BEFORE THE CHRISTCHURCH DISTRICT PLAN PROPOSED CHANGE 14 HEARINGS PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Proposed Plan Change 14 to the Christchurch District Plan

BRIEF OF EVIDENCE OF PAULINE FIONA ASTON

FOR MILES PREMISES LTD

(Submission no. 883)

And

EQUUS TRUST

(Further Submission no. 2102)

20 September 2023

QUALIFICATIONS AND EXPERIENCE

1. My name is Pauline Fiona Aston (MA Cambridge University, England; M.Phil Town Planning, University College London; MNZPI; MRMLA). I have 40 years resource management and planning experience.

2. I am Principal of Aston Consultants Resource Management and Planning, and have operated my own consultancy practice, based in Christchurch, since 1995.

3. I confirm that I have prepared this evidence in accordance with the Code of Conduct for Expert Witnesses Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. The issues addressed in this statement of evidence are within my area of expertise except where I state that I am relying on the evidence or advice of another person. The data, information, facts and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

4. Aston consultants works extensively in the Greater Christchurch area, with numerous clients with interests in subdivision, land development and land use planning matters. I am familiar with the Greater Christchurch planning environment, including the Christchurch District Plan.

5. I have read the officer planning reports relevant to the Miles Premises Ltd submission, namely the reports prepared by Sarah Oliver, Kirk Lightbody and Ike Kleynbos (planners).

RELIEF SOUGHT

Miles Premises Ltd

6. The Miles Premises Ltd (Miles) submission as lodged sought the following changes to PC 14:

i) Amend the Airport Noise Qualifying Matter (**AN-QM**) to only apply to areas within the 57 dBA Ldn airport noise contour, such a contour to be based on a maximum 30 year assessment period having regard to matters such as future growth projections, predicted flight paths and expected flight paths.

ii) Rezone land between the 50 and 57 Ldn CIAL airport noise contour for urban development, with no restrictions relating to airport noise, including the land at 400, 475 Memorial Avenue and 500, 520 and 540 Avonhead Road ('the Site'). Rezone/amend the current urban zoning of 400, 475 Memorial Avenue and 500, 520 and 540 Avonhead Road (Industrial Park – Memorial Avenue Zone) to allow the full range of business and related activities (industrial, office, accommodation, health, community, entertainment, recreation etc) and/or rezone in full or part Future Urban Zone or Medium Density Residential, in all cases with no restrictions in activity type or standards due to airport noise effects.

iii) Delete the Low Public Transport Accessibility Qualifying Matter (LPTA-QM), in particular as it applies to areas in north west Christchurch.

7. Miles made further submissions broadening the relief sought, including by supporting submissions which sought that the AN-QM be deleted, or that noise sensitive activities be permitted within the AN-QM where acoustic insulation requirements are met.

8. The relief now pursued by Miles is:

AN-QM

9. If an AN-QM is accepted by the Hearing Panel, that this apply at the 55 dBA Annual Average revised airport noise contour (as recommended by the Expert Panel appointed to review the airport noise contours[1]).

10. Noise sensitive activities (as defined in the District Plan) be permitted between the revised 55-65 dBA revised airport noise contours, subject to noise mitigation by way of noise insulation, utilising the same standards as apply under the operative District Plan

[1] Christchurch Airport Remodelled Contours: Independent Expert Panel Report June 2023.

i.e. Rule 6.1.7.2.2 as set out below, potentially with some amendments to be consistent with the District Plan approach to noise sensitive activities near to roads and railways (as discussed below):

6.1.7.2.2 Activities near Christchurch Airport

The following activity standards apply to new buildings and additions to existing buildings located within the 55 dB Ldn air noise contour or the 55 dB Ldn engine testing contour shown on the planning maps:

a. Any new buildings and/or additions to existing buildings shall be insulated from aircraft noise and designed to comply with the following indoor design sound levels:

A. Residential units, hosted visitor accommodation and unhosted visitor accommodation:

I. Sleeping areas – 65 dB LAE/40 dB Ldn

II.Other habitable areas – 75 dB LAE /50 dB Ldn

B. Visitor accommodation (other than hosted visitor accommodation and unhosted visitor accommodation), resort hotels, hospitals and health care facilities:

I.Relaxing or sleeping - 65 dB LAE /40 dB Ldn

II.Conference meeting rooms - 65 dB LAE / 40 dB Ldn

III.Service activities – 75 dB LAE /60 dB Ldn

C. Education activities:

I.Libraries, study areas – 65 dB LAE /40 dB Ldn

II.Teaching areas, assembly areas – 65 dB LAE /40 dB Ldn

III.Workshops, gymnasiums – 85 dB LAE /60 dB Ldn

D. Retail activities, commercial services and offices:

I.Conference rooms – 65 dB LAE /40 dB Ldn

II.Private offices – 70 dB LAE /45 dB Ldn

III.Drafting, open offices, exhibition spaces - 75 dB LAE /50 dB Ldn

IV.Typing, data processing – 80 dB LAE /55 dB Ldn

V.Shops, supermarkets, showrooms - 85 dB LAE /60 dB Ldn

E. Sound stages, studios for filming and/or sound production for Commercial film or video production activities - 47 dB LAE

ii. Noise insulation calculations and verification shall be as follows:

A. Building consent applications shall be accompanied with a report detailing the calculations showing how the required sound insulation and construction methods have been determined.

B. For the purpose of sound insulation calculations, the external noise levels for a site shall be determined by application of the air noise contours Ldn and LAE. Where a site falls within the contours the calculations shall be determined by linear interpolation between the contours.

C. If required by the Council, in conjunction with the final building inspection the sound transmission of the façade shall be tested in accordance with ISO 16283-3:2016 to demonstrate that the required façade sound insulation performance has been achieved, and a test report is to be submitted to the Council's Head of Building Consenting (or any subsequent equivalent position). Should the façade fail to achieve the required standard then it shall be improved to the required standard and re-tested prior to occupation.

Zoning

11. The amended relief focusses on amendments to the zoning of the Site, rather than wider north and west Christchurch area lying within the revised 50-57 dBA noise contour.

12. The amended zoning sought for the Miles Site ensures efficient use of land between the revised 50-55 dBA noise contour; and enables noise sensitive activities, with appropriate mitigation, within the 55 dBA noise contour. Noise mitigation measures could potentially be applied up to the Air Noise Boundary (65 dBA).

13. Rezoning part of the Site to Medium Density Residential (**MRZ**), retain the remainder as Industrial Park (Memorial Avenue), as shown the planning map below i.e.

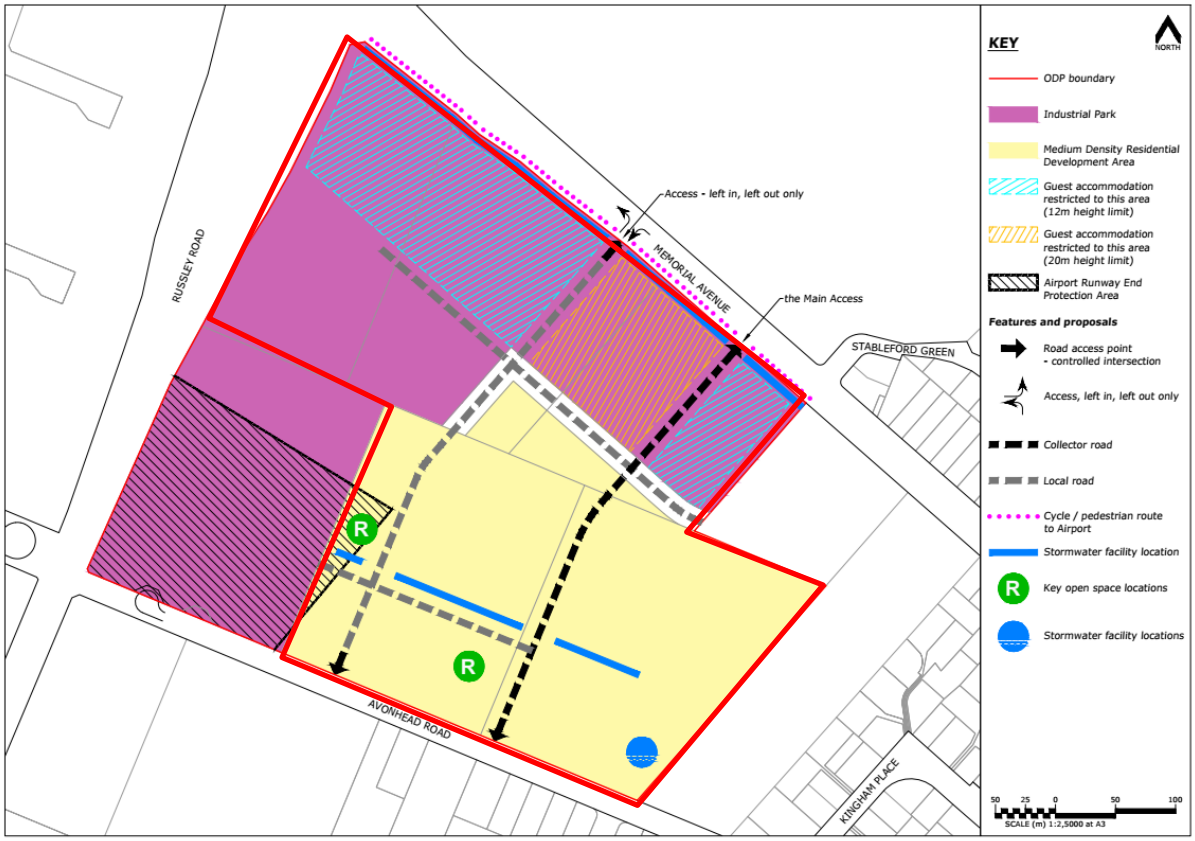


Figure 1: Proposed Outline Development Plan for Industrial Park (Memorial Avenue) Zone and Medium Density Residential Zone Land owned by Miles Premises Ltd outlined in red.

