

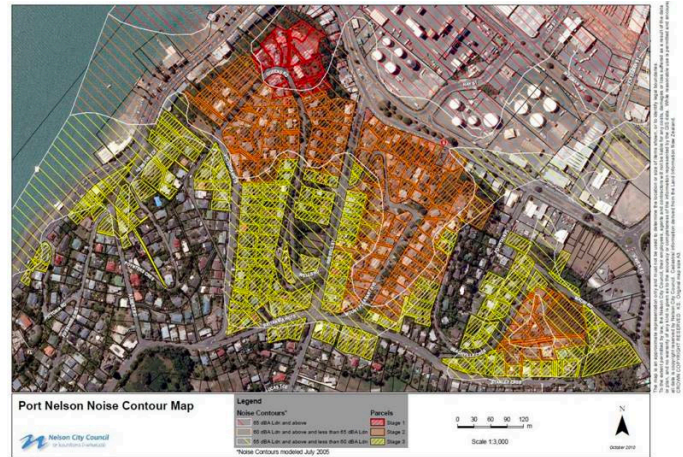


Noise Modelling for the Port Effects Overlay

A noise model is a computer based program that is set up to predict the emission of noise. Port Nelson in conjunction with acoustic experts, has developed a noise model for the port area.

The model has been calibrated against recorded measurements in the field, so that the model can be used to accurately predict noise levels from port and ship operations.

A comparison of the modelled results with the measured results during monitoring verified that the model developed for Port Nelson is able to closely predict the noise received at localities close to the noise sources. However, further away from the noise source the model was less able to predict the noise environment due to contamination from other (non-Port) residents living near the Port.



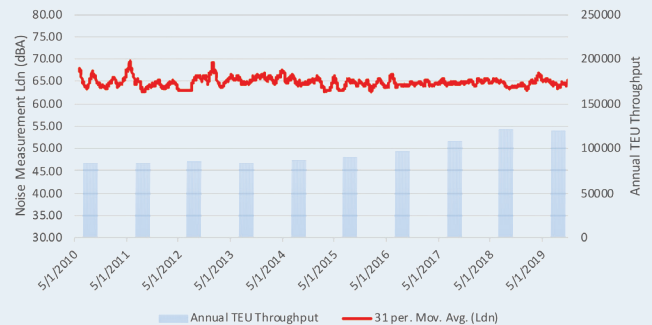
Noise Monitoring

The Port's noise monitor is located on top of the Holcim silo and measures noise 24/7.



Noise Monitoring Results

The graph shows the continuous noise monitoring done by the Port over the previous nine years. Measured noise during this period is shown by the red line in the Ldn¹ dBA units as shown on the left axis. The Port's container cargo throughput over the period is shown by the blue bars in the TEU² and these units are shown by the scale in the right axis.



¹ Ldn means the "Day Night Average Sound Level" as defined in NZS6801:1999 and is the night-weighted sound exposure level in A-frequency weighted decibels. (An additional 10 dBA is added to the Leq for the period from 10 pm to 7 am.) It is measured for 24 hours from midday to midday. 2TEU is 20ft equivalent container unit.

² TEU is 20ft equivalent container unit.

2018/2019 Noise Statistics

The number of complaints from within the Port Effects Overlay is consistent with the reported number from previous years. The number of complaints remains low in comparison to the cargo throughput and container movements on the Port.

Metric	Number
Total number of FY18/19 complaints	56
Total number of complainants	16
Complaints from within Port Effects Overlay	17
TEUs	119,074
Container moves	76,226
Container ship calls	183
Container operations complaints	25

Log operations complaints	4
Vessel generator and ships horns complaints	8
Other cargo discharge complaints	16
Unknown source complaints	2
Significant noise events	8
Significant noise events from operations	4
Significant noise events from ships horns (navigational safety feature)	4