

Before an Independent Hearings Panel
appointed by the Waimakariri District Council

under: the Resource Management Act 1991 (*RMA*)

in the matter of: Submissions and further submissions in relation to the proposed Waimakariri District Plan, Variation 1 and Variation 2

and: Hearing Stream 7: Residential, Large Lot Residential, Ecosystems and Indigenous Biodiversity, Variation 1 and Variation 2

and: **Christchurch International Airport Limited**
Submitter 254

Evidence of John Kyle (planning)

Dated: 30 August 2024

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STATEMENT OF EVIDENCE OF JOHN KYLE

INTRODUCTION

- 1 My full name is John Clifford Kyle. I hold an honours degree in Regional Planning from Massey University, obtained in 1987. I am a founding director of the firm Mitchell Daysh Limited, which practices as a planning and environmental consultancy throughout New Zealand.
- 2 I have been engaged in the field of resource and environmental management for more than 35 years. My experience includes a mix of local authority and consultancy resource management work. For the past 28 years, this experience has retained a particular emphasis on providing consultancy advice with respect to regional and district plans, designations, resource consents, environmental management, and environmental effects assessment. This includes extensive experience with large-scale, and often nationally significant projects involving inputs from a multidisciplinary team. My work regularly takes me all over New Zealand. A summary of my experience was attached to my evidence relating to Hearing Stream 10A, dated 1 February 2024.
- 3 I have been authorised by Christchurch International Airport Limited (*CIAL*) to provide evidence in relation to its submissions and further submissions on the proposed Waimakariri District Plan (*PDP*) and Variations 1 and 2 to the PDP under the Intensification Streamline Planning Process (*IPI*).
- 4 I previously prepared briefs of evidence for CIAL in relation to:
 - 4.1 Hearing Stream 10A, dated 1 February 2024, and I appeared at the hearing on 21 February 2024;
 - 4.2 Hearing Stream 12B, dated 22 May 2024; and
 - 4.3 Hearing Stream 12E, dated 2 August 2024, and I appeared at the hearing on 19 August 2024.
- 5 I refer to my evidence provided at those hearings. My previous views apply here, and I continue to rely upon evidence and legal submissions provided in relation to those hearings.
- 6 In preparing this brief of evidence, I have reviewed:

- 6.1 The Operative Waimakariri District Plan (*the Operative Plan*), the PDP and the IPI insofar as relevant to CIAL's submissions and further submissions;
- 6.2 CIAL's primary submissions and further submissions on the PDP and IPI;
- 6.3 Provisions of the Environment Canterbury Regional Policy Statement (*CRPS*) (insofar as relevant to CIAL's submissions and further submissions);
- 6.4 The following section 42A reports:
 - (a) Proposed Waimakariri District Plan: Medium Density Residential Submissions, prepared by Peter Wilson and dated 19 August 2024;
 - (b) Proposed Waimakariri District Plan: Whaitua Nohonoho - Residential Zones, prepared by Andrew Maclennan and dated 16 August 2024;
 - (c) Proposed Waimakariri District Plan: Variation 1- Housing Intensification, prepared by Peter Wilson and dated 19 August 2024; and
- 6.5 The statements of evidence of Ms L Smith, and Professor C Clark, dated 30 August 2024.

CODE OF CONDUCT

- 7 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with it in preparing my evidence on technical matters. I confirm that the technical matters on which I gave evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from my opinions expressed.

SCOPE OF EVIDENCE

- 8 This hearing (Stream 7A and B) considers Medium Density Residential, Residential & Large Lot Residential Zones, the Ecosystems and Biodiversity Chapter and Variation 1 housing intensification. My evidence is concerned entirely with housing intensification and aspects of the Medium Density Residential and Residential & Large Lot Residential Zones which are most relevant to CIAL.

9 My evidence:

9.1 Summarises the overarching policy framework insofar as relevant to CIAL's submission;

9.2 Addresses the use of a 50dB Ldn aircraft noise boundary as a Qualifying Matter;

9.3 Considers the PDP's proposed intensification of existing residentially zoned areas within Kaiapoi by:

- (a) Assessing the applicability of the "Kaiapoi exemption" within Policy 6.3.5(4) of the CRPS to the Medium Density Residential and Residential & Large Lot Residential Zones;
- (b) Evaluating the proposal against evidence relating to the effects of airport noise on amenity values and human health;
- (c) Addressing the risk of reverse sensitivity constraining airport operations; and
- (d) Addressing whether acoustic insulation can adequately manage the effects of airport noise on the community.