14. While Miles seeks rezoning through the PC14 process, in the event that the rezoning cannot be approved through this process, Miles wishes to inform the Hearings Panel of its intentions for the Site (which can be pursued through another process, e.g. private plan change), as these opportunities may be impacted by the PC14 determinations on qualifying matters.

LPTA-QM

15. The Site is outside the area affected by the notified LPTA-QM. Most submissions in relation to the LPTA-QM either seek its deletion in its entirety, or amendments to be less restrictive in its application. Miles would strongly oppose extension of the LPTA-QM

areas so that they included the Site. Given the nature of submissions and further submissions, and the officers reports, this seems unlikely.

Equus Trust

16. The Equus Trust further submission supports the submission by Troy Lange (884). Equus Trust owns 76 Hawthornden Road, Avonhead, and Troy Lange also has an interest is this property.

17. Troy Lange's submission seeks rezoning land between the 50 and 55 Ldn CIAL airport noise contour for urban development, with no restrictions relating to airport noise, including 120, 100, 88, 76, 68, 66, 60, 46, 44, 42, 40 and 38 Hawthornden Road as identified on the aerial photograph (Figure 2) below; and that these properties by rezoned Future Urban Zone or Medium Residential; removal of the LPTA-QM.

18. Equus Trust is not pursuing the aspects of the Troy Lange submission seeking removal of the LPTA-QM or rezoning of 76 Hawthornden Road and other neighbouring properties for urban development. It intends to pursue this through other subsequent planning processes, including the Greater Christchurch Spatial Plan and review of Canterbury Regional Policy Statement (**RPS**).

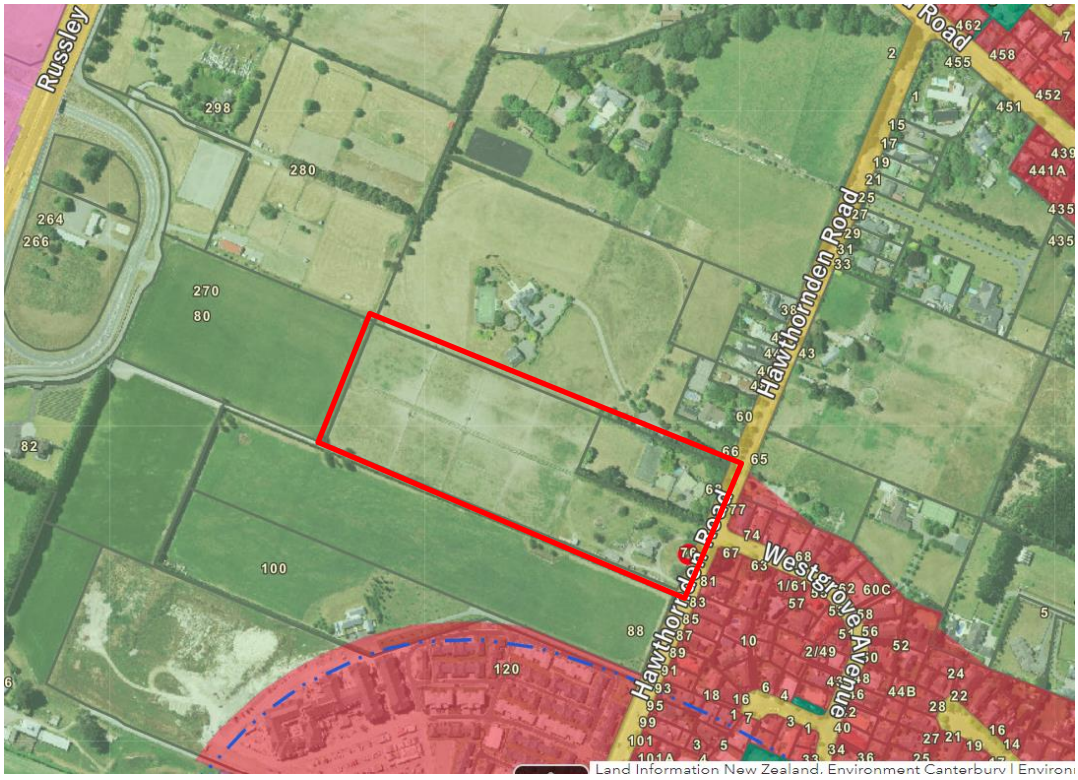


Figure 2: Land at Hawthornden Road proposed to be rezoned (and in addition other land located between the 50-55 dBA Ldn noise contour). 76 Hawthornden Road outlined in red.

Scope of Evidence

19. My evidence focuses on those aspects of the Miles Premises Ltd submission and Equus Trust further submission relief which are of primary concern, namely the airport noise qualifying matter (AN-QM) and zoning of the Miles submission Site (400, 475 Memorial Avenue and 500, 520 and 540 Avonhead Road).
20. My evidence addresses:
    a. Background and context
    b. PC14 provisions for the Miles Site and Equus Trust land
    c. Airport Noise Qualifying Matter (relief sought by Miles and Equus)
    d. Rezoning (relief sought by Miles)
    e. Policy Framework and Statutory Assessment

BACKGROUND AND CONTEXT

Miles Site

21. The Miles site is in a 'strategic' location on the city side of the SH1/Memorial Avenue interchange, with the Special Purpose Airport Zone adjoining (on the airport side of the interchange).

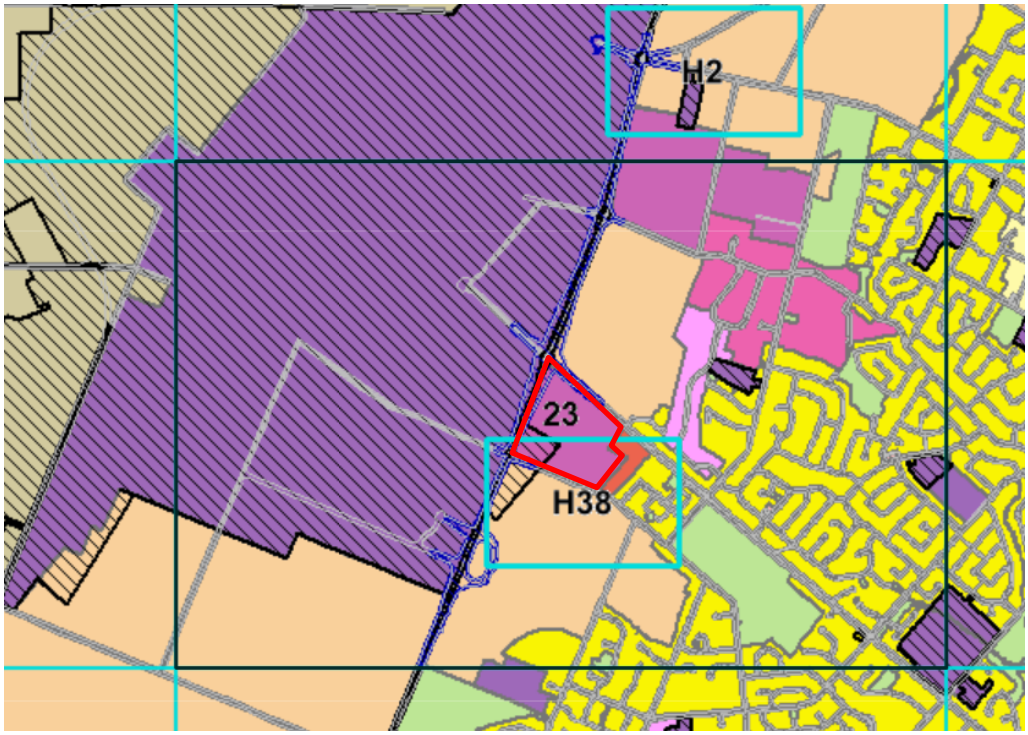
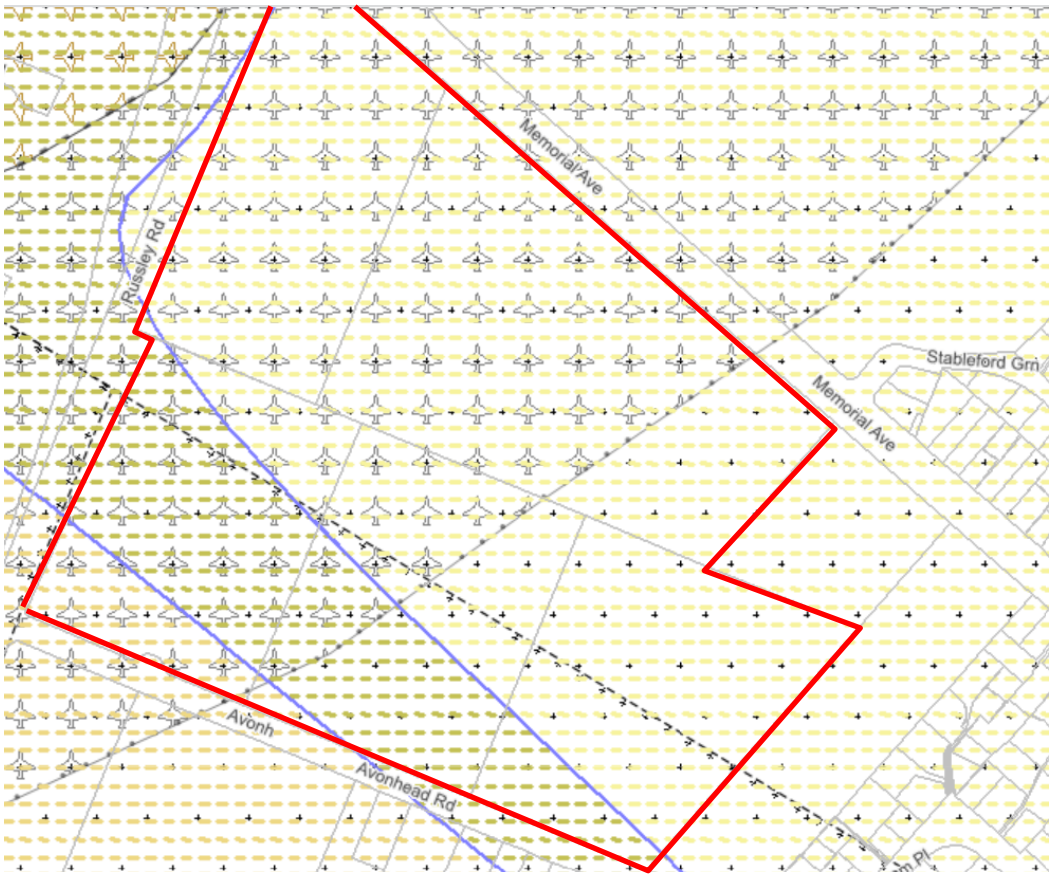


