



Gamsby and Mannerow
ENGINEERS



January 17, 2014

Our File: 109012

Township of Puslinch
7404 Wellington Road 34
Guelph, ON N1H 6H9
Attention: Mr. Don Creed
Director of Public Works and Parks

Re: Sound Levels Assessment
Puslinch Optimist Recreation Centre
23 Brock Road South
Aberfoyle, ON

Dear Mr. Creed:

This letter report is to present the findings of the sound levels assessment completed on December 30, 2013 to investigate the transmission of sound from the Puslinch Optimist Recreation Centre (ORC) to the neighbouring properties fronting along Maple Lane in Puslinch, Ontario.

BACKGROUND

The purpose of the sound level assessment was to determine whether the ORC ice rink compressor was contributing to a level of sound that is above the general "urban hum" that could be expected from a low density urban setting.

For the purpose of this assessment the residential area along Maple Lane was considered to be a "Class 2 area" where the background sound levels are predominately road traffic and the activities of people between the hours of 0700 to 1900. The Ministry of the Environment (MOE) document "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" Publication NPC-300 was used as a reference in completing the assessment. The referenced document outlines the sound level limits for the different class areas as noted below in MOE Table B-2.

Table B-2
Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq} , dBA)
Plane of Window of Noise Sensitive Spaces

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 07:00	45	45	40	55

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METHODOLGY

The assessment included the completion of two measurements, each of 25 minutes and 1 second in duration with readings collected every 30 seconds, using a Quest Technologies Sound Pro II sound level instrument. The two measurements were completed in close succession with the first measurement collecting readings of the background sound levels of the general area (referred to as “background”) and the second measurement collecting background sound levels and the addition of the ORC ice rink compressor noise (referred to as “active”).

The sound levels were recorded with the microphone, equipped with a windscreen, oriented in the direction of the stationary sound source (ORC ice rink compressor) and placed at a height of 1.53 metres above the ground surface. The microphone was placed in front of the main access door to 8 Maple Lane to best represent an area where, if open, sound would likely transmit into the residence.

FINDINGS

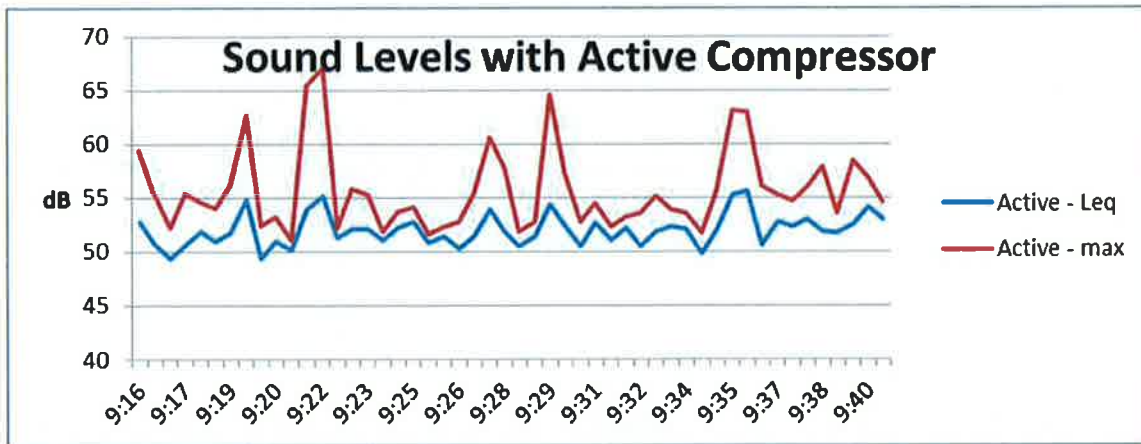
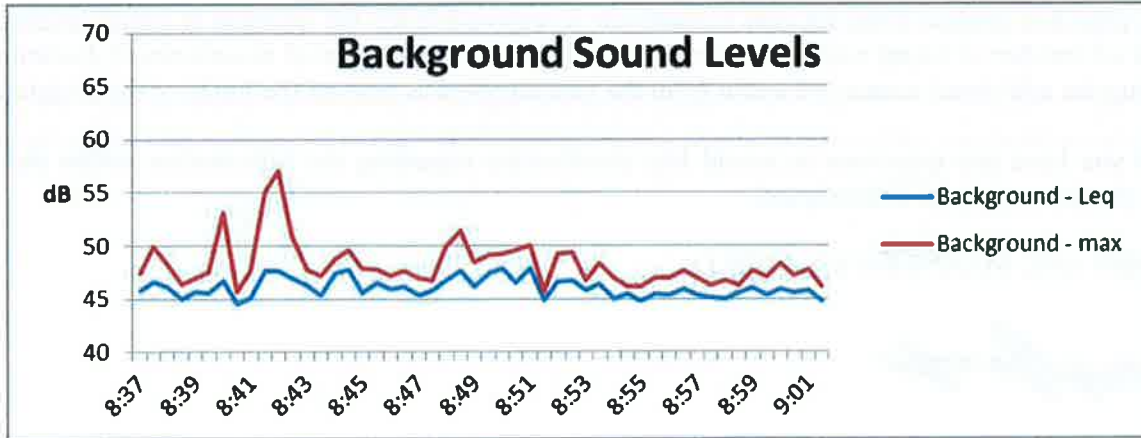
The weather during the sound level assessment was partly cloudy, calm air with an approximate temperature of -12°C.

