

**BEFORE THE HEARINGS PANEL APPOINTED BY THE QUEENSTOWN LAKES
DISTRICT COUNCIL**

Under the Resource Management Act 1991

In the Matter of the urban Intensification Variation to
the Proposed Queenstown Lakes District
Plan

Submitter **QUEENSTOWN AIRPORT CORPORATION
LIMITED**
Submitter 822 and Further Submitter 1355

**Evidence Summary of Christopher William
Day (Acoustics) on behalf of
Queenstown Airport Corporation
Limited**

Dated: 27 August 2025

- 1 My full name is Christopher William Day and my qualifications and evidence are detailed in my primary evidence. This document provides a summary of that evidence. My understanding is that there are no acoustic “matters remaining in dispute” as no other acoustic evidence is to be submitted to the hearing.
- 2 Intensification inside the airport noise boundaries for Queenstown Airport is in my opinion, inappropriate from a noise effects perspective. This opinion is supported by the QLDC District Plan provisions, NZS 6805 and the overseas approach to airport noise planning. In particular, there are a number of key factors that form the basis of this opinion as discussed in my evidence and summarised below.
- 3 I understand several submitters are seeking relaxation of the District Plan provisions to enable intensification that would allow additional noise sensitivity activities to establish within the OCB. Clause 1.1.4 of NZS 6805 recommends the Standard should not be used to downgrade existing noise controls.
- 4 It is a long-established concept that aviation noise can have an adverse effect on people and communities. World-wide, the lack of appropriate land use planning around airports has historically caused significant numbers of people to be exposed to aircraft noise and subsequent community action has initiated operational constraints on airports. The adverse effects of noise include annoyance, speech interference, sleep disturbance and health effects associated with annoyance.
- 5 An extensive 2025 report by the European Environment Agency¹ discusses annoyance as a health effect. The report states, *“High annoyance is considered a good indicator of the adverse health impacts of noise, as it can be a harbinger of more severe health problems.”*
- 6 A report for Christchurch prepared by Professor Charlotte Clark (a world authority on the effects of environmental noise on health) confirms there are adverse health effects from aircraft noise at 45 dB L_{dn} and above. Her Christchurch report aligns with my evidence and the following quote from her paragraph 54 provides a helpful summary: *“...the WHO generalised curve from the WHO ENG 2018 should be relied on, which was established from studies across a range of contexts including very small to large airports. The WHO generalised curve shows that increasing the population exposed to aircraft noise above 45 dB Lden would harm public health via annoyance effects. It follows that this would result in increased health costs or increase pressure*

¹ <https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025>

to reduce noise through restrictions on airport operations. Acoustic insulation cannot mitigate effects in people's gardens or in other outdoor community facilities. Further, the airport's community relations are likely be negatively impacted by bringing the population nearer, which could bring challenge to further and future development of the airport and its operation, as well as require increased focus and investment in community relations".

- 7 World-wide, community annoyance from aircraft noise has more than doubled since the land use controls in NZS 6805:1992 were first introduced, and now 26% to 46% of people exposed to 55 to 65 dB L_{dn} are reported to be highly annoyed. A recent Waka Kotahi study of aircraft noise shows remarkably similar results in NZ. This level of annoyance/health effects is a significant adverse effect that should be avoided if at all possible. Figure 2 from my evidence summarises the various studies over time.