Figure 3: Site outlined in red. Operative zoning – Industrial Park zone - magenta; Special Purpose Airport zone – purple; Residential Guest Accommodation zone – red/orange; Residential Suburban Zone – yellow; Urban Rural Fringe zone - buff

22. The majority of the Industrial Park (Memorial Avenue) Zone is owned by Miles Premises Ltd, apart from the south west block (540 Avonhead Road, 3.88 ha).

23. The Industrial Park (Memorial Avenue) zoning allows for a range of business activities, including industry, warehousing and distribution, commercial services, ancillary retail and offices, service station, smaller scale food and beverage, and some community activities. Area specific activities include visitor accommodation (maximum 200 beds) and preschools outside the 50 dBA contour.

24. The operative airport noise contours as they affect the Site are shown below.



Airport Noise

- Air Noise Boundary
- 50 dB Ldn Air Noise Contour
- 55 dB Ldn Air Noise Contour

Airport Protection

- Christchurch International Airport Protection Surfaces

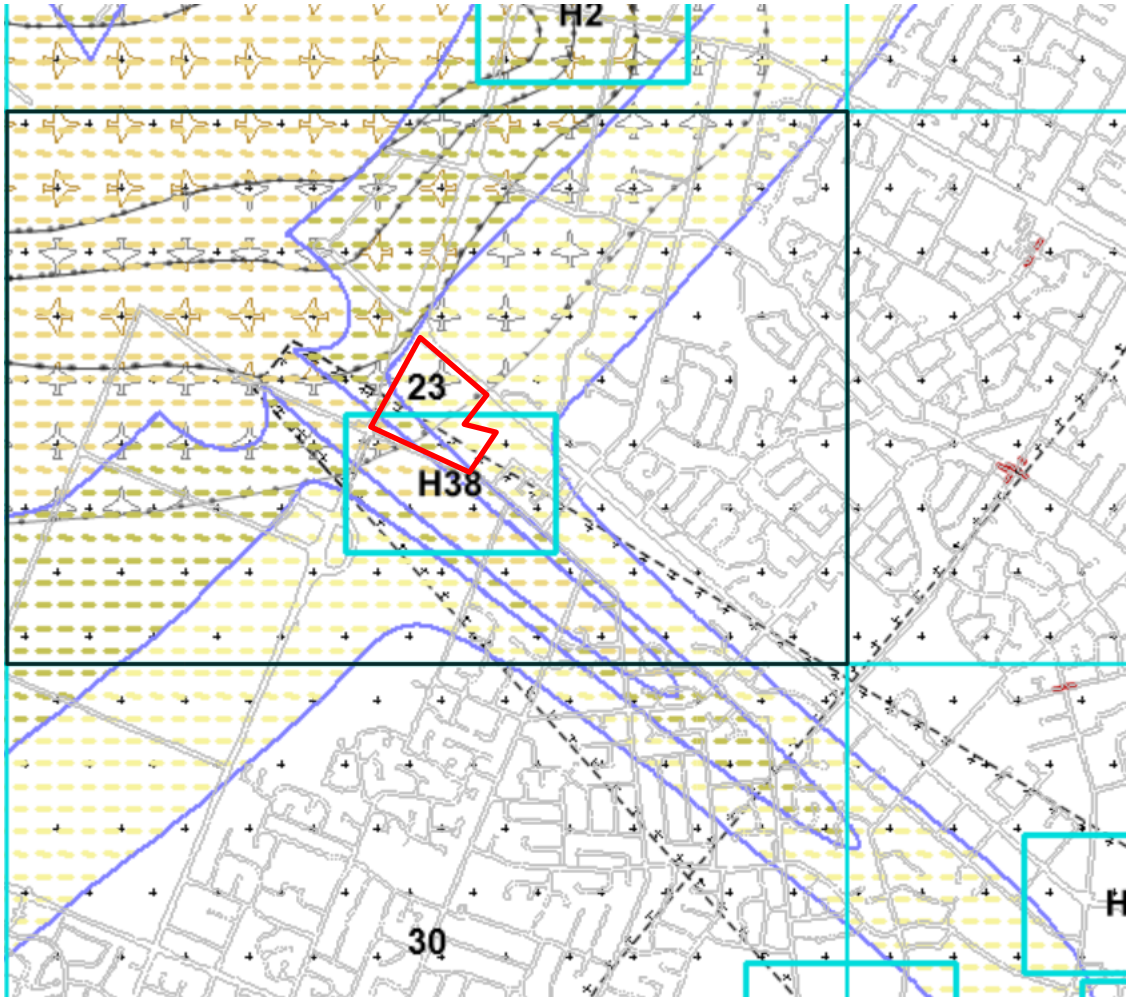


Figure 4: Operative noise contours. Site outlined in red.

25. The majority of the Site is located between the operative 50 and 55 dBA noise contours, with a smaller area (generally towards Avonhead Road) located within the operative 55 dBA contour.

25. Activities within 50m of the Russley Road and Memorial Avenue site frontages are controlled with respect to design and amenity, in order to give effect to the following area specific objective and policy: -

    16.2.4 Objective - Amenity at the western gateway to the City

    Development at the western gateway to the City and adjacent to Memorial Avenue has a high visual and aesthetic quality given its prominent location.

    16.2.4.1 Policy - Amenity values along Memorial Avenue

Maintain the amenity values along Memorial Avenue as a visitor gateway through the provision of buildings of a high visual and aesthetic quality, limited signage, a large building setback and landscaping along the frontage with Memorial Avenue.

26. The Site has a long planning history. The operative zoning was introduced at the time of the Replacement Christchurch District Plan, and was considered by the Council to be an appropriate response to the Site location and attributes. It enables business and community activities which are not 'noise sensitive' and do not give rise to adverse distributional effects with respect to other commercial centres.

27. Most recently (2021), a land use consent application was lodged to establish international automotive franchises incorporating sales, showrooms, display and associated office and workshop facilities, and associated car parking, access and manoeuvring within the Memorial Avenue portion of the Site; and a supporting subdivision consent application for the entire Site.

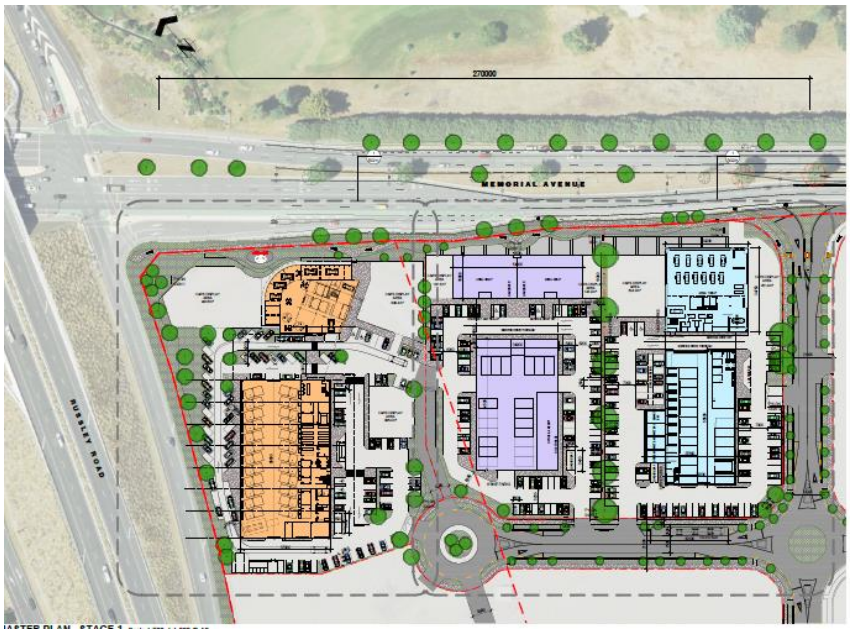


Figure 5: 2021 land use consent application – site plan and proposed development perspectives

28. The 2021 application is currently on hold pending completion of the subdivision consent that enables creation of the site accesses, but the intention remains to proceed with this development in time.

