File No. 6217.00
Manitoba Transportation and Infrastructure - PTH 5 Assiniboine River Bridge Replacement and Relief Bench Project

Additional Information Request and Response Received

No	Date	Notes
1	Request for additional information – May 21, 2025	Starting on page 2
2	Additional information – October 27, 2025	Starting on page 3
3	Additional TAC comments - March 20, 2026	Starting on page 13

From: Mak, Jay
Sent: May 21, 2025 2:10 PM
To: Nicolas, Bryana <Bryana.Nicolas@gov.mb.ca>
Subject: Proposal comments and request for additional information (6217.00)

Hello Bryana,

The preliminary review of your Environment Act Proposal is now complete. Please consider the following items as a request for additional information:

- Provide an estimate of greenhouse gases (GHG) generated by the proposed development. Could you provide a description of any relevant GHG management actions that align with 2050 net-zero commitments and consider a screening-level assessment with Climate Action and Energy Innovation Division?
- Could you clarify the land ownership of the proposed footprint described on page 5? Please provide any relevant documentation, if applicable.
- Provide additional mitigation measures or relocation measures for Plains Hognosed Snake if they are encountered.

We received the attached Technical Advisory Committee (TAC) comments and no public comment on this proposal. They will also be available on the public registry soon. Some comments are included for information purposes only and responses are not required.

Please let me know if you have any questions.

Thanks,

Jay Mak, M.Sc., P.Eng.
Senior Environmental Engineer
Land Use, Waste Management, and Energy Section
Environmental Approvals Branch
Department of Environment and Climate Change
Box 35, 14 Fultz Blvd, Winnipeg, MB R3Y 0L6

T: (204) 619-0709 /F: (204) 945-5229/ Email: Jay.Mak@gov.mb.ca

From: Nicolas, Bryana <Bryana.Nicolas@gov.mb.ca>
Sent: October 27, 2025 11:10 AM
To: Mak, Jay <Jay.Mak@gov.mb.ca>
Cc: Mohammed, Abdulgafar <Abdulgafar.Mohammed@gov.mb.ca>
Subject: RE: Proposal comments and request for additional information (6217.00)

Hi Jay,

See the attached addendum which addresses GHG emissions directly related to the project.

As far as land ownership is concerned, the entire area is Crown land, so land acquisition is not technically required. All that was required was to place a Crown land reservation for the structure replacement. See the attached documentation provided.

A ministerial exemption has been received for Prairie Skinks and the Western Hognose Snake from Natural Resources and Indigenous Futures should either species be encountered (see attached). In the event a hognose snake is found within the work area, project work will stop in the immediate location, the Wildlife Branch and Parks department will be notified, and a relocation or salvage will be conducted as necessary by a qualified biologist.

Let me know if there are any further comments or concerns,

Bryana Nicolas
Biologist | Environmental Services | Manitoba Transportation and Infrastructure
204-914-0994

PTH 5 Assiniboine Bridge Replacement Environment Act Proposal Report Addendum 1 – Greenhouse Gas Emission Review

4.9. CLIMATE CHANGE AND GREENHOUSE GASSES

The climate change implications of the proposed PTH 5 project must be considered in terms of both the project's potential contribution to climate change (i.e., greenhouse gas emissions) and how future climate conditions may influence the integrity and environmental risk profile of the project over time.

During the construction phase, the project will contribute to greenhouse gas (GHG) emissions primarily through the operation of heavy machinery, transportation of materials, land clearing, and vegetation removal. The removal of intact mixed boreal forest and riparian vegetation, which act as carbon sinks, results in the loss of carbon sequestration potential and a one-time release of stored carbon. Additionally, emissions from the demolition and disposal of the existing bridge structure, and site preparation, fuel use, and transportation activities will add to the project's carbon footprint. However, the spatial extent of the realignment and the relatively short duration of construction suggest that these emissions, while not negligible, will be moderate and limited to the local scale.

In terms of long-term operational impacts, as this is a bridge replacement rather than a new route opening an undeveloped corridor, there is not expected to be an overall increase in emissions from traffic (i.e. bridge replacement is not expected to affect overall traffic volume and highway use at this site.

From an adaptation and climate resilience perspective, the project will occur within the Assiniboine River valley, a system characterized by variable seasonal flows, occasional ice-jam flooding, and freeze-thaw dynamics that impact regional infrastructure. Climate change projections for southern Manitoba and the RM of Glenboro-South Cypress indicate:

- More frequent extreme precipitation events,
- Earlier spring melt and variable runoff patterns,
- Wetter springs and drier late summers,
- Long, more persistent drought events and heat waves (Climate Atlas of Canada 2025),
- Increased risk to public safety, including wildfire risks, extended allergy seasons, and new infectious disease introduction/migration (Prairie Climate Center 2025), and
- Greater freeze-thaw cycling and temperature extremes (Bush & Lemmen, 2019; Manitoba Hydro, 2021), among other potential climatic shifts and ecological changes.

