



Stantec Experts-conseils Itée
101-4 Principal Street North, Amos QC J9T 2K6

June 7, 2017
File: 157710050-202-105-EN-R0004

Attention: Mr. Martin Desgagné

Interim Director
Cree Nation Government
Capital Work & Services
2, Lakeshore Road
Nemaska QC
J0Y 3B0

Reference: ADDENDA to the Project Notice for Wemindji Access Road

Redevelopment of a tight curve at km 4 and the addition of 6.6 km of works

Dear Mr. Desgagné,

Pursuant to the Environmental and Social Impact Assessment (ESIA) and Review Procedure established by the James Bay and Northern Quebec Agreement (JBNQA), Stantec prepared for the Cree Nation Government (CNG), the Project Notice for the Resurfacing and Paving of the Wemindji Access Road, along with a Model of Request for an Attestation of Exemption, which were transmitted to the Comité d'évaluation (COMEV) on March 6th, 2017. A complementary information letter followed on May 15th. As a response, you received the Attestation of Exemption for this project on May 23rd, 2017.

Following the desire of the CNG to add the reconstruction of a tight curve at km 4 of Wemindji access road as well as the extension of the resurfacing and paving works up to km 23, an addenda must now be presented to the COMEV with a request for an attestation of exemption for this part of the proposed work. Therefore, you will find below the information necessary for this demand.



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1. DESCRIPTION OF PROJECT MODIFICATIONS

1.1. OBJECTIVES AND JUSTIFICATION OF THE MODIFICATIONS

The general objective for the redevelopment of the curve is the safety of road users. Indeed, the curve of the km 4 presents a tight angle which poses a safety risk to users. In addition, rapidly increasing population growth in the community of Wemindji has resulted in increased traffic transportation on access road, and therefore the risk of accidents at this location.

Concerning the extension of resurfacing and paving work up to km 23, instead of km 16.4 as in the original project notice, the aim is to extend the works to the limit of Category 1 land.

1.2. MODIFICATIONS LOCATION AND LAND OWNERSHIP

As mentioned above, the modifications will consist of the redevelopment of the curve at km 4 of the access road and the resurfacing and paving of km 16.4 to km 23. All proposed modifications are located on Category 1A land, except for a few hundred meters of road that crosses on Category 1B land from km 16.4 to km 17.5. and from km to 21.8 km 23.

Figures 1, 2 and 3 show the location of the proposed changes.

2. GENERAL DETAILS OF THE ENTIRE PROJECT

2.1. AGGREGATE SUPPLY

In order to carry out the resurfacing and paving of the access road, the CNG received the authorisation from the Cree Nation of Wemindji to access and to use the borrow pits at km 2.5 (northern sector only) as the main production for the project, and the gravel pit at km 6 (north side of road only) for the main production of MG-112 (if possible) and gravel pits at km 9.5, 10.5 or 13.5A as a backup production for MG-112.

The granular requirements are approximately the following:

Granular production

- MG-112: 2,100 metric tons;
- MG-20: 105,500 metric tons;
- CG-14: 250 metric tons.



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Granular materials for pavement production

- ESG-14: 20,500 metric tons;
- ESG-10: 100 metric tons;

The signed authorisation of the Cree Nation of Wemindji for non-exclusive access to granular production site is joined at the end of the present document.

2.2. LOCATION OF THE BITUMINOUS CONCRETE PLANT

The exact location of the bituminous concrete plant will be determined by the contractor that will be chosen by the executive committee of CNG. However, whether the plant is located on Category 1 or Category 2 lands, the Contractor shall be required to comply with the location standards described in section 254.1 of the Environment Quality Act, namely:

- Outside a residential, commercial or mixed area and more than 300 meters from such a territory;
- A minimum distance of 60 m from any creek, river, river, sea, swamp or shoal and a minimum distance of 300 m from any natural lake;
- At least 35 m from the public thoroughfare;
- A minimum distance of 800 m from any dwelling, school or other educational, religious, camping or health facility.

