

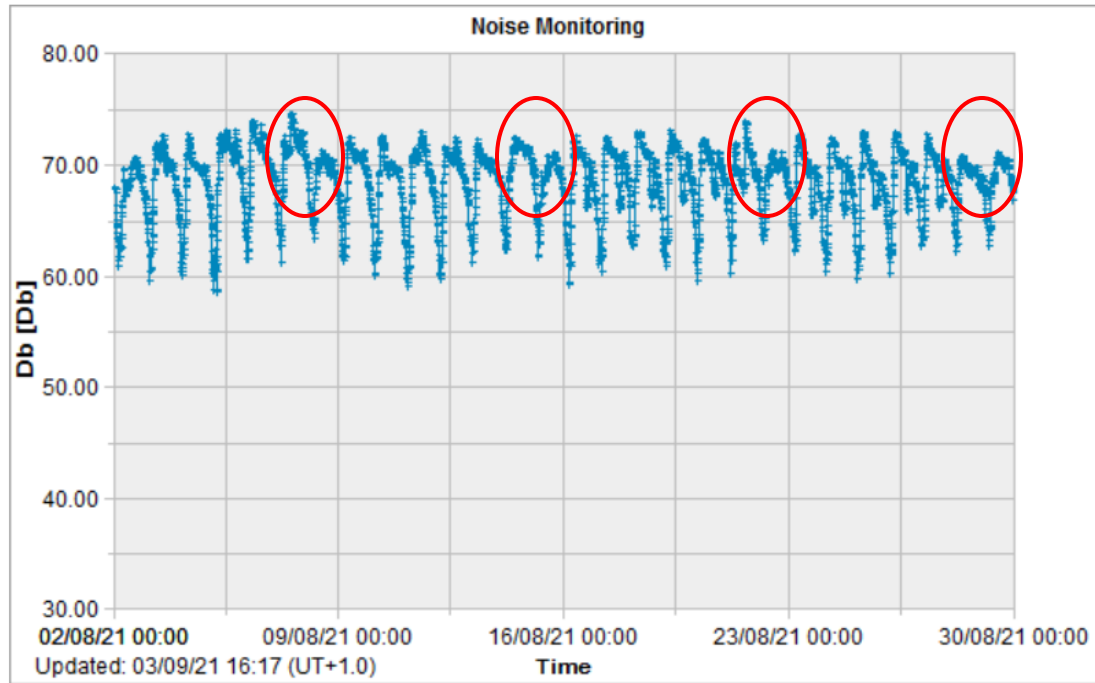
# Creating The Noise Reporting Memo

By Cian Sullivan on behalf of Atkins.

# Overview

- Atkins have been asked to present how the monthly noise memos are compiled and to determine whether a graph is showing ambient noise or construction noise.
- Atkins create monthly Noise & Vibration memos to be provided to the residents near the NCH site.
- The memo is compiled based on noise graphs provided by Murphy's surveys on behalf of BAM. The dates on which a sensor records a reading over 70 LAeq,1 hour (the limit set out in the Environmental Impact Statement) are noted along with the sensors which record readings in excess of the DCC's 75dB(A), 10-hour limit.
- The DCC's 75 dB limit was introduced following a presentation by Ian Byrne Consulting in May 2019. The presentation can be circulated after this meeting if required.
- The source of exceedances are also provided where possible, using the data on the graphs and the daily diary provided in the reports.
- See 3 examples in the following slides.