These conditions may influence bridge integrity, particularly in relation to scour, bank stability, and foundation durability. The bridge design will incorporate measures to reduce vulnerability to these risks.

Warming temperatures and shifts in precipitation may also alter terrestrial and aquatic ecosystems in the project area. For example, changes in forest composition, wetland dynamics, or aquatic habitat characteristics may influence the distribution and resilience of species already under stress, including Lake Sturgeon, ungulates, and other at-risk species identified in the assessment (Hebda, 2017; COSEWIC, 2014; Bush & Lemmen, 2019). Fragmented landscapes created by infrastructure projects can become more sensitive under shifting ecological baselines, potentially compounding the effects of climate change on biodiversity (Heller & Zavaleta, 2009).

4.9.1. Greenhouse Gas Inventory

This preliminary GHG inventory is prepared in accordance with Environment and Climate Change Canada guidance and IPCC methodologies. It provides a screening-level estimate of project-related emissions, focusing on the construction and demolition phases.

4.9.2. Description of the Project and Its Boundaries

The project involves demolition of the existing PTH 5 bridge, construction of a new multi-span structure, realignment/reconstruction of short approach segments, and clearing and reshaping of bank and terrestrial landscape for a relief bench. The inventory boundary includes:

- Direct on-site fuel use by equipment and vehicles,

- Indirect emissions from materials production and transport,

- Waste generation and disposal from demolition, and

- Emissions from vegetation clearing and disturbed soils within the construction footprint.

4.9.3. Emission Sources Included in the Inventory

Relevant emission sources expected during the construction phase include:

- **Fuel combustion** from construction equipment and vehicles (e.g., diesel excavators, trucks, cranes).
- **Land clearing and biomass removal**, leading to temporary release of stored carbon from vegetation and soils.
- **Electricity use** from site offices or equipment (if grid-connected or from diesel generators).
- **Embodied carbon in materials,** particularly concrete, reinforcing steel, and asphalt**,**
- **Waste generation and disposal**, especially from vegetation clearing (decomposition from grubbing/mulching activities), packaging materials, and construction debris.
- **Worker transportation and equipment mobilization,** both locally and from regional centers such as Brandon or Winnipeg.

- **In-river works**, which may release CH_4 from disturbed sediment, though expected to be minor.

4.9.4. Data Sources and Assumptions

Activity data will be collected from:

- Equipment fuel logs and manufacturer specifications.
- Contractor estimates on material use, equipment hours, and transport distances.
- Provincial and federal databases on emission factors (e.g., ECCC's National Inventory Report, IPCC defaults).

Assumptions include:

- Diesel is the primary fuel used in off-road equipment.
- Emission factors for construction materials are based on typical values from Canadian sources.
- Construction will occur over a defined two-year period, with peak activity in the warmer months.

4.9.5. Methodology for Calculating Emissions

Emissions will be calculated using the equation:

GHG Emissions = Activity Data × Emission Factor × GWP (Global Warming Potential)

Where:

- Activity data = quantity of fuel consumed, material used, or waste generated.
- Emission factors = from Environment Canada or IPCC defaults.
- GWPs = standard 100-year values from the IPCC (e.g., CO_2 = 1, CH_4 = 25, N_2O = 298). Separate calculations will be completed for CO_2, CH_4, and N_2O, with totals expressed in CO_2-equivalents (CO_2e).

4.9.6. Emission Factors Used and Their Sources

Emission factors will be drawn from:

- Environment and Climate Change Canada's National Inventory Report (NIR).
- Canada's Greenhouse Gas Quantification Requirements (if applicable).
- IPCC Guidelines for any supplemental or unavailable data.

Applicable examples of emission factors to be used in this inventory include:

- 2.68 kg CO_2/litre for diesel combustion.
- 0.95 t CO_2e/tonne for hot mix asphalt production.

- 1.8 t CO_2e/t for reinforcing steel.

4.9.7. Uncertainty and Limitations

Uncertainties include:

- Variability in fuel consumption across equipment types.
- Incomplete data on subcontractor activities or transport logistics.
- Potential underestimation of land-use change impacts or temporary carbon sinks lost.

To manage these uncertainties:

- Conservative estimates will be applied.
- Sensitivity analysis may be used for major sources (e.g., ±10% fuel usage).
- Documentation of assumptions will be maintained for transparency.