OVERVIEW OF THE RELEVANT POLICY FRAMEWORK

10 The evidence I provided to Hearing Stream 10A, dated 1 February 2024, sets out the overarching applicable policy framework in detail. Rather than repeating it at length, I summarise the points that are most relevant to the Medium Density Residential and Residential & Large Lot Residential Zones matters below.

Resource Management Act 1991¹

11 As I set out at Hearing Stream 10A, CIAL operates the regionally and nationally significant Christchurch International Airport (*the Airport*). The Airport is regionally and nationally significant infrastructure, a fact that is pertinent to a number of relevant policy statements and plans in the region.

¹ Set out in detail in paragraphs 11-12 of my Hearing Stream 10A evidence.

National Policy Statement on Urban Development (NPSUD)²

- 12 The NPSUD identifies "Tier 1" Urban Environments, for which minimum residential density requirements are set. These requirements are also detailed in sections 77F to 77R of the RMA. The Waimakariri District is identified as a Tier 1 Urban Environment.
- 13 The NPSUD and RMA only allow for departure from the Tier 1 minimum density requirements to the extent necessary to accommodate a "qualifying matter".³
- 14 Insofar as is relevant to CIAL, the term "qualifying matter" is defined as:

*"any matter required for the purpose of ensuring the safe or efficient operation of nationally significant infrastructure."*⁴

- 15 The NPSUD defines "nationally significant infrastructure" as:

15.1 *"any airport (but not its ancillary commercial activities) used for regular air transport services by aeroplanes capable of carrying more than 30 passengers"*.⁵

- 16 Christchurch International Airport is therefore nationally significant infrastructure. As such, any activities that give rise to adverse effects on the safe and efficient operation of the Airport fall within the remit of a "qualifying matter" under the NPSUD.
- 17 In addition, section 77I(j) refers to any other matter that makes higher density, as provided for by the MDRS or policy 3, inappropriate in an area. In my opinion this includes locations where adverse health outcomes could be incurred as a result of intensification. I return to this matter later in this statement.

Canterbury Regional Policy Statement⁶

- 18 As set out in my previous evidence, the policies of the CRPS are clear and directive about the need to protect regionally significant infrastructure, such as Christchurch Airport, from incompatible land uses and activities. The 50dB Ldn Air Noise Contour

² Set out in detail in paragraphs 13-16 of my Hearing Stream 10A evidence.

³ Policy 4 of the NPSUD.

⁴ Clause 3.32(1)(c) of the NPSUD and sections 77I(e) and 77O(e) of the RMA.

⁵ Clause 1.4(h) of the NPSUD.

⁶ Set out in detail in paragraphs 17-24 of my Hearing Stream 10A evidence.

is a key measure that has been adopted in the Canterbury region for identifying where reverse sensitivity effects are most likely to arise.

- 19 Policy 6.3.5(4) is particularly directive. It seeks to ensure that new noise sensitive activities are avoided within the 50dB Ldn Air Noise Contour. For this reason, great care needs to be exercised when evaluating proposals to rezone or upzone land to enable the establishment of activities sensitive to the effects of aircraft noise within the 50dB Ldn Air Noise Contour.
- 20 The CRPS is currently under review, and it is possible that the 50dB Ldn Air Noise Contour may change once the proposed CRPS is notified.

Operative Waimakariri District Plan⁷

- 21 The planning maps of the Operative Plan depict both a 55dB Ldn Air Noise Contour and a 50dB Ldn Air Noise Contour. Within the 50dB Ldn Air Noise Contour (which also encapsulates the 55dB Ldn Air Noise Contour – the two are overlapping),⁸ the Operative Plan is aligned with the CRPS and establishes a clear policy directive to avoid patterns of land use development which may affect the operation and efficient use and development of Christchurch Airport.⁹

AIRCRAFT NOISE MANAGEMENT AND LAND USE PLANNING

- 22 As set out by **Ms Smith** in her evidence to Hearing Stream 10A, the New Zealand Standard for Airport Noise Management and Land Use Planning (NZS6805:1992) is considered 'best practice' for guiding land use management surrounding airports in New Zealand. It promotes an approach whereby new noise sensitive activities within an airport's Air Noise Boundary and Outer Control Boundary be prohibited, where this can be practicably achieved. Put simply, if new development of activities sensitive to aircraft noise can be avoided within the Outer Control Boundary, then they should be.