The background sound level measurement occurred between 0837 and 0901. During the background measurement the reported discernible sounds included vehicular traffic being transmitted from Brock Road South (approximately 130 metres to the east of the test location) and low level human conversation occurring outside the ORC in the ice rink area.

The active measurement occurred between 0916 and 0940. During the active measurement an increase in vehicular traffic both along Brock Road South and at the ORC was noted. Additionally, the number of human conversations and activities that occurred at the ORC also increased from the background to the active sound level measurements. Also of note was the one minute conversation between G&M staff and the resident of 10 Maple Lane that occurred at 0921 hrs. The ORC ice rink compressor was running for the full duration of the active measurement.

The results of the background and active sound level measurements are presented below in the correspondingly labelled charts.





The average L_{eq} for the background measurement is 46.1 decibels (dB) and is 51.9 dB for the active measurement representing an increase in 5.8 dB.

Averaged maximum sound level readings of 48.3 dB and 55.7 dB were recorded for the background and active compressor measurements, respectively.

DISCUSSION

The background sound level measurement (46.1 dB) is within the MOE guideline for a Class 2 area.

The active sound level measurement would suggest that the combined average sound levels (55.7 dB) being transmitted from the ORC in the direction of the residential house at 8 Maple Lane are above the MOE guideline of 50 dB.

At this time it is unclear if the ice rink compressor is responsible for the increase in sound levels as the number of number of sound sources increased during the active sound level measurement. Isolating and removing the additional sources of sound from the measurement is beyond the limits of the assignment.

Should you have any questions or would like clarification regarding the information within the letter report, please contact the undersigned.

GAMSBY AND MANNEROW LIMITED

Per:



Cory Young, B.Sc.-Env.Sc, C.Tech.

CY/sc





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March 13, 2014
Our File: 109012

Township of Puslinch
7404 Wellington Road 34
Guelph, ON N1H 6H9

Attention: Mr. Don Creed
Director of Public Works and Parks

Re: Sound Levels Assessment
Puslinch Optimist Recreation Centre
23 Brock Road South
Aberfoyle, ON

Dear Mr. Creed:

This letter report is to present the findings of the sound levels assessment completed on March 5, 2014 to investigate the transmission of sound from the recently installed ice rink compressor located within the Puslinch Optimist Recreation Centre (ORC) to the neighbouring properties fronting along Maple Leaf Lane in Puslinch, Ontario.