29. There are currently no plans for the Avonhead Road portion of the Site. This has less profile so is not suited to business activities which require a high profile position along a major transport route. Land on the opposite side of Avonhead Road is zoned Rural Urban Fringe (minimum lot size for subdivision or a dwelling 4 ha), albeit that much of it is developed into conventional suburban residential density houses. Land adjoining to the east is the existing Commodore Hotel (zoned Residential Guest Accommodation), and beyond this the Residential Suburban zone.

30. The Avonhead Road portion of the Site would be well suited to residential development, providing sought after greenfield land in a highly accessible location next to the employment area proposed for the Memorial Avenue portion of the Site, and close to other major employment hubs, including the airport, Wairakei/Roydvale Avenue business park, and readily accessible to the central city (appx 7km to the south east). Given the proposed activities for the Memorial Avenue portion of the site, there is little likelihood of reverse sensitivity effects and indeed the passive security offered by adjoining residential activities are complimentary to the commercial activities.

PLAN CHANGE 14

31. The Site retains the current operative zoning under PC14 as notified. The surrounding area affected by the proposed AN-QM is shown as the Airport Noise Influence Area (ANIA).

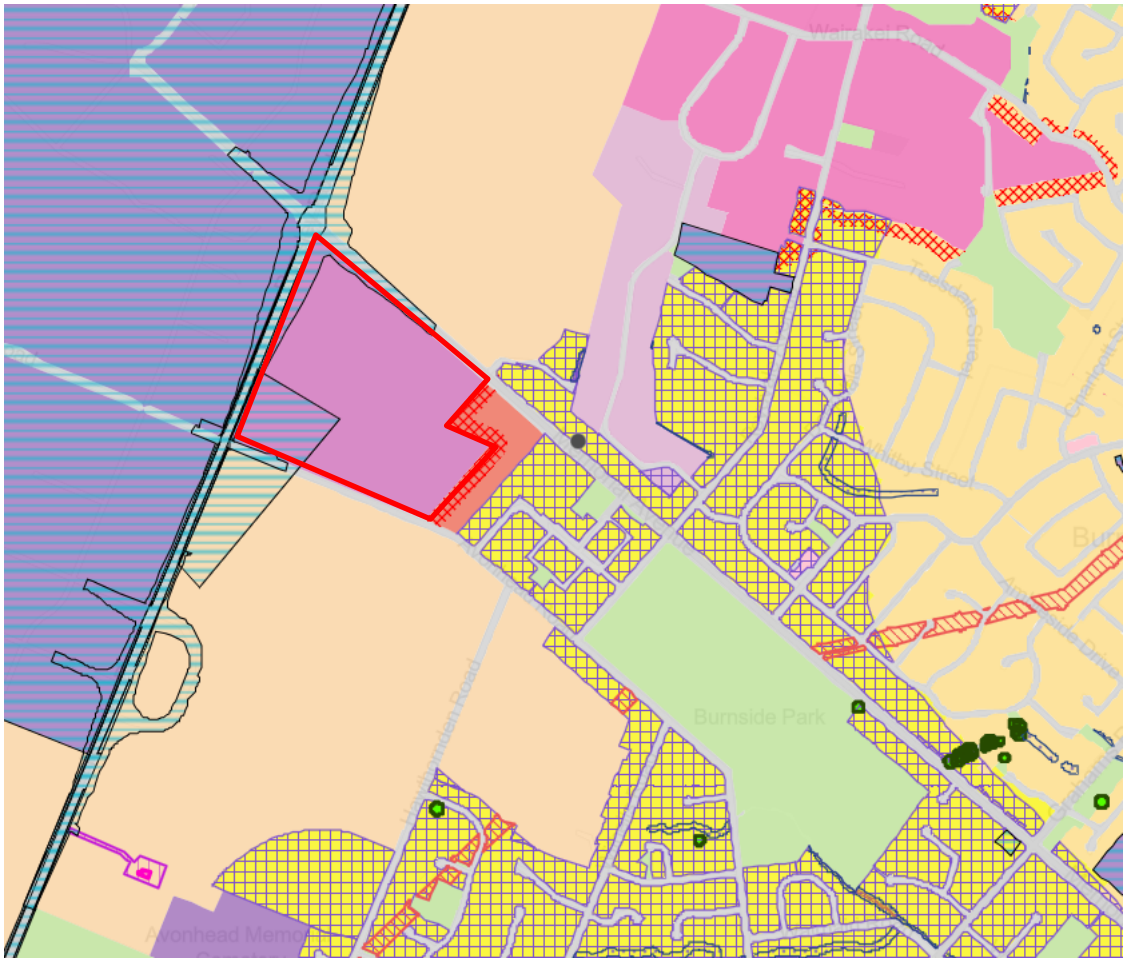


Figure 6: notified Plan Change 14 planning map – Site outlined in red;

32. The Airport Noise Influence Area corresponds with the operative residential zoned areas within the revised 50 dBA Annual Average Noise Contour (**AANC**). As the Site and 76 Hawthornden Road do not currently have residential zoning, the ANIA is not mapped over this land. The revised contours as they affect the Miles site and Hawthornden Road are included in **Appendix A,** along with the Outer Envelope Noise Contour (**OENC**) which Christchurch International Airport Limited (CIAL) submission wishes to apply.

33. CIAL has described the remodelling process at Selwyn District Plan hearings to implement MDRS (Variation 1 to the Proposed Selwyn District Plan) as a ‘once in a generation’ shift in the management of commercial aircraft movements at Christchurch. Key to this "shift" is the adoption of performance based as opposed to manual navigation.

34. The OENC is more restrictive than the AANC. Both sites are entirely outside the Airport Noise Boundary (which applies at the 65 dBA contour). For the Equus Trust land, 76 Hawthornden Road is wholly outside the 55 dBA AANC and only a small portion at the north east corner is within the 55 dBA OENC. For those parts of the Miles Site that Miles seeks residential zoning over, the northernmost part of 520 Avonhead Road and more than half of 500 Avonhead Road are outside the 55 dBA OENC, while more than half of 520 Avonhead Road and virtually all of 500 Avonhead Road are outside the 55 dBA AANC.

35. My understanding is that the AANC is based on the annual average movement numbers and does not reflect the normal busy 3-month period (no peaking factor applied). Whereas the OENC is based on the worst case 3-month period. It uses peaking factors to increase the annual movement numbers to the busy 3-month period at Christchurch International Airport.

36. The notified AN-QM is based on the AANC 50 dBA noise contour. It precludes application of the MDRS to the Airport Noise Influence Area (ANIA) i.e. retains urban densities at the operative ‘status quo’ densities. For the neighbouring Residential Suburban Zone, this is one dwelling per 450m^2 as a permitted activity, and one dwelling per 400m^2 as a restricted discretionary.

AIRPORT NOISE QUALIFYING MATTER

Should the AN-QM apply at the 50 or 55 dBA airport noise contour?

37. In October 2021 CIAL provided the following to the Canterbury Regional Council (CRC):

    2021 Christchurch International Airport Expert Update of the Operative Plan Noise Contours – For Review by Environment Canterbury's Independent Expert Panel. (**2021 Update**).

    These were the most up to date airport noise contours at the time PC14 was notified (in 19 March 2023). The 2021 Update included alterative revised contours, both the AANC and OENC.

38. Since notification of the PC14, the 2021 Update has been revised, and the following 'final' report provided by CIAL to CRC:

    Christchurch Airport Remodelled Contours: Independent Expert Panel Report June 2023. (**2023 Final Report**).

39. The AN-QM in notified PC14 was based on the 2021 Update 50 dBA AANC contour.

40. Although not specifically stated, I assume that the reporting officer, Ms Oliver supports adoption of the 2023 Final Report contours, rather than the 2021 Update contours.

    Ms Oliver refers to the CIAL submission discussion of previous case law and *'substantial body of evidence'* as confirming that '*the areas subject to levels of 50dBA Ldn or greater, represent an undesirable noise environment'*. In particular:

    The case law (with some excerpts have been provided in Part 2 of the Section 32 Appendix 1750) includes the 2004 Environment Court decisions on Variation 52 appeals, where the Court accepted that although there was no prospect of a curfew on the airport at that time, there is

    "likely to be an adverse effect on amenity of persons living within the 50 dBA Ldn contour line and thus an environmental cost imposed, with the effect largely on outdoor amenity".[2]

[2] Ms Oliver s42A report paragraph 12.38

41. Ms Oliver is *"not aware of any new evidence that would justify changing the CRPS 50dBA Ldn policy position, nor the District Plan objectives, policies and rules."*

42. I accept that the CRPS policy position cannot be changed as part of the PC14 process, but it does not preclude the AN-QM being based on the more appropriate airport noise contour i.e. 55 not 50 dBA.