Airport Noise Qualifying Matter

- 23 The Airport Noise Qualifying Matter has been the subject of considerable attention during this District Plan review process. Below is a brief overview of the evidence that I presented in Hearing Stream 10A for the Panel's convenience.

⁷ Set out in detail in paragraphs 25-27 of my Hearing Stream 10A evidence.

⁸ As explained in paragraph 50 of my Hearing Stream 10A evidence.

⁹ Policies 11.1.1.8 and 12.1.1.12, Operative Plan.

- 24 The Waimakariri District Council (*the Council*) has identified, for the purposes of the IPI, an Airport Noise Qualifying Matter. The Qualifying Matter covers the approximate urban area of Kaiapoi and is based on the operative 50db Ldn Air Noise Contour. For the reasons described in my Hearing Stream 10A evidence,¹⁰ in my view, the Airport Noise Qualifying Matter would more appropriately be delineated by the Airport's remodelled Outer Envelope 50db Ldn Air Noise Contour.
- 25 The location of the operative noise contours overlaid with CIAL's remodelled Outer Envelope contours is shown in **Appendix A** attached. The remodelled Outer Envelope 50db Ldn Air Noise Contour similarly covers the approximate urban area of Kaiapoi but extends slightly further to the northeast compared to the operative 50db Ldn Air Noise Contour.
- 26 The Panel will recall that the remodelled contour accounts for changes to ultimate capacity, aircraft traffic projections, flight track assumptions and noise modelling. Notably, the contours also account for a change in aircraft technology (which influences flight tracks) due to the use of Performance Based Navigation or "PBN". Effectively, this is the update that is envisaged by Policy 6.3.11(3) of the CRPS.
- 27 Without derogating from my primary opinion that the remodelled noise contour should be applied, I note that the Airport Noise Qualifying Matter section 32 evaluation included an assessment of the qualifying matter in accordance with the requirements of clause 3.33(2) of the NPSUD. From a statutory perspective, the Council has provided all of the requisite information required to confirm, at the very least, the operative 50db Ldn Air Noise Contour as a Qualifying Matter.
- 28 The Airport Noise section 42A report also recommended retaining the operative 50dB Ldn contour as a Qualifying Matter.¹¹
- 29 For the reasons I covered in detail in Hearing Stream 10A, I support the retention of an Airport Noise Qualifying Matter, albeit extended to reflect the remodelled contour.

Subdivision vs Land use

- 30 Of particular relevance to this hearing is the view of the Airport Noise section 42A Report Officer that the Airport Noise Qualifying Matter applies to subdivision, rather than land use.¹² As I stated in my Hearing Stream 10A evidence, I do not consider

¹⁰ In paragraphs 28-50.

¹¹ Paragraph 58, Variation 1 Airport Noise section 42A report, dated 12 January 2024.

¹² Paragraph 93, Variation 1 Airport Noise section 42A report, dated 12 January 2024.

this to be correct. There is nothing within the notified section 32 evaluation that would suggest that this is the case, and I note that the proposed Medium Density Residential Zone provides for three residential units per site as a permitted activity,¹³ except within the Natural Hazards and Airport Noise Qualifying Matters. It is clear that this qualifying matter applies to land use, which is appropriate.

'To the extent necessary'

- 31 It should also be noted that, as set out above, the NPSUD and RMA only allow for departure from the Tier 1 minimum density requirements *to the extent necessary* to accommodate a Qualifying Matter. It is my view that in this case, the remodelled 50 Ldn contour is the appropriate basis for the Airport Noise Qualifying Matter to provide the extent of protection which necessary to ensure the safe and efficient operation of the Christchurch International Airport, and at the least this should hold the development potential within the 50dB Ldn contour at the level that is currently provided for the operative District Plan.