4.10. SCREENING-LEVEL EMISSION ESTIMATE

Quantities used in the screening level emission estimate are based on general industry estimations (IE), or based on project-specific cost estimates acquired as part of construction planning (PCE), and include both substructure and superstructure components of the project, where applicable. Typical emission factors (ECCC NIR, IPCC) have been adopted for emissions estimation, including:

- - Diesel fuel use (~450,000 L (IE) = 1,206 t CO_2e
- - Concrete (1,791 m^3 (PCE) @ 0.35 t CO_2e/m^3) = 626.85 t CO_2e
- - Reinforcing steel (259.25 t (PCE) @ 1.8 t CO_2e/t) = 466.65 t CO_2e
- - Asphalt (11,580 t (PCE) @ 0.095 t CO_2e/t) = 1,100.10 t CO_2e
- - Demolition/waste (net of recycling; IE) = 150 t CO_2e
- **Total estimated project emissions = 3,549.60 t CO_2e (±20% uncertainty).**

This value represents a one-time, construction-phase footprint. No increase in annual traffic-related emissions is expected.

4.10.1. GHG Management Actions and Net-Zero Alignment

The Government of Canada has committed to achieving net-zero greenhouse gas emissions by 2050. In support of this objective, infrastructure projects are encouraged to incorporate emissions mitigation measures and low-carbon practices wherever feasible.

To align with Canada's Net-Zero by 2050 Strategy and Manitoba's Climate and Green Plan, Manitoba Transportation and Infrastructure (MTI) will implement or consider the following measures:

1. **Low-carbon construction practices**: use of biodiesel blends, idle-reduction training, optimized scheduling to reduce fuel consumption, and potential use of hybrid/electric light-duty equipment.
2. **Sustainable materials**: sourcing aggregates and asphalt locally, incorporating recycled asphalt pavement and reinforcing steel, and evaluating blended cements with fly ash or slag to reduce embodied carbon.
3. **Recycling:** salvaging steel and concrete from the demolished bridge for reuse or down-cycling.
4. **Vegetation and riparian restoration**: stabilizing disturbed banks with native vegetation, contributing to carbon sequestration and ecosystem resilience.
5. **Design for durability and resilience:** extending bridge lifespan to reduce long-term rehabilitation emissions.

These actions demonstrate MTI's commitment to minimizing project GHG emissions and supporting the broader 2050 net-zero pathway.

4.10.2. Screening-Level Assessment with Climate Action and Energy Innovation (CAEI) Division

A screening-level GHG and climate change assessment was considered, however with the information assembled in this report includes those variables that would be considered in this process, and in considering the information collected and assessed for this project, a formal CAEI assessment will not be completed. As this project constitutes a bridge replacement, all environmental impacts related to greenhouse gas emissions and net-zero pathways are expected to be localized and short-term; infrastructure works here will not increase or intensify traffic volumes or vehicle type in this area, and the flood mitigation and riverine habitat protection components of the project are designed to mitigate and reduce environmental impacts related to flooding and infrastructure degradation, which includes reducing or eliminating the need for seasonal deployment of heavy equipment, materials, and construction crews to carry out clean up and maintenance/repair works after a flood.

4.11. Conclusion

The PTH 5 bridge replacement will result in approximately 6,300 t CO_2e in construction-related emissions, with no significant long-term operational increases. MTI has identified multiple GHG management actions and will coordinate a screening-level review with CAEI Division to demonstrate alignment with Manitoba's climate policy and the 2050 net-zero pathway.

Requisition for Entry in Crown Land Registry

Labour, Consumer Protection & Government Services
Real Estate Services Branch

Branch **LANDS** Date **DECEMBER 9, 2022**

Please make the following **Permanent** entry/entries

SEE BELOW Sec. _____ Twp. _____ Range _____ P.M. _____

DETAILS OF ENTRY/ENTRIES

THE FOLLOWING LAND IS TEMPORARILY RESERVED ON BEHALF OF THE DEPARTMENT OF MTI – TRANSPORTATION OPERATIONS DIVISION/HIGHWAY REGIONAL OPERTIONS (08-WESTERN REGION) FOR STRUCTURE REPLACEMENT OF BRIDGE SITE 352-10 AS SHOWN ON SP 1460 & SP 1461.

TWP 08-14 WPM
- PNE 14; PNW 14; PSE 14 & PSW

LAND ACQUISITION BRANCH FILE NO.:	HLA-22-13460-0001
DISPOSITION NAME & NO.:	ROAD PTH 5 EID #74932
EXPIRATION DATE:	DECEMBER 9, 2032

I hereby certify that the above entry or entries has/have been (recorded/deleted or cancelled) in the Township Register/s

Erin McCartney
Digitally signed by Erin McCartney
Date: 2022.12.09 12:56:40 -06'00'

CROWN LAND REGISTRAR

Entry/Entries Requested by:

Corrine Charriere
A/Manager of Right of Way Acquisitions

NOTE – This form must be submitted in duplicate to the "Crown Lands Registrar". The duplicate being returned to the office concerned duly certified. The original being filed in the Lands Branch.