43. Professor John-Paul Clarke has provided evidence for Miles and Equus Trust, addressing the development of the revised contours, application of the 50 or 55dB contour, and evidence provided by CIAL relating to assessments of airport noise effects (levels of annoyance). As detailed in his evidence, use of the 55dB contour is widely accepted internationally as setting an acceptable exposure limit for aircraft noise. He concludes that no data has been presented that would warrant variation of that widely accepted approach.

44. Utilising the 55 dBA contour is also consistent with the NZS 6805. NZS 6805 allows the local authority to incorporate into its district plan aircraft noise contours based on the Annual Noise Boundary (ANB; based on the 65dBA12 Ldn13 contour) or Outer Contour Boundary (OCB; based on the 55dBA Ldn to less than 65dBA Ldn), or in a position farther from or closer to the airport if a special circumstance warrants use of a different Ldn[3]. As discussed below, with respect to CIAL, the only aspect of resident amenity being protected between the 50-55 dBA contour is outdoor amenity, and indoor amenity if windows are open. Mechanical ventilation requirements can address the latter. There is no risk of a night curfew for CIAL. I do not consider these aspects amount to 'special circumstances' which justify a tougher noise standard.

45. Enabling residential activity outside of the 55dB contour and providing for noise sensitive activities within the 55dB contour where acoustic insulation is provided is also more consistent with noise standards to protect other city strategic infrastructure. Plan Change 5E Noise addresses noise sensitive activities near roads and railways. Outside the central city, noise insulation for habitable rooms within buildings used for sensitive

[3] 2023 Final Report page 1-3

activities is required where the sound incident on the most exposed part of the proposed façade of the affected space is less than 55 dB LAEq(1h) for rail noise or less than 57 dB LAEq(24h) for road traffic noise – as per Table 1 below[4]. The 1 hour average is used for train noise to recognise the specific characteristics associated with this form of transport.

Table 1: Internal sound design levels near roads and railways

Measurement point for road or railway	Distance (metres)	Internal design sound levels (i)	
		Bedrooms	Other habitable spaces and spaces used for other ~~S~~sensitive activities:
Centre of the nearest railway track ~~including railway sidings on private property~~	100	35dB L_{Aeq} (1h)	40dB L_{Aeq} (1h)
Nearest ~~Boundary~~ edge of the nearest marked traffic lane of any State Highway~~.~~ or the nearest sealed edge of the road where there is no marking.	100	40dB L_{Aeq} (24h)	
Nearest edge of the nearest ~~Marked~~ marked traffic lane of any Major or Minor Arterial road~~.~~ or the nearest sealed edge of the road where there is no marking.	40		
Nearest edge of the nearest ~~Marked~~ marked traffic lane of any Collector Road~~.~~ or the nearest sealed edge of the road when there is no marking.	20		

46. Acknowledging that the rules to manage airport, road and rail noise use different noise metrics and therefore are not directly comparable, I note that:
    1) Noise insulation is only required where noise exceeds 55 dB LAEq(1h) for rail noise or 57 dB LAEq(24h) for road traffic noise
    2) No noise mitigation is required in relation outdoor amenity.

[4] Plan Change 5E Hearings Panel Recommendation Appendix 1 – see https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2020/PC5/Hearings-Panel/Plan-Change-5E-Noise-Appendix-1-Recommended-Decision-Final-20-March-2023.pdf

3) Internal design sound levels shall be achieved in conjunction with the ventilation requirements of the New Zealand Building Code. If windows are required to be closed to achieve the internal design sound levels, then a mechanical ventilation system and an air conditioning unit are required (specifications included in the PC5E rules package).
4) Calculation of road noise takes into account potential increases in road traffic over time. The internal noise insulation is to be either
   - measured or predicted noise levels plus 3 dB added to predicted sound levels; or
   - calculated from forecast traffic in 20 years' time.

47. In terms of the 'undesirable noise environment' referred to by Ms Oliver, the only issue is outdoor amenity, and indoor amenity if windows are left open. Neither of these has been considered a relevant aspect of residents' amenity which justifies a more stringent noise standard with respect to road or railway noise. In those cases, the requirement for mechanical ventilation gives residents the option of maintaining both low internal noise levels and comfortable indoor temperatures with windows closed.

<u>Should the AN-QM be based on the Annual Average or Outer Envelope Contour?</u>

48. The CIAL submission on PC14 seeks that the spatial extent of the AN-QM includes the outer extent of the:

    (a) Operative Contour; and

    (b) Remodelled Contour (Annual Average); and

    (c) Remodelled Contour (Outer Envelope).

    The remodelled contours are those contained in the 2023 Final Report.

49. The reason for applying all of the above is stated as *"an interim approach which is necessary to avoid potentially inappropriate development prior to the completion of the CRPS review. The alternative effectively allows the horse to bolt rendering the application of the Airport QM ineffective and potentially compromising community amenity and Airport operations."*

50. The OENC extends a considerable distance further than the AANC, including land in the vicinity of Riccarton Road as far as Hagley Park, including where higher densities are proposed to support a potential future Mass Rapid Transit (MRT) along Riccarton Road.

51. The 2023 Final Report describes the AANC and OENC contours as below
    - Annual Average Aircraft Noise Contours (overall annual average runway usage)
    - Outer Envelope Aircraft Noise Contours (composite of four worst-case contours, with each representing the highest runway usage on each runway over a 3-month period)

    It does not consider or recommend which contour set should be adopted for land use planning purposes.

52. This issue was addressed at the Selwyn Plan Change 71 and Proposed District Plan Variation 1 hearings,5 for which I provided planning evidence. My evidence on this matter for the Variation 1 hearing is reproduced below:

    3.23 At the time of the Proposed Plan hearing for Rolleston in late January 2023, the Submitters tabled documentation from the expert panel recommending that the AANC be used, a copy of this documentation also attached as Appendix D to my evidence.

    3.24 This document, dated 14 July 2022, provided advice to Environment Canterbury as to the appropriateness of using either the Outer Envelope or AANC. It stated (underlining my emphasis):

    The Annual Average Contour is based on the annual average movement numbers and does not reflect the normal busy 3-month period (no peaking factor applied). Whereas the Outer Envelope Contour is based on the worst case 3-month period. It uses appropriate peaking factors to increase the annual movement numbers to the busy 3-month period at Christchurch International Airport. The Outer Envelope Contour not only uses the highest 3-month usage for each runway, but it also applies the peak factor to establish a 'worst case' 3 month contour. The Outer Envelope Contour also includes a 10% addition to account for potential climate change effect on Runway 11/29 due to

[5] The Variation 1 Hearings Panel's recommendation was to retain the General Rural Zone over the land in question, because Variation 1 did not include the CIAL noise contour (either operative or revised versions) as a qualifying matter and therefore there was no ss32 or 77L assessment.

increased prevalence of nor-west wind conditions. The Outer Envelope Contour is a theoretical contour that would never be achieved.

….

According to the International Organization for Standardization's ISO 15666-2021, Acoustics — Assessment of noise annoyance by means of social and socio-acoustic surveys, community noise exposure studies will determine community response to noise by establishing their annoyance response over the past 12 months. It is unusual for a social study to enquire about a respondents worst experience. As land based control contours use community response (noise annoyance) thresholds, the contours themselves should also be derived from situations that would normally be experienced by a community and not a hypothetical situation.

3.25 The advice provided above is the view of the Peer Review Panel whose chair advised in a covering e-mail that: *"… the Panel concurred that the Annual Average Day is preferred based on existing guidelines and policy."* That advice was provided to the Christchurch and Waimakariri Districts, and as will be apparent, was relied upon in adopting the AANC for notification.

3.26 Although I am not an expert in the methodology used to develop noise contours, it is clear from the expert advice to Environment Canterbury that the Outer Envelope boundary is considered theoretical or hypothetical, and one that would never be achieved. That makes sense to me.

53. Ms Oliver considers that the OENC should generally be applied because the *impact ..*of adopting the AANC *…would be to expose a greater number of people to more regular aircraft movements over the summer periods, particularly with the northwest approach to the airport being used by aircraft more intensively during a three-month period when north-westerly winds are more prevalent. These months are likely to be when residents wish to open windows and utilise outdoor areas.* (paragraph 12.50).

54. CIAL's own experts are ambivalent. Ms Oliver refers to their advice:

In the context of identifying and managing noise effects, the question is whether a 3 month or 12 month noise exposure is the appropriate period to assess. In our view, there is no clear-cut answer. Most of the research regarding aircraft noise annoyance is based on residents' perception of noise. Given that three months is a reasonably sustained

period, the research based on 12 months may also be applicable to a 3 month exposure. The overall outcome for residents over a longer timeframe would depend on the degree of respite outside the busy three month period."

55. Notwithstanding Ms Oliver's view that the OENC is generally appropriate, she is prepared to accept a 'trade off' between protecting outdoor amenity and other PC 14 and Enabling Act objectives, namely facilitating intensification in the lower Riccarton Policy 3 location:

    enabling a mix of medium and higher density outcomes north of Riccarton Road across from the Riccarton Centre, is on-balance more appropriate. It is in my view some level of trade-off or rather acceptance for a reduce level of amenity, is needed to ensure Ōtautahi Christchurch is well-positioned to facilitate greater populations along the Riccarton Road corridor, and to ensure that the commensurate response to this major Town Centre is appropriate.

