

ARRETÉ NUMÉRO 23-02-2018

ARRETÉ MODIFIANT LE PLAN RURAL DU VILLAGE DE NIGADOO **ÉTANT L'ARRETÉ NUMÉRO 23-2014**

Le conseil du Village de Nigadoo, en vertu des pouvoirs qui lui sont conférés par la *Loi sur l'urbanisme*, adopte ce qui suit:

Article 1. L'article 3 de la Partie A du plan rural est éliminé et remplacé par ce qui suit :

3. Pour l'application du présent plan rural, le territoire de la municipalité est divisé en zones délimitées sur le plan joint à l'Annexe A et intitulé "Carte de zonage du Village de Nigadoo" en date du 16 juin 2014, et amendé par :
 - (a) la carte portant le numéro 23-01-2017 et placée à l'annexe B de l'arrêté no 23-01-2017 en date du 24 janvier 2017,
 - (b) la carte portant le numéro 23-02-2018 et placée à l'annexe B de l'arrêté no 23-02-2018 en date du 13 mars 2018,

Article 2. Le paragraphe 60(1) de la Partie C du plan rural est éliminé et remplacé par ce qui suit :

- (1) Pour l'application de la présente partie, le territoire de la municipalité est divisé en zones délimitées sur le plan qui figure à l'Annexe A, en date du 16 juin 2014 et intitulé "Carte de zonage du village de Nigadoo", et amendé par :
 - (a) la carte portant le numéro 23-01-2017 et placée à l'annexe B de l'arrêté no 23-01-2017 en date du 24 janvier 2017,
 - (b) la carte portant le numéro 23-02-2018 et placée à l'annexe B de l'arrêté no 23-02-2018 en date du 13 mars 2018,

Article 3. Le terrain dont la zone est identifiée sur la carte 23-02-2018 et placée en Annexe B du présent arrêté est désigné Zones industrielles de type 1 – Zones IND-1.

Article 4. En addition aux dispositions relatives aux Zones IND-1 contenue dans l'arrêté 23-2014, l'utilisation des terrains, bâtiments et constructions sur les propriétés décrites à l'annexe B doit se conformer aux termes et conditions de la résolution et de l'entente placées à l'annexe C du présent arrêté et adoptées en vertu des dispositions de l'article 59 de la *Loi sur l'urbanisme*.

Article 5. La Carte de désignation des rues du village de Nigadoo mentionnée à l'article 5.5.2 de la Partie B du Plan rural est modifiée pour ajouter le Chemin Degrâce à titre de Rues désignées. Cette carte est placée à l'annexe D du présent arrêté.

Article 6. Le présent arrêté entre en vigueur conformément à la Loi.

PREMIERE LECTURE (par les titres): _____ 2018

DEUXIEME LECTURE (intégrale): _____ 2018

TROISIEME LECTURE (par les titres) _____ 2018

ADOPTION : _____ 2018

Charles Doucet
Maire

Vincent Poirier
Secrétaire municipal



Carte 23-02-2018
 Village de Nigadoo
 Amendement du plan rural
 Annexe B
 (à l'arrêté 23-02-2018)

Légende
 Portion du terrain à rezoner

Portion du propriété portant le
 NID 20275798 est rezone
 de MX-1 - Zones mixtes de type 1
 et
 à
 R2-1 - Zones résidentielles desservies
 de faible densité de type 1
 à
 IND-1 - Zones industrielles de type 1