Minister of Natural Resources and Indigenous Futures

Legislative Building, Winnipeg, Manitoba R3C 0V8 CANADA

August 20, 2025

Honourable Lisa Naylor
Minister of Transportation and Infrastructure
minmti@manitoba.ca

Dear Minister Naylor:

I am writing in response to your department's request for an exemption under the Endangered Species and Ecosystems Act to conduct the following works as detailed in the letter from Blair McMahon dated July 25, 2025:

1. Replacement of the Provincial Trunk Highway 5 bridge over the Assiniboine River; and
2. Re-shaping of the river channel and construction of a relief bench to improve the hydraulic capacity of the new bridge and reduce the likelihood of catastrophic infrastructure failures.

I am pleased to inform you that this exemption has been granted with conditions.

This work will impact individuals and/or habitat of species designated under the Endangered Species and Ecosystems Act: Prairie Skink (Endangered) as you have identified in your proposal. Natural Resources and Indigenous Futures has further assessed that the project may have impact on the Western Hognose Snake (Threatened). These species are afforded specific protections under this Act.

The Act specifically prohibits damage and destruction of habitat that a listed species depends upon.

The Act also provides the Minister of Natural Resources and Indigenous Futures the authority to exempt a proposed development from provisions of the Act if the Minister is satisfied with the following:

- The protection and preservation of the species and its habitat is assured and,
- Appropriate measures are established or will be established to reduce to a minimum the impact of the development upon the species and its habitat.

…2

I will grant an exemption to Clause 10(1) of the Endangered Species and Ecosystems Act for the work identified above upon the following conditions:

- That your department implements the agreed mitigation plan as submitted in your proposal that is appended to this document and applies the same mitigation for Western Hognose Snake as Prairie Skink.as agreed with staff from the Wildlife Branch of Natural Resources and Indigenous Futures
- That your department assumes all financial responsibility for implementation and completion of the mitigation.
- That your department works with staff in the Wildlife Branch to monitor the success of the mitigation actions outlined in the plan.

Should you have any questions or require clarification please contact Tim Poole at timothy.poole@gov.mb.ca or 204-803-1523.

Honourable Ian Bushie
Minister

Enclosure(s) - PR201 Ministerial Exemption Request

c. Bruce Gray, Deputy Minister, Natural Resources and Indigenous Futures
Tim Poole, Zoology Conservation Manager, Habitat and Species at Risk Section, Wildlife Branch
Blair McMahon, Director, Environmental Services, Manitoba Transportation and Infrastructure

c. dmnrif@manitoba.ca
timothy.poole@gov.mb.ca
blair.mcmahon@gov.mb.ca

Review and Comment on EAP Report Addendum: "PTH 5 Bridge Replacement GHG Emission Review"
Climate Action and Energy Innovation Division (CAEI)
Comments Prepared March 20, 2026

CAEI completed review of the ***PTH 5 Bridge Replacement GHG Emissions Review*** **(EAP Report Addendum)** provided on March 4, 2026. The descriptive information on climate projections and greenhouse gas emissions included in the addendum is acknowledged.

With respect to the requested screening-level climate resilience assessment, the following statement was provided in the addendum as the proponent's response:

"A screening-level GHG and climate change assessment was considered, however with the information assembled in this report includes those variables that would be considered in this process, and in considering the information collected and assessed for this project, a formal CAEI assessment will not be completed."

Climate resilience considerations align with the *Environment Act's* purpose; namely, ensuring environmental protection "for this and future generations".

The *Act's* definition of "assessment" is broad and includes evaluation of factors relevant to environmental management across the life cycle of a project. For infrastructure with longer intended service lives, such as bridges, consideration of evolving climate hazards supports this intent, as these hazards can influence infrastructure reliability and associated environmental impacts over time.

The request is for:

- identification of key climate hazards applicable to the project at this site, and projected changes for those hazards across the project's intended service life,
- a high-level consideration of sensitivity or exposure,
- qualitative risk or materiality ratings relative to environmental and socioeconomic impacts, and
- identification of any adaptation measures, where appropriate.

This level of assessment is proportionate to the scope of the project and is particularly relevant for bridge replacement work in areas experiencing changing flood dynamics, altered freeze–thaw patterns, and climate-influenced river morphology.

CAEI requests that the proponent provides a high-level climate resilience narrative consistent with the elements outlined above.