56. Clearly, there is 'room to move' with respect to application of noise control measures, other than beyond the 65 dBA Ldn contour. Thus the 2023 Final Report states:

57. Based on its review, the Independent Expert Panel finds that the finalised aircraft noise contours are suitable for informing future land use planning controls and that the appropriate 65dBA Ldn contour (either the Annual Average Contour or Outer Envelope Contour) can be used to set a noise limit for managing potential adverse effects of aircraft noise. (page 8-1)

58. The evidence of Professor Clarke is that the 55dB contour is widely accepted internationally as setting an acceptable exposure limit for aircraft noise, and that no data has been presented that would warrant variation of that widely accepted approach. He advises that most countries that have imposed regulatory limits on aircraft noise exposure, specify a limit around Ldn 55 dB for "onset of adverse effects". The prevalence of highly annoyed residents at that exposure level matches the prevalence of very noise sensitive people in a general population, about 10 %.

59. I also note Professor Clarke's review of the modelled contours, which finds that by making several worst case assumptions, the model has generated contours that will be significantly larger than in reality, and assume that aircraft noise will not decline over the

next 60 years. For this reason, the 55 dBA contour is already conservative (in favour of protecting CIAL).

Conclusion

60. In an AN-QM is to be imposed, it should apply at the 55 dBA AANC, and between the 55 – 57 dBA AANCs (or a greater area if this is supported by evidence from other submitters), noise sensitive activities should be permitted, subject to suitable noise mitigation measures being applied.

REZONING – MILES PREMISES LTD

61. Mr Lightbody's s42A report addresses the component of the Miles submission requested relief related to business zoning, namely allow the full range of business and related activities (industrial, office, accommodation, health, community, entertainment, recreation etc) within the Site. This relief is no longer sought.

62. The Reporting Officer's concern regarding the distributional and urban form effects related to the original proposal for the whole of the 21ha site to be re-zoned for business purposes. Those effects of concern are reduced to the extent that the submitter seeks to retain 13ha of Industrial Park zoning, and convert and 8 ha to residential zoning.

63. The reason for seeking rezoning of this land for residential purposes is because it is a preferred use, compatible with the intended commercial development of the Memorial Avenue portion of the site, and the neighbouring Guest Accommodation, residential and rural uses adjoining.

64. The site is already zoned for urban use and has been the subject of significant technical investigation through the Replacement District Plan zoning process, and more recently in preparation of applications for subdivision across the wider Miles Site, and land use along the Memorial Avenue frontage.

65. The proposed ODP reflects a revised roading layout arrived at following further detailed roading design, consideration of land uses and transport assessments. In the process of preparing subdivision and land use application, GHD Consultants have provided a

detailed assessment of trip generation (for both the activities sought in the land use application and anticipated land uses over the remainder of the site) and have confirmed that the proposed roading and intersection design is appropriate for this traffic generation. In preparing this submission, further advice has been sought from GHD as to the implications for traffic generation. GHD has confirmed that the traffic generation would reduce on rezoning from Industrial Park to Mixed Density Residential (for the area sought to be rezoned, from approximately 6,595 vehicle movements per day to approximately 1,344 vehicle movements per day, assuming residential development at 15 households per hectare).

66. The Site has the benefit of visual and amenity separation to adjoining land uses by the nature and form of Memorial Avenue and Russley Road with the significant gateway design features clearly marking the entry to the airport precinct. Within the context of change enabled by PC 14, provision for both business and residential land as being sought by the submitter is consistent with the NPS-UD in ensuring that future urban form that provides additional options to provide for people and community's commercial, employment and housing needs.

POLICY FRAMEWORK AND STATUTORY ASSESSMENT

National Policy Statement – Urban Development

<u>Sufficient development capacity</u>

67. Ms Oliver considers that "the only grounds to which I would consider it is not appropriate to apply the 50dBA Noise Contour, would be that in doing so the city could not achieve the NPS-UD Objective 1 relating to a well-functioning urban environment and NPS-UD Objective 2 relating to housing affordability and competitive land and development markets. Whilst NPS-UD Objective 3 relates to enabling more people to live near centres, employment areas and in high demand areas, there is still a level of discretion as to how and what extent this occurs." (paragraph 12.40); and that these circumstances do not apply in relation to the PC14 AN-QM. She refers to advice from CIAL's acoustic experts:

12.45 Marshall Day Report CIA Land Use Planning Report 23 May 202253 (page 1) "…There is no doubt there are adverse effects from aircraft noise at 50 dB Ldn. While

the adverse effects are less than, for example, they are at 65 dB Ldn , they are nevertheless real. If land is available elsewhere in the Christchurch region for new residential development (or intensification), it is proposed that it is not sensible from an acoustics perspective, to allow new noise sensitive activities inside the 50 Ldn Air Noise Contour if it can be avoided. It is accepted that noise effects are just one input to the decision making process on land use restrictions."

68. Ms Oliver's position is clearly predicated on her acceptance of the CIAL evidence as to the merits of excluding new residential development (or intensification) within the 50dB contour. I disagree with the conclusions reached, as addressed above.

69. That point aside, I also disagree with the view that that the relevant consideration would be whether land is available 'elsewhere in the Christchurch region'.

Well-functioning urban environment

70. Policy 1 on the NPS-UD requires that as a minimum, well-functioning urban environments:

(a) have or enable a variety of homes that:

(i) meet the needs, in terms of type, price, and location, of different households; and

(ii) enable Māori to express their cultural traditions and norms; and

(b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and

(c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and

(d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and

(e) support reductions in greenhouse gas emissions; and

(f) are resilient to the likely current and future effects of climate change.

71. The Miles site easily meets all of the above criteria. The proposed MR rezoning will:

- help meet demand for in greenfield housing capacity in north west Christchurch;

- retain IP zoning over most of the Site, including most importantly, the Memorial Avenue frontage which is well suited to high amenity business development reliant on the strategic, high profile location at the 'gateway' to the city from the airport;
- enable urban business and residential development in a highly accessible location, close to major employment hubs, and the central city and well serviced by public transport (as reflected by PC14 – it is outside the LPTA-QM areas);
- support competitive land and development markets by providing a greenfield residential development opportunity in a part of the City;
- the site's excellent accessibility by multiple transport modes (including public trransport and active modes) will minimise travel distances, thus contributing to reductions in greenhouse gas emissions in comparison to more 'distant' less well connected locations; and
- the site is inland and not subject to natural hazard overlays that affect many other parts of the city and will become more significant over time due to climate change (in particular areas affected by sea level rise and flooding).

Canterbury Regional Policy Statement

72. Policy 6.3.5 of the Canterbury Regional Policy Statement (RPS) requires integration of land use development with infrastructure by:

73. 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

74. The acoustic expert evidence of Professor Clarke is that the 55dB Ldn contour is widely accepted internationally as setting an acceptable exposure limit for aircraft noise, and that no data has been presented that would warrant variation of that widely accepted approach in respect of Christchurch International Airport. He concludes that outside the outer limiting contour (around 55 dB Ldn) very few people will be affected and only sporadic noise complaints will be registered. The number of complaints will remain relatively stable for exposure levels below this point, as there will always be a small proportion of complainers no matter how low boundary is set.

75. I also note the assessment of RMG (s77K assessment, page 30) that one of the reasons CIAL receives low levels of complaints is because "people do not complain if they assume their complaints are likely to have no effect. If the airport is operating in its normal mode and they are annoyed, they know nothing can be done about the noise". Where Christchurch Airport's operations are compliant, and where the contour applied is widely accepted as appropriate, I consider the risk of CIAL receiving increased complaints and those increased complaints curtailing the efficient operation, use and development of the airport is very low.

76. PC 14 must ‘give effect’ to higher order documents including the RPS. I note the RPS is scheduled for review in 2024, and that the review will test the revised noise contours (developed by CIAL, reviewed by the Expert Panel) and consider the appropriate land use policies that accompany them.

77. I am also familiar with the background behind the inclusion of the current 50 Ldn Contour in the Canterbury Regional Policy Statement (CRPS, including the submissions on, and variations to, the then Proposed Change 1 (PC1) to the CRPS originally notified in 2007. Environment Court appeals challenging these contours and the appropriateness of policy restrictions based on the 50 Ldn contour were lodged, but ultimately had to be abandoned when the Land Use Recovery Plan (LURP) was approved by the Minister for Canterbury Earthquake Recovery on 06 December 2013. Amongst other matters, the LURP inserted the contours and supporting objectives and policies in their present form into the CRPS. From my involvement, the LURP process itself provided very limited opportunities for effective public participation, in particular there were no hearings which would have enabled submitters to present evidence in support of their submissions.

78. Against this background, PC14 is also required to give effect to the NPS-UD, including Policy 1 discussed above. To the extent that there is a shortfall in housing capacity (including capacity within the same locality and market), I consider the requirement to give effect to the NPS-UD would prevail over the requirement to give effect to the RPS. The NPS-UD is both a higher order document and later in time.

79. The RPS also directs that new urban activities are restricted to within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the RPS (Policy 6.3.1.4). The Miles Site is already zoned for urban activities so this policy does not apply. In any case, the firm metropolitan urban limit set by Map A is inconsistent with the NPS-UD which provides for unanticipated urban development (in RMA documents) under Policy 8.

Christchurch District Plan

80. The acoustic evidence establishes that the relief sought by Miles and Equus Trust with respect to the AN-QM is entirely consistent with the following Christchurch District Plan (the District Plan) objectives and policies with respect to noise, including airport noise:

6.1.2.1 Objective - Adverse noise effects

a. Adverse noise effects on the amenity values and health of people and communities are managed to levels consistent with the anticipated outcomes for the receiving environment.