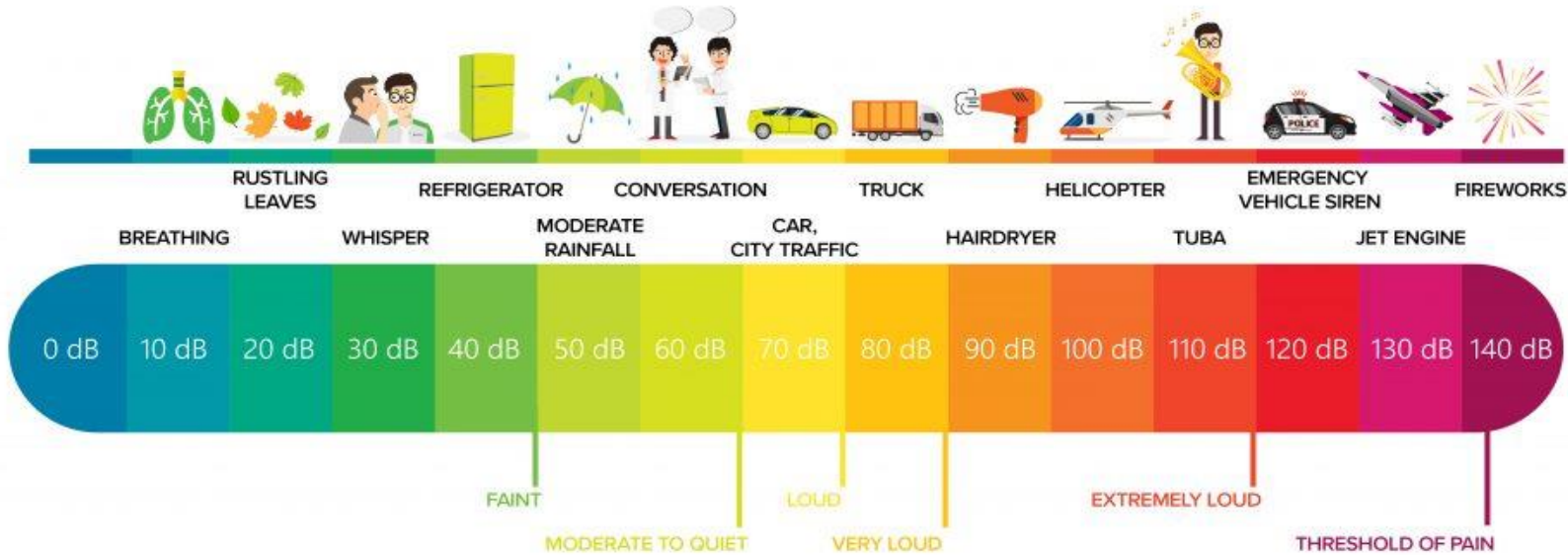
# How Sources Are Determined



- See example of graph from August 2021 displaying exceedances likely caused by ambient traffic noise.
- See exceedances on the weekends.

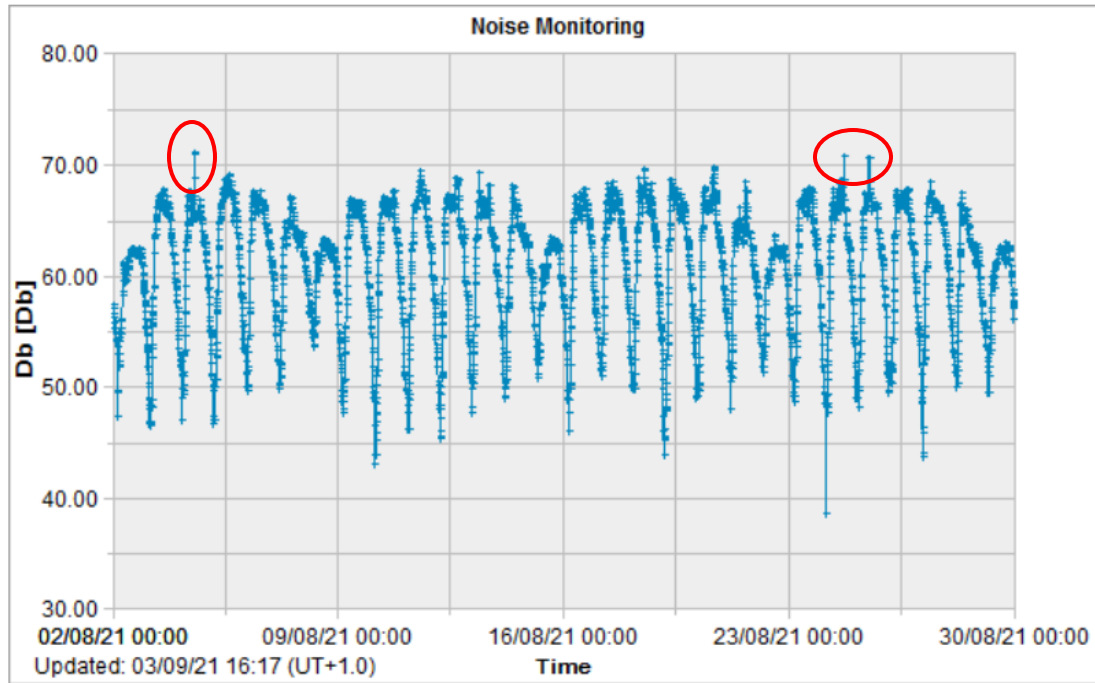
Based on the pattern and magnitude of the noise on the weekend when there is no construction activity, it looks likely that the cause of the exceedances on the weekdays are also ambient traffic noise.

# DECIBEL SCALE (dB)



- The scale above gives a general indication of noise levels in every day life examples.
- The decibel scale is logarithmic as oppose to that of a ruler which is linear scale. On a ruler 20cm is twice as long as 10cm. The logarithmic decibel scale increases in powers of ten. 20dB is 10 times more intense than 10dB and 30dB is 100 times more intense.
- NCH LAeq (1hr) = 70db - DCC Daily 10 hour limit - 75dB

# How Sources Are Determined



- See example of graph from August 2021 displaying exceedances in localized peaks.
- See localized peaks.

Based on the pattern and magnitude of the peaks, it looks likely that these exceedances was caused by a short burst of loud noise, either ambient (ambulance sirens, beeping, etc.) or construction (skips hitting the ground).