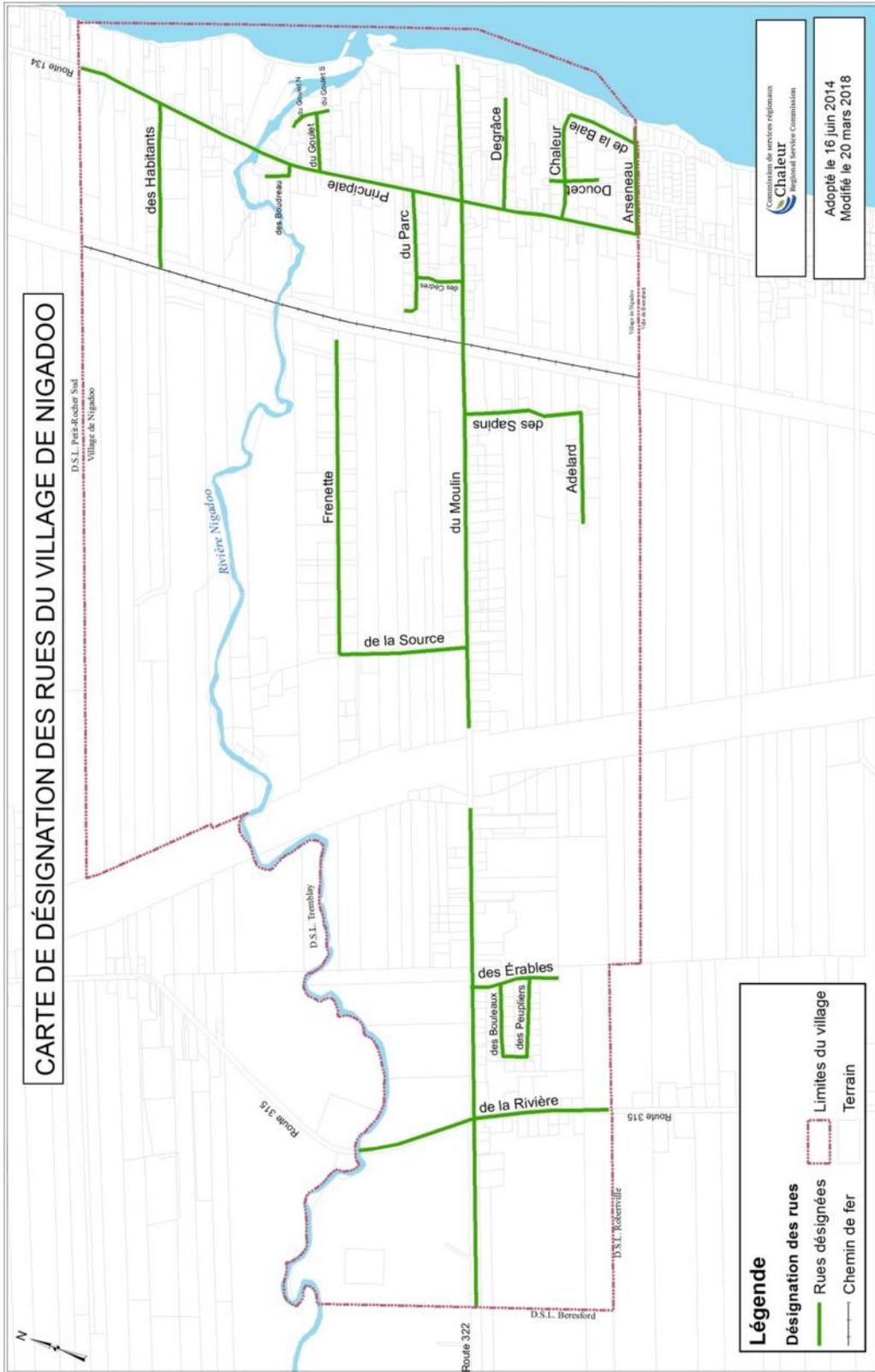
Propriété de :
POISSONNERIE ARSENEAU
 FISH MARKET LTÉE/LTD

Commission de services régionaux

 Regional Service Commission
 Date: Le 13 mars, 2018



« ANNEXE D »





Stantec Consulting Ltd.
845 Prospect Street, Fredericton, NB E3B 2T7

February 20, 2018
File: 121812836

Attention: Maryse Frenette
Poissonnerie Arseneau Fish Market
221 Rue Principale
Nigadoo, NB E8K 3S9