6.1.2.1.1 Policy - Managing noise effects

a. Manage adverse noise effects by:
   i. limitations on the sound level, location and duration of noisy activities;
   ii. requiring sound insulation for sensitive activities or limiting their location relative to activities with elevated noise levels.

6.1.2.1.5 Policy - Airport noise

a. Require the management of aircraft operations and engine testing at Christchurch International Airport, so that:
   (i) noise generated is limited to levels that minimise sleep disturbance and adverse effects on the amenity values of residential and other sensitive environments so far as is practicable;
   (ii) where practicable, adverse noise effects are reduced over time.
b. Mitigate adverse noise effects from the operations of the Christchurch International Airport on sensitive activities, by:
   (i) prohibiting new sensitive activities within the Air Noise Boundary and within the 65 dB Ldn engine testing contour; and

(ii) requiring noise mitigation for new sensitive activities within the 55 dB Ldn air noise contour and within the 55 dB Ldn engine testing contour; and

(iii) requiring Christchurch International Airport Limited (CIAL) to offer appropriate acoustic treatment in respect of residential units existing as at 6 March 2017 within the 65 dB Ldn Annual Airport Noise Contour, and within the 60 dB L dn engine testing contour.

81. Likewise, there is no conflict with the Residential objectives and policies relating to protecting strategic infrastructure, specifically

14.2.3.1 Policy - Avoidance of adverse effects on strategic infrastructure

a. Avoid reverse sensitivity effects on strategic infrastructure including:

(ii) Christchurch International Airport;

82. The above objectives and policies only require noise mitigation between the 55 – 65 dBA contours, and only exclude noise sensitive activities within the 65 dBA contour. They require permitted noise levels to "minimise" (not prevent) sleep disturbance and adverse effects on amenity values of residential environments. The only potential adverse effect between the 50-55 dBA contour (at a distant future date when and if the airport is operating close to or at full capacity) is on outdoor amenity and indoors if windows are open. These aspects of amenity are not protected in other noise environments such as close to roads and railways and on the acoustic evidence, are not justified on grounds of potential 'reverse sensitivity' effects giving rise to complaints which could restrict CIAL operations.

83. Strategic objective 3.3.13 (b) (iii) includes avoiding new noise sensitive activities within the 50 dBA contour except where already zoned or identified in the RPS for residential purposes:

Policy 3.3.13

b. Strategic infrastructure, including its role and function, is protected from incompatible development and activities by avoiding adverse effects from them, including reverse sensitivity effects. This includes:…

(iii) avoiding new noise sensitive activities within the 50dB Ldn Air Noise Contour and the 50dB Ldn Engine Testing Contour for Christchurch International Airport, except:

A. within an existing residentially zoned urban area; or

B. within a Residential Greenfield Priority Area identified in the Canterbury Regional Policy Statement Chapter 6, Map A; or

C. for permitted activities within the Specific Purpose (Golf Resort) Zone of the District Plan, or activities authorised by a resource consent granted on or before 6 December 2013; and

D. for permitted, controlled, restricted discretionary and discretionary activities within the Specific Purpose (Tertiary Education) Zone at the University of Canterbury; ..

84. This strategic objective reflects the RPS Policy to avoid noise sensitive activities within the 50dB contour. Like the RPS, it also pre-dates the NPS-UD. To the extent that there is a shortfall in housing capacity (including capacity within the same locality and market), I consider the requirement to give effect to the NPS-UD would prevail over the requirement to achieve the CDP objectives. The relief sought by Miles and Equus Trust enables consequential changes to be made to the District Plan, including objectives and policies, to give effect to the intent of the submission. This could include amendments to Objective 3.3.12.

Section 77L assessment

85. Section 77L details the evaluation required where a new QM is proposed which:

(a) identifies the specific characteristic that makes the level of development provided by the MDRS (as specified in Schedule 3A or as provided for by policy 3) inappropriate in the area; and

(b) justifies why that characteristic makes that level of development inappropriate in light of the national significance of urban development and the objectives of the NPS-UD; and

(c) includes a site-specific analysis that—

(i) identifies the site to which the matter relates; and

(ii) evaluates the specific characteristic on a site-specific basis to determine the geographic area where intensification needs to be compatible with the specific matter; and

(iii) evaluates an appropriate range of options to achieve the greatest heights and densities permitted by the MDRS (as specified in Schedule 3A) or as provided for by policy 3 while managing the specific characteristics.

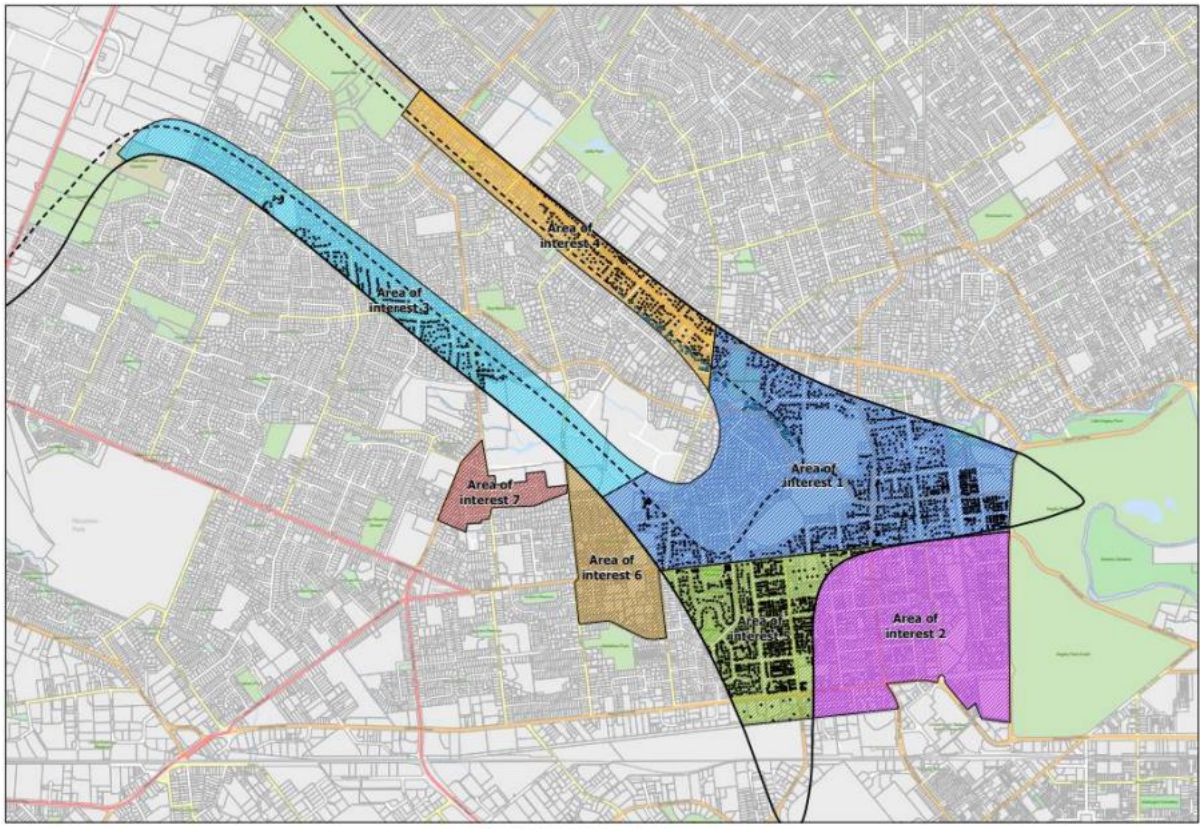
86. The revised airport noise contours are a new qualifying matter.

87. Ms Oliver's report considers s77L in relation to 'Areas of Interest' between what I assume to be the operative contour and the revised OENC and some additional areas as shown on the map below. The analysis assumes that 10% of the population living with the existing urban area within the revised OENC contour will be 'annoyed or highly annoyed' by airport noise, and an average of 2.2 persons/household. On this basis, she calculates:

When compared against an 800m HRZ (High (density) Residential Zone) catchment, with the Updated 50dBA Ldn Outer Envelope Noise Contour applied, the HRZ land area would be reduced by 66.7%, dropping the potential yield when assumed at 200hh/ha from 22,158hh to 5,822hh.6

The trade-off being that future households may experience, or as a consequence of living in this location, experience a reduced amenity during three months of the year and/or when the crosswind runway is in operation. I have estimated that when the same scenario is applied as above with regard to the potential to impact amenity, the difference in potential proportions of those annoyed or highly annoyed could be some 4,800 people (i.e. 22,000hh x 2.2pp/ha x 0.1 or 10%), as compared to over 1,200 people (i.e. 5,800hh x 2.2pp/ha x 0.1 or 10%).

[6] Ms Oliver s42A report para 12.60-61



CIAL Updated Noise Contour Spatial Analysis map

88. Ms Oliver considers that dwelling density managed by zoning is the most appropriate method to manage impacts of airport noise related noise effects:

Dwelling density is one of the primary factors that determines the characteristics of each residential zone and consequentially is a fundamental differentiating factor between zones. I consider that zoning is the most appropriate method to manage the number of people potentially impacted by airport noise, and that other MDRS and/or high density standards and any variations of the zone standards to be secondary (less effective) methods. I therefore consider any appropriate response needs only to focus on the different zoning approaches (namely the operative zoning compared to higher density options) and spatial extents of the zone options, within the 50dBA Ldn Noise Contour.7

[7] Ms Oliver s42A report para 12.63

89. Ms Oliver's analysis does not consider any other methods, such as acoustic insulation, to address airport noise effects, even though this the principal method adopted by the District Plan with respect to road and railway noise.