INTENSIFICATION WITHIN THE 50DB LDN AIR NOISE CONTOUR FOR CHRISTCHURCH INTERNATIONAL AIRPORT

- 32 As notified, the PDP seeks to provide for intensification of existing residentially zoned areas within Kaiapoi.
- 33 I provided an overview of CIAL's submissions in my Hearing Stream 10A evidence.¹⁴ After reflecting on the section 42A Report Officer's recommendations, I presented a refined approach that endeavoured to balance both the intent of CIAL's submission points and the concerns of the section 42A Report Officer.
- 34 In line with the refined approach, CIAL filed submissions on the proposed Medium Density Residential and Residential & Large Lot Residential Zone chapters, seeking greater recognition of the significance of the Airport and the need to protect it from incompatible land use and development. CIAL sought (in part) the addition of clauses that would protect critical infrastructure and regionally significant infrastructure from reverse sensitivity.
- 35 In response to CIAL's submission, the Residential Zones section 42A report recommended the rejection, for the most part, of CIAL's submission points on reverse sensitivity. In the view of the section 42A Report Officer, direction on the management of reverse sensitivity effects is adequately provided within the Energy and Infrastructure (*EI*) chapter. I disagree with the Report Officer's conclusions and

¹³ Refer to Rule MRZ-R2 and associated Standard MRZ-BFS1 (a), Proposed Plan.

¹⁴ Paragraphs 85-96 of my Hearing Stream 10A evidence.

believe that clearly drafted provisions are required in the relevant chapters of the PDP to ensure that the Airport is appropriately protected in accordance with the directives in Policy 6.3.5(4) of the CRPS.

- 36 Overall, my view on how airport noise should best be incorporated into the PDP remains substantially unchanged from the position that I put forth in Hearing Stream 10A. I refer the Panel to Appendix B of my Hearing Stream 10A evidence, which sets out my proposed approach to balance the CIAL submission points and address the section 42A Report Officer's concerns.

The "Kaiapoi Exemption"

- 37 The section 42A report for Hearing Stream 10A, and subsequent Hearing Stream 12E, relied on the "Kaiapoi exemption" within Policy 6.3.5(4) of the CRPS as justification for why residential intensification within the 50dB Ldn Air Noise Contour is appropriate.

- 38 My view on how Policy 6.3.5(4) of the CRPS should be interpreted differs from the position of the section 42A Report Officer's. I discussed the "Kaiapoi exemption" at length during Hearing Streams 10A¹⁵ and 12E,¹⁶ and my opinion remains unchanged.

- 39 Whilst much of my previous evidence regarding Policy 6.3.5(4) has related to the interpretation of the term "*residential greenfield area*", the reference to "*an existing residentially zoned urban area*" is of greater relevance to this hearing stream.

- 40 To recap, Policy 6.3.5 seeks to assist the recovery of Greater Christchurch through integration of land use development and infrastructure by:

1. *Identifying priority areas for development and Future Development Areas to enable reliable forward planning for infrastructure development and delivery;*

- 41 The "Kaiapoi exemption" of sub-paragraph 4 of Policy 6.3.5 is as follows:

4. *Only providing for new development that does not affect the efficient operation, use, development, appropriate upgrading and safety of existing strategic infrastructure, including by avoiding noise sensitive activities within the 50dBA Ldn airport noise contour for Christchurch International Airport, unless the activity is within an existing residentially zoned urban area,*

¹⁵ In paragraphs 62–73 of my Hearing Stream 10A evidence.

¹⁶ In paragraphs 22–36, of my Hearing Stream 12E evidence.

residential greenfield area identified for Kaiapoi, or residential greenfield priority area identified in Map A (page 6-28) and enabling commercial film or video production activities within the noise contours as a compatible use of this land; and

- 42 With regard to the exclusion of activities within an “existing residentially zoned urban area”, it is important in my view to understand that this policy was promulgated based on District Plan zonings in existence at the time of its inception. For the present purpose, these zonings are the zonings included in the Operative Plan. In my opinion, any proposed changes to the operative zoning framework which promote increased development density should be assessed with an open mind and the exemptions provided in the yellow highlighted text should not be interpreted in a vacuum without having regard to the context in which they were created. The exemptions were founded on an assumed existing state, that would be changed if density controls within residentially zoned urban areas were to be significantly altered.
- 43 I question whether intensification within existing residential zones is subject to the exemptions set out in the yellow highlighted text. In my view, the exemption is based on the existing state, and I do not believe that these exemptions would necessarily have been provided if it was known that a different development density in these existing zones was a feasible outcome down the track. As such, I am of the view that the “Kaiapoi exemption” cannot be relied upon to justify residential intensification in this case.