The plant shall, among other things, respect the following requirements:

- The plant will only use liquid or gaseous fossil fuels other than waste oil;
- The plant, as well as any place of loading, unloading or depositing of the aggregates and any sedimentation pond used for the purposes of such a plant, will not be located in a stream of regular or intermittent flow, lake, pond, marsh, swamp or bog;
- The plant will not use residual materials in its process, except for dust recovered from a dust collector;
- There are no other bituminous concrete plants within a radius of 800 m.

Where the bituminous concrete plant is located on Category 2 lands, the Contractor will also be required to submit a Declaration of Compliance to the Minister of Sustainable Development, Environment and Fight Against Climate change at least 30 days before establishing the plant.



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3. ENVIRONMENTAL COMPONENTS AND PRINCIPAL CONSTRAINTS

The main biophysical and human components surrounding the proposed work area are defined as follow:

3.1. PHYSICAL ENVIRONMENT

Topography

Concerning the reconstruction work on the curve, which is approximately 600 m long, this curve is currently in a topographic trough. The elevation of the ground before the curve is about 30m. The terrain in the curve descends to a height of 24 m at the site of the watercourse and then ascends to 36 m. The new curve will follow somewhat the same topography, except that the ground level after the watercourse is somewhat higher, ie 39 m.

The work area from km 15.4 to km 23 has a slightly undulating terrain with a general slope eastward. The average elevation at km 16.4 is approximately 60 m to reach an elevation of 45 m at km 23.

Surficial geology

A geotechnical study was carried out by Englobe in 2015. A total of six stratigraphic boreholes were drilled in the exiting roadway. In four of the 6 boreholes, a horizon of peat moss was found (between 50 mm and 860 mm thick). Except for two boreholes where the natural bearing soil is a clay deposit, the other 4 soundings intercepted a natural deposit of granular material at depths varying between 2.10 m and 3.60 m.

Hydrography and Hydrology

According to the topographic map of the area of the curve, the existing road crosses one watercourse. Photo 1 below shows the culvert that allows the flow of the watercourse below the road.



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Photo 1: Entrance culvert in the low point of the curve



Between km 16.4 and km 23, the road crosses one watercourse. A small portion of the road runs along a peat bog over 900 m length. The watercourse and peat bog are indicated on figure 3.

Hydrogeology

According to the topographic map, presumed direction of groundwater flow in the work area is west, i.e. towards James Bay.

3.2. BIOLOGICAL ENVIRONMENT

No floristic or wildlife inventory has been carried out within the framework of this mandate. However, the works are to be realized on an existing road except for the new curve. It should be noted that the road passes through a 900 m zone of wetland and crosses one watercourse between km 16.4 and km 23. A new culvert will be installed in the watercourse when the new curve is constructed.

3.3. HUMAN ENVIRONMENT

The proposed rehabilitation work will be carried out of the village at a distance of about 4 km and 16,4 km.



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3.4. PRINCIPAL CONSTRAINTS

From the above, the principal constraints are the installation of a culvert during the construction works for the new curve, the presence of a wetland along 900 m of the path on north side of the road and the crossing of one watercourse between km 16.4 and km 23.

4. PRINCIPAL IMPACTS

The main impacts associated with the redevelopment of the curve and road rehabilitation and paving of access roads will relate to:

- ✓ Transportation, traffic and operation of machinery;
- ✓ Management of hazardous waste and materials, if any;
- ✓ Installation of a culvert;
- ✓ Reconstruction of ditches;
- ✓ Rehabilitation and paving work.