BACKGROUND

The purpose of the sound level assessment was to determine whether the ORC ice rink compressor was contributing to a level of sound that is above the general "urban hum" that could be expected from a low density urban setting.

For the purpose of this assessment the residential area along Maple Leaf Lane was considered to be a "Class 2 area" where the background sound levels are predominately road traffic and the activities of people between the hours of 0700 to 1900. The Ministry of the Environment (MOE) document "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" Publication NPC-300 was used as a reference in completing the assessment. The referenced document outlines the sound level limits for the different class areas as noted below in MOE Table B-2.

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Table B-2
Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq} , dBA)
Plane of Window of Noise Sensitive Spaces

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 07:00	45	45	40	55

Since the December 2013 sound levels assessment the Township of Puslinch has replaced the ice rink compressor with a newer unit. The purpose of this sound levels assessment is to measure and record the resulting sound levels with the new compressor.

METHODOLOGY

The assessment included the completion of two measurements, each of 25 minutes and 1 second in duration with readings collected every 60 seconds, using a Quest Technologies Sound Pro II sound level instrument. The two measurements were completed in close succession with the first measurement collecting readings of the background sound levels of the general area (referred to as “background”) and the second measurement collecting background sound levels and the addition of the ORC ice rink compressor noise (referred to as “active”).

The sound levels were recorded with the microphone, equipped with a windscreen, oriented in the direction of the stationary sound source (ORC ice rink compressor) and placed at a height of 1.61 metres above the ground surface. The microphone was placed in front of the main access door to 8 Maple Leaf Lane to best represent an area where, if open, sound would likely transmit into the residence. The collection of information and location of the microphone is similar to the December 2013 sound level assessment.

FINDINGS

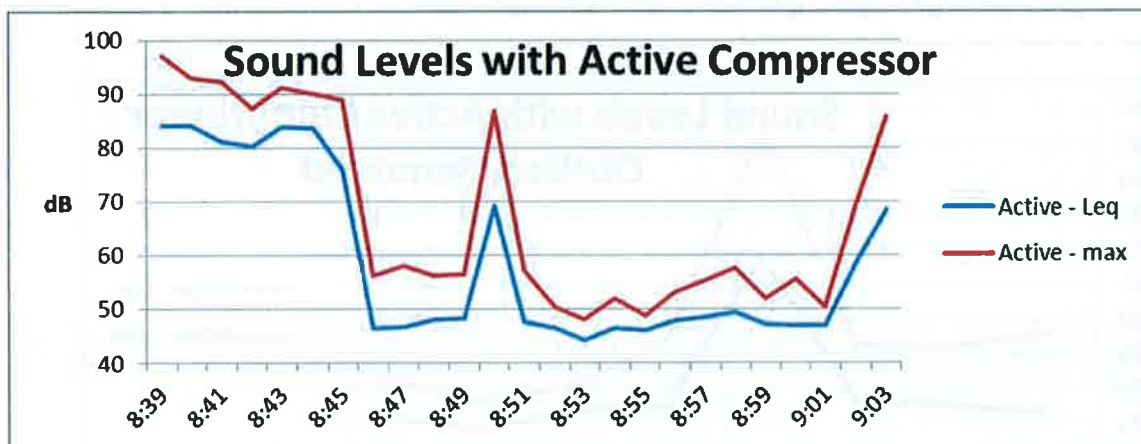
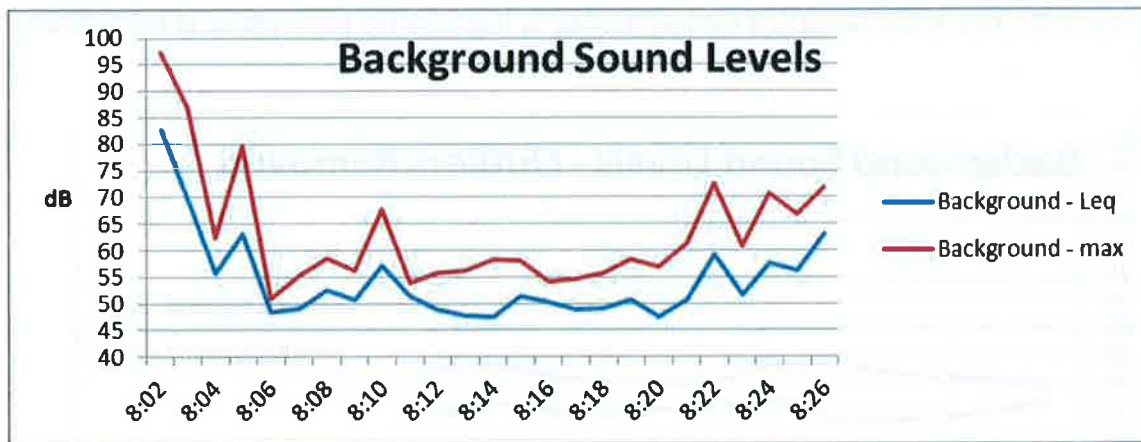
The weather during the sound level assessment on March 5th, 2014 was partly cloudy with calm air and an approximate temperature of -12°C.