Why is it Important to Limit Intensification Within the 50dBA Ldn Contour?

- 44 The effects of airport noise on the community are considered from both an acoustic perspective by **Ms Smith**, and from a health perspective by **Professor Clark**. In my opinion, it is clear from Ms Smith’s and Professor Clark’s evidence that acoustic effects and health effects are inextricably linked.
- 45 As detailed by **Ms Smith**, from an acoustics perspective, there are a number of reasons why intensification of noise sensitive activities within aircraft noise boundaries is an undesirable outcome. In summary, this includes the potential for aircraft noise exposure to give rise to effects such as annoyance, sleep disturbance, cognitive impairment and other health related effects.¹⁷

¹⁷ Statement of Evidence of L Smith, dated 30 August 2024, paragraphs 24-44.

46 Based on the literature review that Ms Smith presented in Hearing Stream 10A, the prevalence of annoyance effects relative to aircraft noise exposure has increased markedly compared to earlier research conducted 20 years ago. Previous annoyance studies from 2001 (which in my experience, have frequently been referenced by acoustic experts when considering aircraft noise effects) have been superseded by more recent studies undertaken by the likes of the World Health Organization (*WHO*), who have subsequently released guidelines for annoyance responses relative to aircraft noise exposure. Ms Smith advises that, based on the WHO guidelines:

46.1 almost 18% of people will be highly annoyed by aircraft noise exposure of 50dB Ldn;

46.2 between 18% to 27% of people will be highly annoyed by aircraft noise between 50 and 55dB Ldn; and,

46.3 between 27% and 46% of people will be highly annoyed by aircraft noise between 55 and 65dB Ldn.

47 Putting this into context it would be reasonable to anticipate that:

47.1 Between the 55dB Ldn and 50dB Ldn Air Noise Contour, between 18% to 27% (or 1 in 4 to 1 in 5 people) will be highly annoyed by aircraft noise.

47.2 Between the 65dB Ldn (located within the Christchurch City District) and the 55dB Ldn Air Noise Contour, between 27% and 46% of people (or 1 in 4 to 1 in 2 people) will be highly annoyed by aircraft noise.

48 When considering these numbers, it is important to appreciate that the level of aircraft noise exposure within the aircraft noise boundaries experienced today will not be the same in 10, 20 or 30 years time. While residents may not be exposed to aircraft noise that causes them to be 'annoyed' now, this will change in the future as the frequency of noise exposure increases over time. For this reason, care needs to be taken to ensure a lack of apparent concern about aircraft noise now is not assumed to be an accurate indicator of community acceptance of aircraft noise exposures in the future. Other changes, such as updated flight paths may also increase residents' annoyance – as demonstrated by the Wellington Airport DMAPS legal challenge that I discuss later in my evidence.

49 **Professor Clark** demonstrates how this 'annoyance' translates into real and measurable effects on the health of the community. Professor Clark sets out the

increasing body of high-quality evidence linking aviation noise to a range of health outcomes including annoyance, sleep disturbance, cardiometabolic health, children's learning, and mental health.¹⁸

- 50 NZS6805:1992 has effectively guided land use planning around airports for over 30 years. But, as Professor Clark points out, NZS6805:1992 was informed by older evidence for the effects of aviation noise on health. Professor Clark demonstrates that over the last few decades, a considerable body of evidence has been amassed, which suggests that even low levels of aircraft noise exposure can affect community health.
- 51 In my experience of working with airports around New Zealand, allowing the intensification of noise sensitive activities within the aircraft noise contours has the effect of ultimately increasing the number of people exposed to the effects of aircraft noise over time. In my view, given the clear and growing evidence around the relationship between 'annoyance' and health effects when it comes to aircraft noise, increasing the number of people exposed to aircraft noise over time would be a highly undesirable outcome for both CIAL and the community.