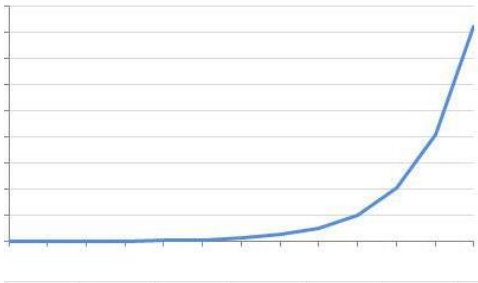
They do not indicate ongoing loud non-ambient noise.

The daily diary is used to find cause of short term loud noise.

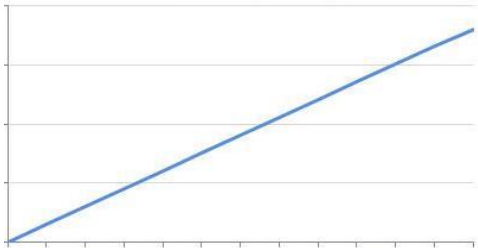
# How Peaks Are Caused

Noise is measured on a Logarithmic scale rather than on a linear scale.

Logarithmic Scale



Linear Scale



Which means that 80dB is 10 times louder than 70dB, rather than 15% louder.

Take an example set of 5-minute dB readings which could be used to form an hour long average:

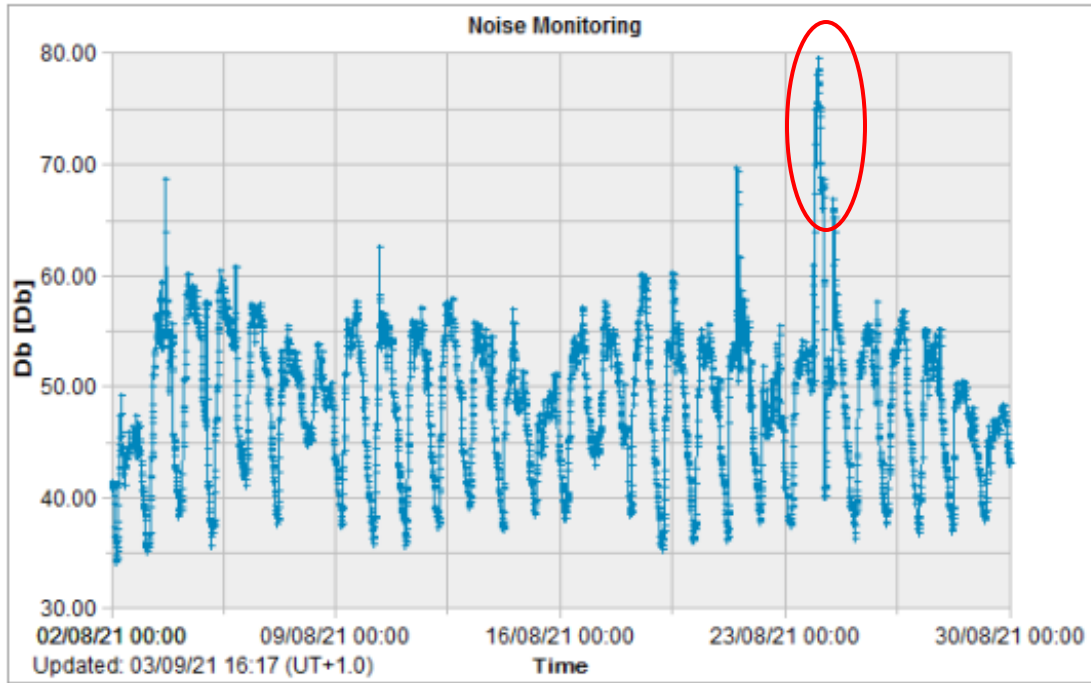
65, 66, 65, 67, 64, 66, 65, 65, 66, 67, 64, 84, 69, 68, 67, 65, 66, 66, 66, 65.

Linear average: 66 dB.

Logarithmic average: 72 dB. EXCEEDANCE!!



# How Sources Are Determined



- See example of graph from August 2021 displaying on going exceedances above the ambient level.
- This is the shape of an exceedances which indicates an ongoing noise above the ambient level.

In a scenario like this, the daily diary gives a narrative behind the cause.

22:00	23:00	75.9	70	53.4	75	These breaches took place out of construction hours.
23:00	00:00	76.3	70			
00:00	01:00	78.4	70	59.3	75	These breaches took place out of construction hours.
01:00	02:00	74.1	70			

In this particular case, the ongoing breach happened around midnight and is therefore not construction related.

# Summary

- When it comes to determining the source of an exceedance, there are a few factors which are used; the daily diary of activity on site, the shape, pattern and magnitude of exceedances and the shape, pattern and magnitude of the noise when there is no construction activity (night time and weekends).
- These sources are then reported in the Atkins monthly noise memo.