Dear Ms. Frenette,

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

INTRODUCTION

Stantec Consulting Ltd. (Stantec) is pleased to provide this letter report to Poissonnerie Arseneau Fish Market Ltée/Ltd (the Fish Market). This report summarizes the acoustic assessment that was conducted for your facility at 221 Rue Principale, Nigadoo, New Brunswick. The objective of the work was to assess potential changes in sound levels from a proposed cold storage facility on the site. During the summer months, the Fish Market operates up to six refrigeration (reefer) truck trailers adjacent to the Fish Market. These trailers operate 24 hours per day and can generate noise that effects the nearby residents. The proposed cold storage facility will reduce the number of refrigeration trailers during the summer from six to three.

The study included:

- Measurements of baseline sound levels in the area;
- Source testing of existing equipment; and
- Modelling of both the existing facility and a future case.

The future case includes a proposed cold storage building operating on a recently acquired property located adjacent to the existing Fish Market. This work was undertaken as part of a re-zoning application for the property, which has recently been acquired by the Fish Market. The new property is currently zoned residential/commercial.

The Fish Market is on Route 134 (Rue Principale), which is a two-lane regional highway. It is the main route for local traffic for communities along the northeastern coast of New Brunswick. Both residences and commercial buildings are found on Route 134. There is concern for the potential for increased noise at nearby residences due to the proposed cold storage facility. There are seven residences near the Fish Market that may be affected by changes to sound sources.

METHODOLOGY

The sound pressure level measurements and modelling methodologies used by Stantec for the acoustic assessment are described below.

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

SOUND MONITORING

Stantec conducted sound monitoring on January 15 and 16, 2018 at the Fish Market property. Two separate monitoring events took place: baseline monitoring near Route 134 and source testing measurements of the Fish Market's operating equipment. Both events were conducted during normal operation of the Fish Market (i.e., sound generating equipment operating normally).

The baseline monitor was located approximately 10 m from Route 134 on the Fish Market property. The instrument used for baseline monitoring was mounted on a tripod at approximately 1.5 m height above grade. Measurements were taken from 12:00 PM on January 14, 2018 to 6:00 AM on January 15, 2018.

The sound pressure level measurements and the monitoring were performed using a Type 1 precision sound level monitor with 1/3 octave band resolution. Overall sound pressure levels were also recorded on the A-weighted scale in decibels (dB_A). The sound pressure level data were logged at 1-second intervals and used to calculate 1-hour equivalent sound pressure levels (1-hour L_{eq}). The L_{eq} is the steady sound level that, over a specified period of time, would produce the same energy equivalent as the fluctuating sound level actually occurring. This value represents the integrated noise exposure over the time period of the measurement and is the basis for many noise guidelines or limits. The A-weighting is used to reflect the human ear's sensitivity to different frequencies. The sound monitoring equipment was field calibrated prior to the monitoring events with a calibrator that is traceable to applicable international standards of measurement and all equipment is laboratory calibrated every two years.

Stantec personnel completed source testing of the following equipment at the Fish Market:

- Trailer refrigeration units; and
- Aerial coolers used for refrigeration in the existing building.

For the aerial coolers, sound was measured at the face of the cooler fans and the side of housing (i.e., within 1 m of the source). For the trailer refrigeration units, measurements were made at 1 m, 2 m, and 10 m from the source.

During the baseline monitoring and the sound pressure measurements the wind speed was low and rain was not occurring. Both wind and rain can increase the measured sound pressure levels. The ambient temperature during monitoring was approximately -13°C to -20°C. The Fish Market sources (i.e., aerial coolers and trailer refrigeration units) were not operating overnight.

SOUND MODELLING

Stantec calculated the sound power levels of the Fish Market sound sources at each frequency observed using the sound pressure level measurements and the distance between the sound source and the monitor. These sound power levels were used in the sound modelling software CADNA. The CADNA model is based on the ISO 9613 (1996) standard. Key settings of the model used include:

- Ground absorption: 0.5;
- Ambient relative humidity: 70%;
- Ambient temperature: 10°C; and
- Search radius: 2 km.