90. Ms Oliver has not considered the impact of applying the AN-QM at the 50 dBA OENC across the wider northwest Christchurch Area; or what would be the difference in potential residential yields if the contour applied at 55 dBA AANC (as sought by Miles and Equus Trust), with acoustic mitigation required between the 55 – 57 dBA contour as sought by Miles (or potentially between the 55-65 dBA contours). In this regard, I note that the scope of the s77G(4) extends to creating new residential zones as well as amending existing residential zones.

91. I have undertaken a site specific assessment with respect to the Miles site, as rezoning is sought under PC14 to enable residential development of appx 8 ha of the site. The Medium Residential Zone enables a density of 80 hh/ha. I have taken this figure from Ms Oliver's map below (paragraph 12.59 of s42A report), specifically the pink area which has a density of 80 hh/ha and is described as 'HRZ goes to MRZ'.

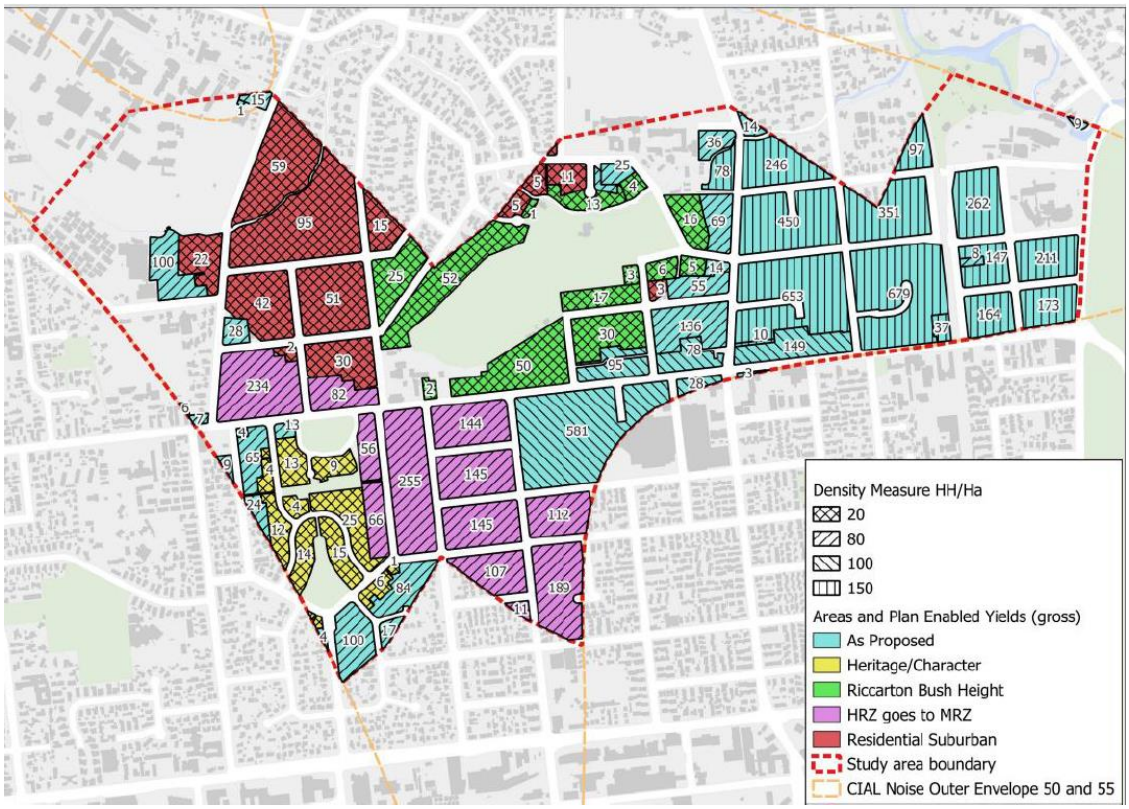


Figure 9: Extract from Ms Oliver's s42A report (paragraph 12.59)

92. MR zoning would enable an additional 640 households, or 1408 persons (based on 2.2 persons per hh). The acoustic evidence is that there is no justification for any District Plan restrictions in relation to airport noise between the revised 50 and 55 dBA AANC or OENC; and that between the revised 55 – 65 dBA contours acoustic insulation is a suitable mitigation measure for managing potential very distant future noise effects associated with the operation of CIAL if and when it is close to or operating at full capacity (estimated by the Expert Panel as in 61 years' time).

SECTION 32AA

93. The Council's notified s32 report does consider, from a s32 perspective, whether it is appropriate to retain a 50 dB outer control boundary contour (OCB), or replace it with a 55 dB OCB. The assessment concludes that retaining the 50 dBA OCB has direct environmental, economic and social benefits, and minimal economic and social costs. Moreover, it is both effective and efficient8. It:

a. Has direct environmental, economic and social benefits. There are no cultural benefits;

b. Has minimal economic and social costs, given the largely permissive rule framework attached to the contour and the findings of the housing capacity study. It should be noted, however, that there are potentially significant environmental, social and economic costs should the 50 dB contour be removed. There are no cultural costs;

c. Is effective as it will ensure that the protection of the Airport from reverse sensitivity effects, and the maintenance of the health, safety and amenity of residents will continue to be achieved; and

d. Is efficient given that the benefits will far outweigh the costs. In addition, the relevant District Plan provisions will remain intact.

94. The stated preferred objective to be evaluated is:

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[8] See https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2023/PC14/Section-32-Appendices-1/PC14-QM-s77K-CIAL-Christchurch-District-Plan_Updated-Report_AA_-final-11-July-2022.PDF

To achieve a balance in enabling housing supply and residential intensification, while protecting strategic infrastructure including the Airport from reverse sensitivity effects, and maintaining the health, safety and amenity of residents, through the imposition of the remodelled AAOCB as a qualifying matter over areas subject to MDRS provisions.

This does not specify which contour should be applied i.e. 50 or 55 dBA.

95. The evaluation is based on previous reports and research reviews undertaken by Marshall Day Acoustics and Air Biz. Professor Clarke is critical of these, particularly when applied to the circumstances of CIAL. In summary, he concludes that outside the outer limited contour (around 55 dB Ldn) very few peoples will be affected and only sporadic noise complaints will be registered. The number of complaints will remain relatively stable for exposure levels below this point, as there will always be a small proportion of complainers no matter how low boundary is set.

96. The economic importance of CIAL locally, regionally and nationally is not in dispute. What is at issue is to what extent, if at all, applying an AN-QM based on the measures sought be Miles and Equus Trust will potentially constrain potential distant future CIAL operations and therefore impose significant future economic and social costs.

97. The economic and social costs of applying the AN-QM at the revised OE noise contour are very significant, in terms of the spatial extent of the affected areas, where residential development is not permitted and intensification cannot occur. The Council says the 'costs' are tempered by the findings of the Housing Capacity Assessment – that there is ample future development capacity across the city as a whole. However, this fails to provide for housing needs in the northwest/west sector where there is very limited supply and strong demand; and assumes that intensification and greenfield residential opportunities are readily 'substitutable'.

98. s32 requires an assessment of an assessment of the risk of acting or not acting if "there is uncertain or insufficient information about the subject matter of the provisions". There is very large degree of uncertainty that the CIAL operations will ever reach ultimate capacity but we do know that if it does, it's likely to be a 'long way off', estimated by the Expert Panel as 60 years time. At the same time, the evidence of Professor Clarke is that the modelling makes worst-case assumptions, and assumes these will continue over the next 60 years, resulting in contours that are significantly larger than reality.

99. Based on the above, and taking into account Professor Clarke's assessment, in my opinion the Council's s32 assessment is flawed. An AN-QM based on the relief sought by Miles and Equus is the most appropriate method for achieving the Council's stated preferred objective.

CONCLUSION

100. The evidence for Miles and Equus Trust supports:

1) that the AN-QM, if there is to be one, should apply at the revised 55 dBA AA airport noise contour;

2) sensitive activities including residential activity between the 55 – 65 dBA revised AANC airport noise contour being permitted, subject to appropriate noise mitigation (acoustic insulation), consistent with the approach adopted in the District Plan for activities close to roads and railways.

3) Approximately 8 ha of the Miles submission site being rezoned from IP (Memorial Avenue) to Medium Residential, enabling significant additional development capacity - up to an additional 640 households, or 1408 persons.

101. In my opinion, the above approach to managing airport noise, and the proposed rezoning, is preferable in terms of meeting the requirements of s77L and s32 than the approach adopted by Ms Oliver. I note that Ms Oliver did not have the benefit of considering the Miles and Equus evidence when making her s42A report recommendations.

102. 109. The amended zoning meets the NPS-UD Policy 8 criteria for circumstances under which Councils must be responsive to 'unanticipated' development i.e. where it adds significant additional capacity and contributes to a well functioning urban environment.

Fiona Aston

20 September 2023

Appendix A - Revised noise contours

Miles Premises - Outer Envelope 2023:

Miles Premises - Annual Average 2023:

Equus Trust – Outer Envelope 2023

Equus Trust – Annual Average 2023