



ACOUSTICS (NOISE AND VIBRATION), AIR QUALITY AND GREENHOUSE GASES PLAIN LANGUAGE SUMMARY

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The studies carried out for the Community Access Road looked at environmental conditions that might impact the public, Indigenous communities, federal authorities and other interested parties. These conditions, or valued component include acoustics (noise and vibration), air quality and greenhouse gas emissions.

Existing Conditions

Acoustics (Noise and Vibration)

Community noise levels, caused by activities such as road traffic, animals (e.g., dogs) and wind, were found to generally vary between 22 decibels and 38 decibels, indicating a quiet environment with occasional increases up to 55 decibels due to human activity, wind gusts and diesel generators. Remote noise levels, primarily caused by natural sounds such as wind in vegetation and wildlife, were lower than the Health Canada Noise Guidance for rural or remote areas.

Existing vibration levels are expected to be influenced by nature-based sources with little or no contribution from human-made vibrations.

Air Quality

Most air pollutants measured during field studies were below Ontario and Canadian air quality standards, except for particulates and Benzo(a)Pyrene, a harmful chemical in smoke, which is present due to wildfires and community wood burning.

Greenhouse Gas

The primary sources of greenhouse gas emissions are current community travel and land use. Due to the remote location of the Community Access Road, the environment has no significant sources of pollution aside from community transportation. Most existing greenhouse gas emissions originate from natural processes, such as vegetation, and from human activities such as local transportation, air travel and winter road traffic. Other sources, such as fuel use, are not expected to change significantly with the Community Access Road.

Potential Effects and Mitigations

Acoustics

Increase in Noise Levels

Construction activities will cause a temporary increase in noise levels, but these will be localized to the construction work areas. Noise levels will vary based on the type and number of noise sources (i.e., distance from the road or quarry), with higher noise levels closer to the construction sites; however, they are expected to stay within safe limits for humans at a maximum estimated noise level of 84 decibels at the edge of the construction work area. Once the Community Access Road is in use, noise from road traffic and maintenance will increase, though the increase will be intermittent and similar to or less than construction noise levels. To mitigate noise effects, the following mitigation measures are recommended:

- Work will be conducted during the day;
- Equipment will be well-maintained;
- Construction activities will be kept as far from sensitive receptors as possible;
- Vehicles will be turned off when not in use;
- Noise concerns will be addressed promptly; and
- Nearby Indigenous communities will be engaged early and often to coordinate the construction schedule, ensuring it does not interfere with traditional activities.



What is...

A sensitive receptor? A “sensitive receptor” can be people, animals, or a sensitive land use.

Increase in Vibration Levels due to Blasting

Blasting activities related to the construction and quarrying for the road will temporarily increase vibration levels. The amount of vibrations felt will depend on the size of the explosion and distance from the blast site. To mitigate the effects of increased vibration due to blasting, safety guidelines will be followed, with quarry blasts kept at least 190 metres and construction blasts 100 metres from sensitive receptors.

Increase in Vibration Level due to Construction and Long-term use

General construction activities will temporarily increase vibration levels near the Community Access Road, with the most significant effects occurring during pile driving, a process where large columns are hammered into the ground to create a stable foundation. Vibration levels will depend on the type and number of vibration sources and their distance from sensitive receptors. Vibrations from road traffic on the Community Access Road will meet human annoyance criteria (i.e. how much noise people can tolerate before they become annoyed) beyond 25 meters from the road's edge.

To mitigate vibration effects, the following mitigation measures are recommended:

- A detailed Construction Vibration Workplan plan will be developed;
- Work will take place during the day;
- Equipment will be kept away from sensitive receptors;
- Vibration concerns will be addressed promptly;
- Blasting will follow strict safety guidelines; and
- Nearby Indigenous communities will be engaged early and often to coordinate the construction schedule, ensuring it does not interfere with traditional activities.

Air Quality and Greenhouse Gas

Air Quality

This study assessed changes in the concentration of air contaminants. It also modelled greenhouse gas emissions that will be released from construction equipment, blasting and vehicles. Changes in how land use could affect carbon storage were also examined.

The study found that construction is not expected to have lasting negative effects on air quality, as any air quality issues arising from construction can be reversed. Higher levels of certain compounds in the air are expected near construction sites, but these levels will decrease with distance. Best Management Practices can help mitigate short-term impacts.

Since the Community Access Road will operate indefinitely, any remaining effects are considered permanent. Significant effects, like elevated levels of dust from vehicles on unpaved roads, are expected.

Greenhouse Gas

Construction and land use changes, including operations, are expected to result in a total of 1,969 kilotons of greenhouse gas emissions over 20 years. This total includes the loss of carbon stocks stored in plants, dead matter and soil. For example, converting peatlands and forests into roads reduces carbon stocks and releases greenhouse gases. A typical year of construction will result in the loss of 75 kilotons of carbon from these stocks in forests and wetlands, which is included in the 1,969-kiloton estimate.

The road may reduce greenhouse gases by replacing some air travel with road travel, however this was not fully measured due to limited data.

Residual Effects

Through the proper use of mitigation measures, the potential effects from the construction and long-term use of the Community Access Road are expected to be effectively managed, minimized or mitigated.

The Community Access Road will cause an increase in noise and vibration levels during both the construction and long-term use of the road. Mitigation measures will reduce the impacts of noise and vibration during construction. Noise and vibration effects during long-term use of the Community Access Road and quarrying for maintenance activities are expected to be low.

At the time of writing, the Residual Effects Assessment for air quality was not available to summarize. This information can be found in the appendix of the Draft Environmental Assessment / Impact Statement Report.

Cumulative Effects

The combined noise and vibration from Community Access Road in addition to other projects (e.g., Anaconda and Painter Lake Forestry Road Upgrades, Northern Road Link) could affect nearby areas, depending on the location, timing and overlap of heavy equipment use and road traffic. Effects will vary based on how close and active these sources are to sensitive receptors.

At the time of writing, the Cumulative Effects Assessment for air quality was not available to summarize. This information can be found in the appendix of the Draft Environmental Assessment / Impact Statement Report.



Want to learn more?

If you are interested in learning more about this topic, please review the technical report available in the appendix of the draft Environmental Assessment / Impact Statement.

Contact Info

You are welcome to contact the Marten Falls First Nation Community Access Road Project Team at any time with questions or comments.

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