4.1. PHYSICAL ENVIRONMENT

The project activities could have an impact on certain components of the physical environment:

- ✓ Soil quality can be impaired by the accidental spill of petroleum or other products during refueling of vehicles and machinery. Much of the work will be done on existing infrastructure. A low environmental value is given to this element;
- ✓ Changes in air quality caused by dust particulate emissions from the passage of heavy trucks and the operation of machinery;
- ✓ Risk of contamination of surface water by accidental spills (on land with runoff to a watercourse or directly into a watercourse) of petroleum products during handling or by the use of machinery, and by temporary storage of construction waste on site (leaching);
- ✓ Risk of contamination of groundwater by accidental spills (on the ground with migration to groundwater) of petroleum products during handling or by the use of machinery, and by the temporary storage of waste construction on the site.
- ✓ The modification of surface drainage and the addition of suspended matter in the water courses during the cleaning, reconstruction or replacing of culverts and construction of ditches can impair the quality of surface water. Considering the presence of wetlands



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around the work area and the crossing of watercourses, a high environmental value is given to this element;

4.2. BIOLOGICAL ENVIRONMENT

The project activities could have an impact on certain biological components of the environment or on the aquatic fauna, flora and habitats. Indeed, the activities could emit debris and fine particles to fish habitat. Here is a list of possible impacts:

- ✓ Destruction of aquatic and riparian vegetation by the cleaning, installation of culvert and construction of ditches;
- ✓ Disturbance of aquatic habitat by the installation of a culvert and construction of ditches near the watercourses;
- ✓ Ditches can drain wetlands in the vicinity, possibly drying out wetlands.

4.3. HUMAN ENVIRONMENT

The project activities will have an impact on certain components of the human environment or quality of life (traffic associated with the construction site, noise, road users, long time, etc.) and health and security. Here is a list of possible impacts:

- ✓ Disruption of traffic (slowing down) on access road during works;
- ✓ The coexistence of construction equipment, trucks and passenger vehicles on access roads during works may cause accidents due to distraction by motorists;
- ✓ The goal of rehabilitating and paving access road is to increase the safety of users who use it.

5. MITIGATION MEASURES

Several mitigation measures will be applied during the work. Without limitation, these are the main measures that will be applied:

5.1. PHYSICAL ENVIRONMENT

- ✓ The contractor will have an emergency oil recovery kit;
- ✓ The contractor will dispose of its waste, oils, chemicals or other, whatever their nature, in compliance with applicable laws and regulations;



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- ✓ Parking and storage areas or other temporary development will be located at least 60 m from the water environment. The only permitted deforestation is the one necessary for the execution of the works.
- ✓ Filling up of gas and mechanical maintenance and repair of rolling stock will be carried out at a distance of at least 15 m from a body of water. The contractor must avoid contamination of the environment.
- ✓ It will be forbidden to work in the watercourse, to circulate or ford it with heavy equipment.
- ✓ In all areas of the site where there is a risk of erosion, the soil will be stabilized;
- ✓ If the vehicles running on the granular foundation cause excessive dust emanation, the surface will be treated with water or dust-control products.
- ✓ Temporary or permanent measures will be implemented to protect the soil against erosion or to capture suspended matter.
- ✓ During construction, sediment traps or retention ponds will be installed to avoid directing runoff directly to watercourses and wetlands;

5.2. BIOLOGICAL ENVIRONMENT

- ✓ The effectiveness of the plant recovery over a period of 24 months will be ensured after completion of the work;
- ✓ Shoreline interventions will be limited by maintaining maximum vegetation and avoiding the use of machinery;
- ✓ A 10 m protected band of shoreline will be kept to maintain the integrity of the shoreline.
- ✓ Circulation in wetlands will be limited as possible;
- ✓ A work restriction period based on the life cycles of the species present in the aquatic environment will be schedule and respect;
- ✓ Maintain free movement of fish by avoiding the creation of obstacles in the watercourses;

5.3. HUMAN ENVIRONMENT

- ✓ A safe access to residences will be maintained during construction;
- ✓ The work will be planned taking into account the possibility of holding special events (festival, regional popular festival, etc.);
- ✓ A proper maximum speed will be ensured for traffic on access road <;



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- ✓ Work announcements indicating the progress of future activities will be issued to inform the users and representatives concerned (communication plan);
- ✓ Adequate signage will be maintained in accordance with local requirements;
- ✓ Close to the village, the construction site and the work scheduling will be planned so as to limit the noise impact during the night;
- ✓ Traffic lanes will be kept in good condition at all times and necessary measures will be taken so that they can be used and crossed without any problems by other users.