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

Obstacles such as buildings and refrigeration trucks were also entered into CADNA, as obstacles reduce the transmission of sound energy.

Two cases were modelled:

- Existing operation of the Fish Market during the summer time, when up to seven reefer trucks are parked to the south of the building and operate continuously (i.e., 24 hours per day). Other sources include 8 cooler fans located to the north (2), east (4), and south (2) sides of the building.
- Future operation of the Fish Market during the summer time. A new cold storage building would be built to the south of the existing building. The new building replaces three of the reefer truck trailers from the existing operation. Eight new cooler fans would be located to the east of the new building (i.e., the side opposite of the nearest residences). All other sound sources remain the same as in the Existing Case.

The sound sources considered in the models are those from the operation of the Fish Market. Stantec used the results from the models to estimate the sound pressure levels at the nearest residences.

The seven nearest residences to the Fish Market were selected as receptors in the model. These receptors are identified in Table 1.

Table 1 Receptors in CADNA Model

Receptor Number	UTM 20 Coordinates (NAD83) (m)	
	Easting	Northing
1	296667	5292236
2	296667	5292301
3	296685	5292280
4	296671	5292445
5	296725	5292211
6	296823	5292467
7	296839	5292469

The receptor locations in the model were set to 4 m, which is the height of a typical two-storey residence. Because the terrain around the Fish Market is relatively flat, elevation data was not incorporated into the model.

Stantec converted the sound pressure measurements of the aerial coolers and trailer refrigeration units to sound power measurements for use in the acoustic model using ISO 9613.

The baseline results were combined with the predicted sound pressure levels at the receptors due to the Fish Market operation to estimate the sound pressure level experienced by the residences in both the Existing and Future Cases. The estimated sound pressure levels occur at the outer façade of the residences; residents inside would experience lower sound pressure levels when inside if windows and doors are closed.

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

The sound sources, obstacles, and receptors for the Existing and Future Cases are shown in Figures 1 and 2.

REPORTING OF RESULTS

Baseline sound monitoring results are presented in Table 2.

Table 2 Baseline Sound Monitoring Results, Fish Market

Hour Ending	1-hr L_{eq} (dBA)
1/14/18 12:00:00	62.9
1/14/18 13:00:00	62.3
1/14/18 14:00:00	63.4
1/14/18 15:00:00	64.1
1/14/18 16:00:00	63.4
1/14/18 17:00:00	64.1
1/14/18 18:00:00	62.8
1/14/18 19:00:00	61.6
1/14/18 20:00:00	59.8
1/14/18 21:00:00	58.8
1/14/18 22:00:00	56.8
1/14/18 23:00:00	55.2
1/15/18 0:00:00	52.8
1/15/18 1:00:00	46.3
1/15/18 2:00:00	45.6
1/15/18 3:00:00	49.9
1/15/18 4:00:00	46.8
1/15/18 5:00:00	51.2
1/15/18 6:00:00	57.2
1/15/18 7:00:00	59.9

The dominant noise source over this period was vehicular traffic along Route 134. Night time 1-hour L_{eq} sound pressure level was as low as 45.6 dBA.



Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, MER, Esri China (Hong Kong), swisstopo, and the GIS User Community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aergrid, IGN, IGP, swisstopo, and the GIS User Community

Noise Sources and Receptors for the Existing Operations



Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aergrid, IGN, IGP, swisstopo, and the GIS User Community

Noise Sources and Receptors for the New Proposed Building

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

The average sound power levels for the existing equipment entered in the model are summarized in Table 3.

Table 3 Equipment Sound Power Levels Results, Fish Market

Description of Source	Average Sound Power Level (dBA)
In front of trailer refrigeration unit	79.7
Next to trailer refrigeration unit	87.8
Above cooler fan on north side of building	76.7
Next to cooler fans on east side of building	80.4
In front of trailer refrigeration unit	106

The predicted sound pressure levels for the Existing and Future Cases are shown in Table 4. Nighttime is the focus of the acoustic study, as during the day traffic noise from Route 134 is the dominant source of noise at the nearest residences.