Reverse Sensitivity

- 52 I have also observed that increasing the number of people exposed to the effects of aircraft noise also inevitably leads to an increase in reverse sensitivity concerns. Such concerns can bring very strong pressures to bear on airport operators and regulators alike to constrain or curtail operations.
- 53 To date, this has not been a significant issue for Christchurch Airport. The reason for this, articulated neatly by **Professor Clark** is that "*Christchurch is in an enviable and unusual position in that it has protected areas defined by planning that protect community health.*"¹⁹ Such effective planning controls, may, in my view, obscure the fortunate position that Christchurch finds itself in, with regard to the effects of airport noise.
- 54 As previously discussed, the 50dB Ldn Air Noise Contour has a long-established provenance within policy statements and plans that apply to land around the Airport. Historically, this has led to what I would consider to be a very effective land use management response to address the potential reverse sensitivity on the

¹⁸ Statement of Evidence of Professor C Clark, dated 30 August 2024, paragraphs 5-6 of Appendix 1 Airport noise exposure and health effects report.

¹⁹ Statement of Evidence of Professor C Clark, dated 30 August 2024, paragraph 58 of Appendix 1 Airport noise exposure and health effects report.

Airport and conversely, to manage potential amenity effects from aircraft noise on the community.

- 55 Elsewhere in New Zealand, reverse sensitivity issues are a prominent issue at most large commercial airports and the issue becomes particularly prevalent where there is ongoing pressure to enable or intensify residential development within close proximity to airports.
- 56 A recent example of the risk that reverse sensitivity poses to major airports can be drawn from a recent legal challenge involving Wellington International Airport. In July 2024, a group of residents filed a case against Airways Corporation of New Zealand Limited, Aeropath Limited, Wellington International Airport Limited (*WIAL*) and the Director of Civil Aviation, seeking a judicial review into the implementation of the Wellington Divergent Missed Approach Protection System (*DMAPS*) procedure.²⁰ The implementation of *DMAPS* altered Wellington Airport flight paths, and as a result, some residents have been exposed to more frequent overhead flights (while some are exposed to fewer flights).
- 57 From *WIAL*'s perspective, the change to flight paths was implemented to increase the safety and efficiency of its regular operations. The change was sufficiently subtle to not require the noise contours that apply at that airport to be altered. Meanwhile, residents living beneath the affected flight paths have raised concerns about increased aircraft noise exacerbating physical and mental health conditions, including post-traumatic stress disorder, dementia, depression, brain injuries, sensory processing disorders, ADHD and chronic migraine.²¹ As set out by **Ms Smith**, the affected residents are currently exposed to noise in the order of 45 – 50 dB Ldn.²²
- 58 As a result of the residents' concerns, *WIAL* has been pressured to undertake additional infield monitoring and is currently undertaking a review of the flight path with the potential options resulting in either greater track miles or diminished safety and efficiency.²³ In my opinion, this comprises quite a stark example of how airport noise can raise significant concerns for the community and how these concerns can in turn have the potential to constrain existing airport operations, including incurring

²⁰ *Plane Sense Wellington Incorporated v Airways Corporation of New Zealand Limited* [2024] CIV2024-485-423 (29 July 2024).

²¹ Plane Sense Wellington Media Release, 31 July 2024. [Plane Sense - Media \(planesensewellington.com\)](https://planesensewellington.com)

²² Evidence of L Smith, dated 30 August 2024, paragraphs 49-50.

²³ Evidence of L Smith, dated 30 August 2024, paragraphs 49-50.

effects on desired safety. In my view, this situation benefits no one, and if land use planning controls can be used to help avoid such a situation, they should be.