The background sound level measurement occurred between 0802 and 0826. During the background measurement the reported discernible sounds included vehicular traffic being transmitted from Brock Road South (approximately 130 metres to the east of the test location), general household noise from within the residence and local wildlife (birds) in the area. The initial sound level measurements are deemed to be artificially elevated due to personnel movement in close proximity to the sound level instrument. At approximately 0821 hours the residents of the house (#8 Maple Leaf Lane) opened the garage door and then left the premises. The increased noise levels were recorded until the end of the measurement period.



The active measurement occurred between 0839 and 0903. During the active measurement an increase in vehicular traffic along Brock Road South was noted. A conversation occurred between the ORC building and the sound level measuring location at the beginning and the end of the 'active' measurement. At approximately 0850 an automobile was started in this same location and left the area. The ORC ice rink compressor was running for the full duration of the active measurement.

The results of the background and active sound level measurements are presented below in the correspondingly labelled charts.

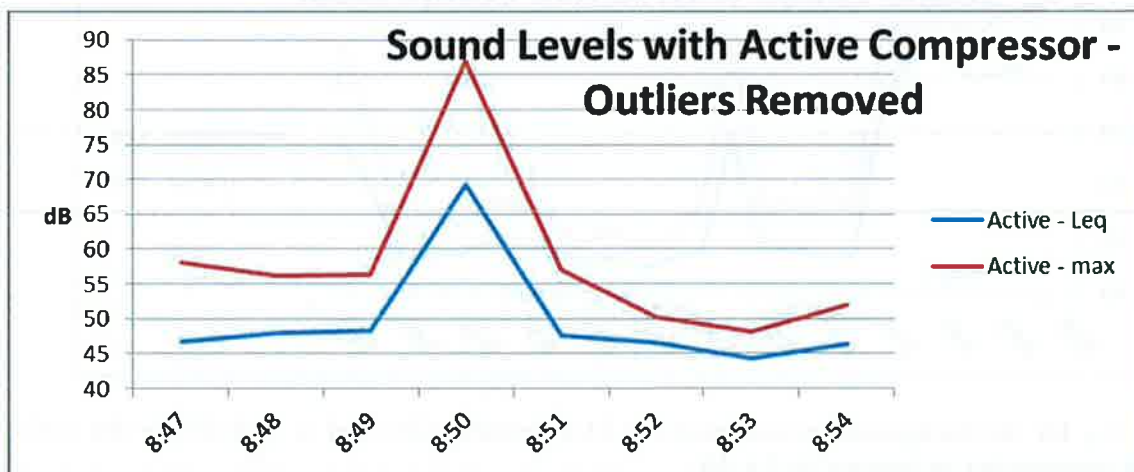
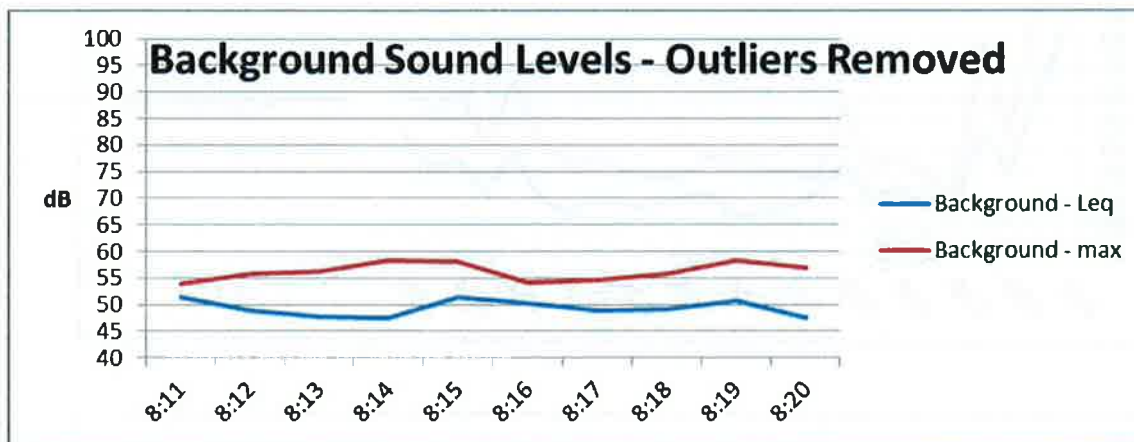