Table 4 Assessment Results, Fish Market

Receptor	Night Time Baseline SPL	Existing Case ¹	Future Case ²	Total SPL for Existing Case ³	Total SPL for Future Case ³	Change in SPL (Future Case - Existing Case)
	1-hour L _{eq} (dBA)	dBA	dBA	dBA	dBA	dBA
1	45.6	56.6	46.3	56.9	49.0	-8.0
2		57.6	46.4	57.9	49.0	-8.8
3		58.8	48.2	59.0	50.1	-8.9
4		49.2	45.3	50.8	48.5	-2.3
5		58.5	43.9	58.7	47.8	-10.9
6		48.2	48.2	50.1	50.1	0.0
7		47.8	47.9	49.8	49.9	0.1

SPL – sound pressure level

¹Modelled SPL based on the source testing of noise generating equipment on site

²Modelled SPL based on proposed location, number, and type of noise generating equipment during future operations as provided by Poissonnerie Arseneau.

³Total SPL = modelled SPL + night time baseline SPL

Sound pressure levels were calculated to be between 47.8 dBA to 58.8 dBA during the summer at night. These levels are equivalent to those found in an office setting (AER 2007).

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

The estimated Future Case sound pressure levels at the residences range from 43.9 dBA to 48.2 dBA. These levels are equivalent to a conversation in a quiet home (AER 2007). The decrease in sound pressure levels from the Existing Case would be noticeable for residents.

The modelling results are shown graphically in Figure 3 (Existing Case) and Figure 4 (Future Case).

There are no provincial or municipal numerical limits on sound pressure levels for New Brunswick other than specific limits included in some facilities' Approvals to Operate. In general, noise regulations vary considerably across municipalities, regions, and provinces. Nova Scotia Environment (NSE) has established the following criteria for the provincial guideline:

- an L_{eq} of 65 dBA between 07:00 to 19:00 hours;
- an L_{eq} of 60 dBA between 19:00 to 23:00 hours; and
- an L_{eq} of 55 dBA between 23:00 to 07:00 hours (NSE, no date).

When compared to these sound pressure level objectives, the baseline sound pressure levels are just below the criteria set by the province of NS for daytime and evening; and just above the nighttime criterion of 55 dBA at Receptor 1, 2, 3, and 5. The Existing Case results shown in Table 4 indicate that during the summer, the NSE nighttime criteria could potentially be exceeded at the two nearest residences. The Future Case results shown in Table 4 are below all criteria including the nighttime criterion.

SUMMARY

During the daytime, traffic on Route 134 is expected to be the primary recognizable sound source at the residences nearest to the Fish Market. During the summer at night when traffic on Route 134 is low, the Fish Market currently produces noticeable sound at the nearest residences. With the proposed design of the cold storage facility and removal of some of the refrigeration trucks that are currently needed, it is anticipated that noise levels from the Fish Market will decrease and be similar to existing baseline noise from road traffic. Sound levels are predicted to be less than the NSE nighttime sound pressure level criterion of 55 dBA.



Service Layer Credits: Sources: Eri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBasis, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Noise Contours of Existing Operations During Summer



Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, MER, Esri China (Hong Kong), swisstopo, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Noise Contours of Future Case Operations in Summer

Reference: Sound Monitoring - Poissonnerie Arseneau Fish Market, Nigadoo, NB

CLOSING

This letter has been prepared for the sole benefit of Poissonnerie Arseneau Fish Market Ltée/Ltd. The letter may not be relied upon by any other person or entity without the express written consent of Poissonnerie Arseneau Fish Market Ltée/Ltd and Stantec.

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This letter report was prepared by Christina Varner, P.Eng. and Brian Bylhouwer, P.Eng. with technical review by Vicki Corning, P.Eng. and independent review by John Walker Ph.D. Should you have any questions or concerns please feel free to contact the undersigned.

Regards,

Stantec Consulting Ltd.

Draft not signed

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