- 59 In addition, and as mentioned by Ms Smith in Hearing Stream 10A, a similar situation arose when Auckland International Airport Limited (*AIAL*) trialled a new Required Navigation Performance (*RNP*) arrival procedure in 2013. The RNP was a shortened approach path designed to reduce fuel burn and air emissions. The new flight paths caused the number of complaints to jump from 2 per month to around 500 per month.²⁴ These complaints came from residents living within a relatively low aircraft noise area, which I understand was also in the order of 45 – 50 dB Ldn.
- 60 Another complicating factor when considering reverse sensitivity is that in my experience, people often overlook the fact that once reverse sensitivity effects arise, the opportunity to avoid them has passed. Given the difficulties and challenges of mitigating aviation noise once it is present, the most effective way to subsequently reduce the effects of airport noise on people is to reduce the noise at its source – the airport. At other airports around the country this takes the form of operational constraints such as overnight curfews, preferential flight paths, and restrictions on number and /or type of aircraft movements. In my view, an outcome such as this would be detrimental for both CIAL and the community.
- 61 To summarise, based on my experience and the evidence of Ms Smith and Professor Clark, I hold the opinion that enabling the intensification of noise sensitive activities within the 50dB Ldn Air Noise Contour is inherently undesirable and land use planning decisions should proactively avoid the potential for reverse sensitivity effects to arise in the future. Given the critical and strategic role that Christchurch Airport plays, allowing urban intensification to occur in locations that effectively bring people to the effect has a high potential to lead to compromise and ultimate constraining and/or curtailment of aircraft activity over time.

Acoustic Insulation

- 62 Mitigating the effects of airport noise with acoustic insulation is a commonly suggested technique to manage the adverse effects of airport noise and thus enable greater intensification. The Panel will recall a recommendation to this effect in the section 42A report on residential rezoning requests (Hearing Stream 12E).

²⁴ Evidence of L Smith, Hearing Stream 10A, dated 2 February, paragraph 69.

63 As set out in my evidence to Hearing Stream 12E, it is my view that sound insulation is a less desirable option compared to avoiding the effects of airport noise through appropriate land use controls.

64 My view is based on my experience, and supported by:

64.1 The evidence of **Ms Smith**, who stated in her Hearing Stream 10A evidence that sound insulation alone is not sufficient to prevent annoyance and reverse sensitivity effects. In her view, a noise mitigation approach results in an inferior outcome for residents, that does not mitigate all the effects of airport noise and introduces compromised living conditions;²⁵

64.2 The evidence of Professor Clark, who states that insulation schemes cannot account for effects in people's gardens or in other outdoor community facilities, and that given the difficulties and challenges of mitigating aviation noise once it is present, mitigation should be a last resort and relied upon within the planning process sparingly;²⁶ and

64.3 The recent *Auckland International Airport Limited* decision,²⁷ in which the High Court accepted that when it comes to airport noise, compliance with indoor acoustic standards is insufficient and consideration must be given to the effects of aircraft noise on external spaces and in situations where residents prefer to reside with open windows at warmer times of the year.

CONCLUSIONS

65 In light of the above, it is my view that the Airport Noise Qualifying Matter should not allow for further residential intensification within the 50db Ldn Noise Contour for the following reasons:

65.1 The 'Kaiapoi exemption' should not be relied upon when assessing proposals which promote increased development density;

65.2 Intensification will increase the number of people exposed to the effects of airport noise. The evidence of **Professor Clark** demonstrates the causal link between aviation noise and a range of health outcomes including annoyance, sleep disturbance, cardiometabolic health, children's learning, and mental

²⁵ Statement of Evidence of L Smith, Hearing Stream 10A, dated 2 February 2024, paragraphs 93–98.

²⁶ Statement of Evidence of Professor C Clark, dated 30 August 2024, paragraphs 46 and 54 of Appendix 1 Airport noise exposure and health effects report.

²⁷ *Auckland International Airport Ltd v Auckland Council* [2024] NZHC 2058.

health. The growing body of evidence suggests that even low levels of exposure to aircraft noise has the potential to affect community health;

65.3 Allowing urban intensification to occur in locations that effectively bring people to the effect has a high potential to lead to compromise and ultimate constraining and/or curtailment of aircraft activity over time, to the detriment of both CIAL and the community; and

65.4 Sound insulation is a less desirable option to manage adverse effects of airport noise compared to avoiding the effects of airport noise through appropriate land use controls.

66 For this reason, I support CIAL's submissions on the proposed Medium Density Residential and Residential & Large Lot Residential Zone chapters, seeking greater recognition of the significance of the Airport and the need to protect it from incompatible land use and development.

Dated: 30 August 2024

John Kyle

Appendix A: Operative vs Remodelled 50 Db Ldn Air Noise Contours.



- Operative (2008) 50 dB Ldn
- Remodelled Outer Envelope 50 dB Ldn
- Christchurch City
- Waimakariri District