5.4. ENVIRONMENTAL CLAUSES OF THE SPECIFICATIONS

Section E of the Specification specifies the following requirements:

12.0 PROTECTION OF THE ENVIRONMENT

Old and non-reusable equipment pieces, used tires, empty containers and waste liquids must be removed from the area and disposed of, according to regulations in force: they must never be burned on site

Maintenance and repair of equipment must be done in suitably designated locations; any temporary location must allow for recycling of used oils or any other contaminant; these locations must be located at least 150 meters away from any streams or rivers.

Exhaust systems of all vehicles or equipment being used for construction must be in good order of repair so they will not disturb residents unduly.

Fuel depots or other oil products must be located in areas far enough away so as not to endanger any human life in case of deflagration; as well they must be located at least 60 meters away from any streams or rivers.

Deforestation can only be done with authorized mechanical methods. The use of herbicides is forbidden.

Permission must be obtained from the assignor or occupier, before cutting fences. Pickets must be braced on each side of the right-of-way, so as to maintain the same tension in the remaining sections.



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When the works are ended, the Contractor has to remove from the right-of-way, not only his materials but also the unused, the waste and rubbishes, pebbles and rock, fragment of wood, stumps, roots; clean the places of materials and equipment's; put back in good condition ditches and streams which he blocked; repair or reconstruct fences and other necessary works which he demolished or damaged and to have all the removed materials by transporting them out of the right-of-way and it not so as to spoil the neighborhoods of the works or the related works; the whole to the satisfaction of the engineer. Finally, he has to repair all other damages he caused on the site of the works, in the public or private property caused by his operations, in plans of water, in sites of camp and storage of the material, the storing or the supply of materials, to the environment and/or to the agricultural territory.

36.0 CLEANING

When the work is completed, the Contractor shall remove on the right of way corridor not only their equipment but unused materials, waste and scrap, rocks and stones, woody debris, stumps, roots, clean the locations of materials and tools, repair damaged ditches and streams that he obstructed, repair or rebuild fences and other works necessary he demolished or damaged and have all the materials removed by carrying out right of way and that so as not to disfigure the edges of the work or related works, all to the satisfaction of the Engineer. Finally, he must repair all other damages or damage it has caused on the site of the work, to public or private property affected by its operations, water bodies, the camp site and storage of materials, storage or supply of materials, environmental and / or agricultural land. It should also proceed with the restoration of forest cover on forest land in the public domain.

It should also be noted that the construction work will be under the constant supervision of Stantec, which will ensure that the contractor is in compliance with the regulatory requirements and the specifications requirements throughout the work.

6. PUBLIC CONSULTATION PROCEDURES

Community local government administration (Director General, Treasurer & Capital Work Personnel) have been consulted by the CNG about those modifications.

7. PROJECT SCHEDULING

The CNG would like to begin the rehabilitation and paving works and the end of June 2017.

The estimated duration of work for Wemindji Access Road is 14 weeks.

Design with community in mind



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8. SUBSEQUENT PHASES AND RELATED PROJECTS

No subsequent phases or related projects are foreseen at the present time.

9. PUBLIC CONSULTATION PROCEDURES

No public consultations are planned ahead for the rehabilitation of access roads.

10. REMARKS

We confirm that all information presented in the present notice are precise to the best of our knowledge.

Regards,

STANTEC EXPERTS-CONSEILS LTÉE

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Attachment: Figure 1: Addenda – General location of the curve
Figure 2: Addenda – Detailed location of the curve
Figure 3: Addenda – Location of the extension of works

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FIGURES

**AUTHORISATION TO ACCESS AND USE
CREE NATION OF WEMINDJI'S BORROW
AND GRAVEL PITS**

**ATTESTATION OF EXEMPTION FOR THE
RESURFACING AND PAVING OF ACCESS ROAD
FROM THE COMMUNITY UP TO KM 16.4**