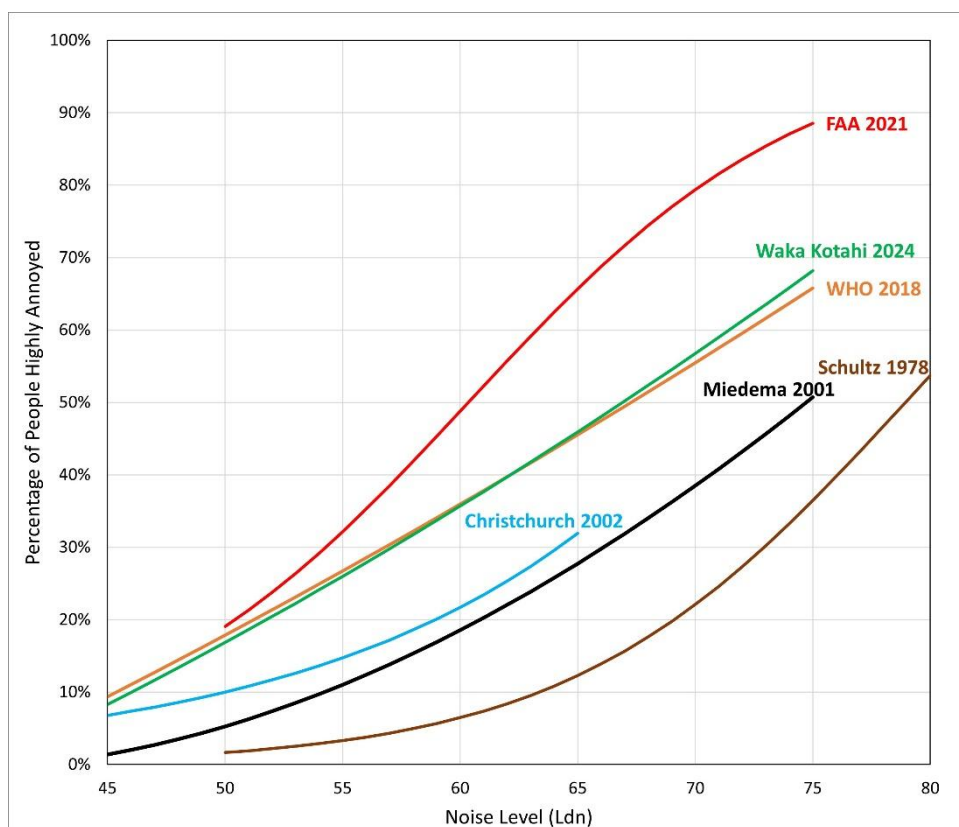


Figure 2 – Community Response to Aircraft Noise – Comparison of Studies

- 8 Specifying acoustic insulation to be fitted to buildings in these noise environments will not eliminate all the adverse effects of noise, due to the natural preference to open windows and an unsatisfactory outdoor noise environment. In addition, a standard house located in 55 dB to 65 dB L_{dn} will inherently achieve the internal design objective of 40 dB L_{dn} . Thus, the respondents in the annoyance studies at 55 dB to 65 dB L_{dn} , are living in 'appropriately insulated houses' and

are 26% to 46% highly annoyed. The inadequacy of acoustic insulation has been confirmed in the recent High Court decision on Osterley Way.

- 9 The QLDC District Plan noise limits for general noise sources received in residential areas, align with approximately 50 dB L_{dn} . This gives an indication of the community's view as to what is a reasonable 'receiving noise level' for the protection for residential amenity in the Queenstown context. It is therefore reasonable in my view that residential uses should not be allowed to establish next to an existing noisy activity (such as an airport) at levels at least 5 dB higher – between 55dB L_{dn} and 65 dB L_{dn} as some submitters suggest.
- 10 Reverse sensitivity is a very real effect for airports worldwide. Costly operational constraints have been implemented at many airports. Several examples are provided in my evidence. These examples highlight where residential activity inside the noise boundaries has had a significant effect on airport/aviation operations. In addition, it is not just the reverse sensitivity effects on airports that need to be considered - there are undeniable adverse effects on residents from aircraft noise that should be avoided by responsible land use planning as part of a social responsibility to protect the residents.
- 11 Planning controls at other New Zealand airports vary depending on the circumstances. Queenstown has determined (through PC35 and adopted in the PDP) that new ASAN should be prohibited inside 55 dB L_{dn} in rural areas and within the BMUZ, and limited in other existing zones inside this area. For the reasons provided above, the District Plan airport noise provisions should be maintained and intensification inside the airport noise contours should be avoided.