The average L_{eq} for the background measurement is 54.4 decibels (dB) and is 59.0 dB for the active measurement representing an increase in 5.4 dB.

Averaged maximum sound level readings of 63.2 dB and 67.5 dB were recorded for the background and active compressor measurements, respectively.

Due to the localized disturbances that occurred during both sets of measurements (background and active) the data was further analyzed by only assessing the middle eight minutes of each measurement effectively removing the “outliers” found at the beginning and end of each set of measurements. By analyzing the central readings, which are arguably the most accurate measurement of comparing the background and active compressor readings, the resulting averages (49.3 dB and 49.6 dB, respectively) are within the recommended levels for a MOE guideline Class 2 area. The sound level measurements with the outliers removed are presented in the charts below.

During the sound level measurement with the active compressor a spike in the recorded sound level was recorded at 8:50. This is attributed to a vehicle starting in line with the microphone at the roadway.



DISCUSSION

The averaged sound level measurements with the outliers removed are within the acceptable range of the MOE guideline for a Class 2 area.

The sound level measurement with the active compressor (with outliers removed) is only marginally higher than the background sound level measurement and is not considered to contribute a significant amount to the background sound levels.

The removal of the outliers was not applied to the December 2013 Sound Level Assessment due to the absence of noticeable localized disturbances (or outliers) present during the measurements. Had this methodology been applied the resulting averaged sound levels would have been 46.5 dB for the background and 51.8 dB for the active measurement. This represents a difference of 0.6 and 0.1 dB, respectively.

Should you have any questions or would like clarification regarding the information within the letter report, please contact the undersigned.

GAMSBY AND MANNEROW LIMITED

Per:



Cory Young, B.Sc.-Env.Sc, C.Tech.

CY/sc





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March 13, 2014
Our File: 109012

Township of Puslinch
7404 Wellington Road 34
Guelph, ON N1H 6H9

Attention: Mr. Don Creed
Director of Public Works and Parks

Re: Comparison of Sound
Level Assessments
Puslinch Optimist Recreation Centre
23 Brock Road South
Aberfoyle, ON

Dear Mr. Creed:

This letter report is to present a comparison of the findings of the two sound level assessments that occurred at #8 Maple Leaf Lane adjacent to the Puslinch Optimist Recreation Centre (ORC) in Puslinch, Ontario. The assessments were conducted to assess the sound levels originating from the ice rink compressor located within the ORC. The first assessment was completed on December 30, 2013, following that assessment the ice rink compressor was replaced and a second sound level assessment was completed on March 5, 2014.

