Tulita, further amplifying the need for all season access to these communities.

Based on these factors, the GNWT’s optimal construction approach and schedule for the Mackenzie Valley Highway Project would be to advance construction of the entire alignment concurrently and from multiple headings (e.g. construction advancing concurrently from Norman Wells to Tulita as well as from Tulita to Norman Wells; Wrigley to Tulita as well as Tulita to Wrigley). Section 7.3.2.2.1 of the DAR suggests that project construction can be completed in as few as three to four years, but this timeframe could extend outwards depending on the factors listed below.

Several significant assumptions are necessary to facilitate such an expedited schedule, including:

- a. Design for construction, for the entire alignment, would need to be completed concurrent to the environmental assessment;
- b. Land tenure, for the entire alignment, would need to be secured prior to the start of construction;
- c. Funding to complete regulatory authorizations and advance construction, for the entire alignment, would need to be secured;
- d. Regulatory authorizations and associated permitting, for the entire alignment, must be completed prior to construction; and



- e. Procurement for construction, for the entire alignment, would need to be successful (i.e. successful bid from a contractor with the capacity to undertake the work in the period requested at an acceptable cost).

As demonstrated by the assumptions described above, executing an optimized project delivery schedule will require continued commitment from the GNWT, Government of Canada, Indigenous Governments, and other parties to plan, fund, and execute the project. It is clear that a more expedited construction schedule is strongly desired by Indigenous Governments and community residents who are experiencing recurring extreme weather events that both interrupt supply chains and impede community egress routes. The GNWT has clearly heard this feedback, and in response, work is underway to define an optimized schedule and potential implications for environmental and socio-economic impacts.

ii) Predicted and Alternate Construction Schedules

The conceptual schedule used as the basis for the environmental assessment is presented in Section 5.4.1 of the Developers Assessment Report (DAR) and illustrated in Figure 5.3. This conceptual schedule assumes the project will be delivered in three consecutive phases:

- Segment 1: Wrigley to the Dehcho–Sahtu border (102 km)
- Segment 2: Tulita south to the Dehcho–Sahtu border (134 km)
- Segment 3: Tulita north to the Prohibition Creek Access Road (45 km)

Construction of each phase is contingent upon the completion of final design, acquisition of construction funding and appropriate land tenure, regulatory approvals, and procurement, prior to construction.

The conceptual schedule presented in Section 5.4.1 of the DAR was informed by lessons learned on the Thcho Highway and Inuvik to Tuktoyaktuk Highway projects and was developed to achieve the goal of maximizing business, employment, and training opportunities for local workers, contractors and businesses.

The goal of maximizing employment opportunities by extending the construction period, was a strong theme discussed during early engagement (see Section 2.1.6.3, Table 2.3 Summary of Project Updates and Engagement Feedback; and Section 2.1.6.5, Table 2.5 Summary of Assessment Findings and Project Effects Engagement Feedback) but predates the unprecedented environmental conditions in recent years which have significantly impacted community re-supply. As mentioned above, it is clear that a more expedited construction schedule is strongly desired by many Indigenous Governments and community residents.

Consideration of schedules associated with alternate construction approaches is presented in



Section 7.3.1 of the DAR, and evaluation of construction approaches is presented in Section 7.3.2. The alternative construction schedule includes short highway segments (20 km or less) constructed under separate contracts over a timeframe that would likely exceed 20 years.

As stated in Section 7.3.2.3 of the DAR, both construction options are feasible. The likelihood of either approach being advanced depends on various factors including funding availability, strategic priorities, feedback from Indigenous Governments and community organizations, and the findings from the environmental assessment.

- B. The GNWT has indicated in Section 5.4.1, that should the *construction* schedule [emphasis added] extend beyond 20 years, there may be a need for additional studies and mitigation measures to address uncertainty in predicting effects of construction activities specifically (which are generally of greater intensity than those of the operations and maintenance phase) on the environment so far into the future.

The statement was not made in the context of highway *operations*, which are inherently expected to extend well beyond 20 years into the future, and whose effects are already assessed in the DAR. The GNWT has discussed uncertainties and prediction confidence in each assessment section, applied a precautionary approach where needed, and has also committed to monitoring and adaptive management.

The GNWT's approach to adaptive management is described in Section 23.2. It is consistent with the adaptive management approach applied during the construction (complete) and operations (ongoing) of the Tłı̄ch̄o Highway, and approaches in other jurisdictions (e.g., BCMECCS, 2022; Government of Yukon, 2021).

Adaptive management is not proposed to reduce prediction uncertainty. Adaptive management is proposed as a process to monitor, evaluate, and if necessary, respond, if specific conditions are observed that may indicate mitigation measures are not working as intended. Adaptive management can also identify when additional management actions are required to address any unanticipated effects.

The GNWT will engage with Indigenous Governments, Indigenous organizations, other land and resource managers, and co-management organizations on adaptive management actions.

- C. See combined response above.



References:

British Columbia Ministry of Environment and Climate Change Strategy (BCMECCS). 2022. Development and Use of Adaptive Management Plans v.3.0. Technical Guidance MIN-20. Available at: [tg20_guide_to_preparing_adaptive_management_plans.pdf \(gov.bc.ca\)](https://www2.gov.bc.ca/gov/content/min-20/tg20_guide_to_preparing_adaptive_management_plans.pdf)

Government of Yukon. 2021. Guidelines for developing adaptive management plans in Yukon. Water-related components of quartz mining projects. Available at: [env-amp-guidelines.pdf \(yukon.ca\)](https://www.yukon.ca/env-amp-guidelines.pdf)