Note: Comparison of background noise spectra

In this note the spectra of background noise from the DELTA White paper [1] Figure 4 compared to background noise spectra from the NHTSA report [2].

Often spectra of noise sources are displayed as A-weighted spectra. In the DELTA White paper [1] the background noise is displayed as linear spectra and that has caused some confusion.

For easier comparison, the spectra from Figure 4 in the report have been A-weighted and are shown in the upper figure in page 2.

They can now easily be compared with other background noise spectra which are A-weighted, e.g. the spectra from the NHTSA report [2].

Within differences that may be caused by measuring distance and height, traffic type and intensity, the terrain type and reflections, the spectra in the upper and lower figure are quite similar.

References:

[1] White paper on external warning sounds for electric cars
- Recommendations and guidelines
DELTA report AV 1224/10. March 2011

[2] National Highway Traffic Safety Administration
Quieter Cars and the Safety of Blind Pedestrians: Phase I
Report DOT HS 811 304. April 2010.

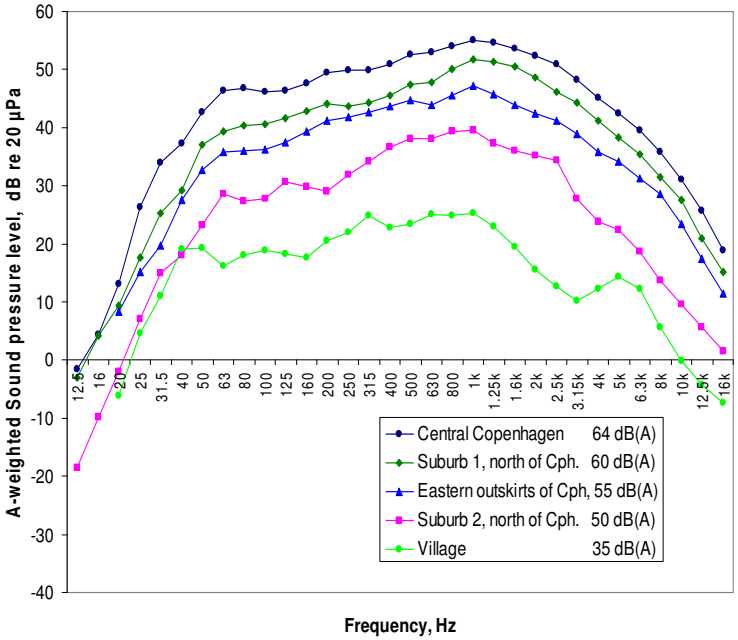

Figure 4 (A-weighted)
A-weighted background noise spectra (third octave bands, L_{eq}, 1-5 minutes) from different locations in and around Copenhagen.

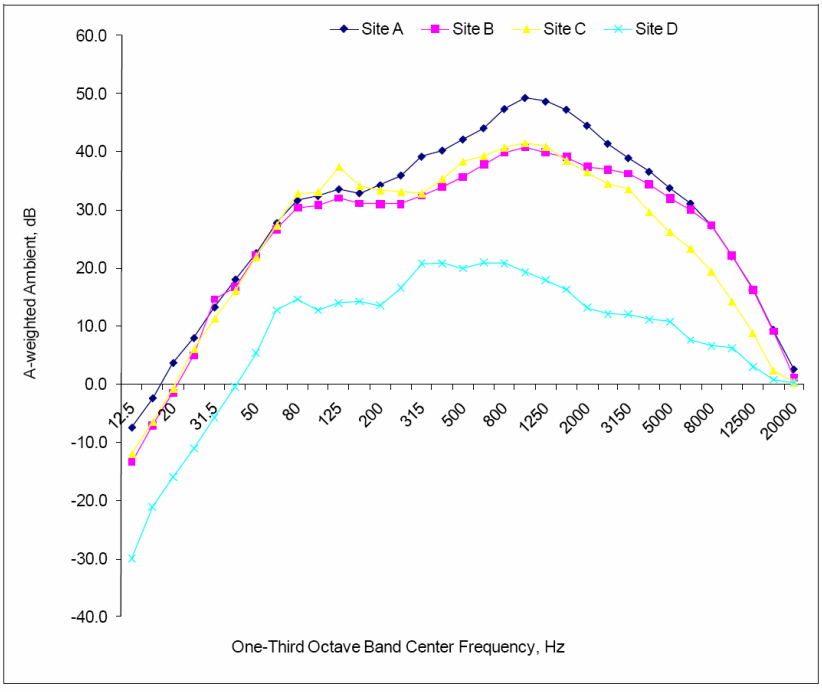

Figure 17. Average A-Weighted One-Third Octave Band Levels for Ambient Measurements: All Sites

Site A: 56 dB(A), Site B: 49 dB(A), Site C: 50 dB(A) and Site D: 31 dB(A)