BACKGROUND

The purpose of the comparison of the two assessments is to determine whether the new ice rink compressor is contributing to a level of sound that is below the previous compressor.

As previously mentioned in the letter reports dated January 17, 2014 and March 13, 2014 the residential area along Maple Leaf Lane was considered to be a "Class 2 area" where the background sound levels are predominately road traffic and the activities of people between the hours of 0700 to 1900. The Ministry of the Environment (MOE) document "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" Publication NPC-300 was used as a reference in completing the assessment. The referenced document outlines the sound level limits for a Class 2 area of 50 dB between the hours of 0700 and 1900.

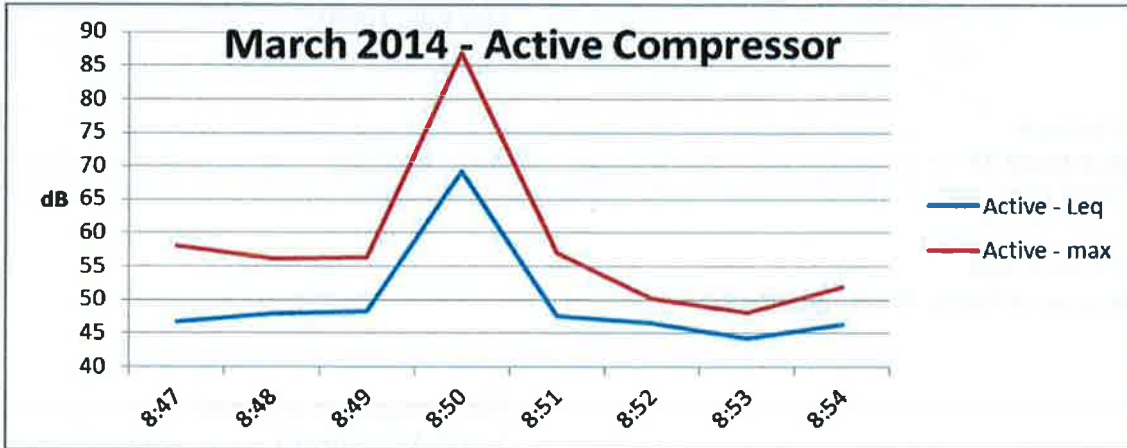
DATA ANALYSIS

The March 5, 2014 measurement of sound levels with the ice rink compressor active (i.e. actively operating) resulted in the collection of data as presented in the graph below. As noted in the letter report

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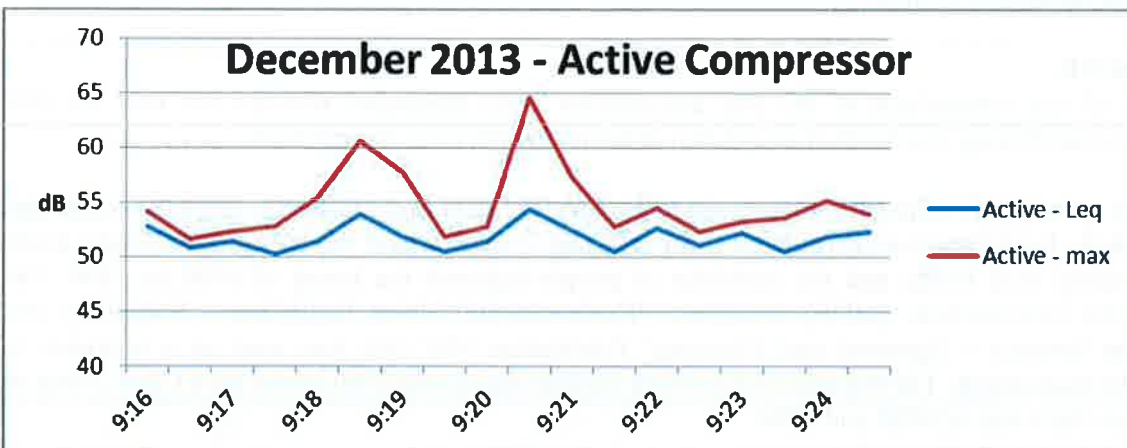
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dated March 13, 2014, the presence of non-typical readings (outliers) appeared during both the background and active compressor sound level measurements. The outlying data collected at the beginning and end of each measurement was removed resulting in the chart below.



The collection of the data while the compressor was active included the occurrence of traffic movements at the ORC and an adjacent roadway to the east, as well as increased human activity and conversations at the ORC and neighbouring properties. The March 5th, 2014 averaged active compressor sound levels recorded were **49.6 dB**. Average background levels recorded on this date were 49.3 dB. The average sound levels recorded during the March 6th, 2014 measurement were both below the MOE guideline of 50 dB.

The December 30, 2013 measurement of sound levels with the ice rink compressor active resulted in the collection of data as presented in the graph below. For comparison purposes the same methodology of only analyzing the central eight minutes of the measurement was used.



The collection of the data while the compressor was active included the occurrence of traffic movements at the ORC and an adjacent roadway to the east, as well as increased human activity and conversations at the ORC and neighbouring properties. The December 30th, 2013 averaged active compressor sound levels recorded were **51.8 dB**. Average background levels recorded on this date were 46.5 dB. The average active compressor sound levels recorded during the December 30, 2013 measurement were above the MOE guideline of 50 dB.

DISCUSSION

A comparison of the two data sets would suggest that the new ice rink compressor is operating at a lower sound level than the original compressor as measured on December 30th, 2013 and that the new compressor's measured averaged sound level readings are below the MOE guideline for a "Class 2 area".

The March 5th, 2014 sound level measurement with the active ice rink compressor (with outliers removed) is only marginally higher than the background sound level measurement and is not considered to contribute a significant amount to the background sound levels from the .

Should you have any questions or would like clarification regarding the information within the letter report, please contact the undersigned.

GAMSBY AND MANNEROW LIMITED

Per:



Cory Young, B.Sc.-Env.Sc, C.Tech.

CY/sc



REPORT PW-2014-001

TO: Mayor and Members of Council

FROM: Don Creed, Director of Public Works and Parks

SUBJECT: 2014 Capital Budget – Additional Funding for a 2013 Brush Chipper

RECOMMENDATIONS

That Report PW-2014-001 regarding 2014 Capital Budget – Additional Funding for a Brush Chipper be received; and

That Council approve additional funding in the estimated amount of \$13,100 for the purchase of a new 2013 brush chipper for the Public Works Department.

DISCUSSION

Purpose

The purpose of this Report is to obtain Council approval for additional funding to purchase a new 2013 brush chipper. Financial implications are noted below in this report.

Brush Chipper

Staff identified the need to purchase a brush chipper in the 2014 Capital Budget; Council approved \$20,000 for this purchase with the full amount funded with development charges. Staff has not been able to locate a used brush chipper to fill this cost requirement. The used brush chippers selling in the market require significant amounts of maintenance work which can be costly. Staff recommends the purchase of a new 2013 brush chipper under a Single Source Award Contract to Vermeer Canada.

Financial Implications

The estimated costs for the purchase outlined in this report are approximately \$33,100 plus the non-refundable portion of HST.

Funding will be provided through additional Development Charges. The financial details regarding the capital purchase of a brush chipper is as follows:

Purchase	2014 Capital Budget Amount	Purchase Price	Additional DC required
Brush Chipper	\$20,000	\$33,100	\$13,100

Applicable Legislation and Requirements

The Township's Purchasing By-law does not specifically state that the awarding of a single source contract be approved by Council. However, Council approval of a single source contract is considered a best practice.