Before an Independent Hearings Panel
appointed by the Waimakariri District Council

under: the Resource Management Act 1991

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

and: Hearing Stream 1: Part 1 General Matters, Definitions, Strategic Directions and Urban Form and Development.

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

Statement of Evidence of Geoffrey Page

Dated: 1 May 2023

Reference: J M Appleyard (jo.appleyard@chapmantripp.com)
A M Lee (annabelle.lee@chapmantripp.com)

chapmantripp.com
T +64 3 353 4130
F +64 3 365 4587

PO Box 2510
Christchurch 8140
New Zealand

Auckland
Wellington
Christchurch

chapman tripp

STATEMENT OF EVIDENCE OF GEOFFREY PAGE

INTRODUCTION

1 My full name is Geoffrey Darren Page. I am an aviation and airport planning advisor with 20 years' experience specialising in airport master planning and strategy.

2 I am a consultant for the international specialist aviation and airport planning consultancy Airbiz Aviation Strategies Ltd (*Airbiz*). I am based in Auckland, and have carried out projects in New Zealand, Australia, the Pacific, North America, Europe, the Middle East, and Asia. I have spent 15 years working for Airbiz. Prior to working at Airbiz I spent 6 years working as a business analyst for Air New Zealand in their airport ground handling operation.

3 My professional qualifications are Bachelor of Technology (Honours) (Industrial Mathematics) and Master of Operations Research.

4 I have undertaken over 400 projects and studies for airports ranging in size from rural airfields, regional and domestic airports, and large international airports. My responsibilities have ranged from Project Manager to specialist technical consultant across a range of technical areas.

5 Within New Zealand I have undertaken projects for the following airports: Auckland, Mercer, Hamilton, Tauranga, Rotorua, Taupō, Hawke's Bay, Palmerston North, Kāpiti Coast, Wellington, Marlborough, Nelson, Christchurch, Wanaka, Queenstown, Oamaru, Dunedin, and Invercargill. I have also undertaken projects for Air New Zealand, the Ministry of Transport, the New Zealand Airports Association, and the New Zealand Aviation Security Service.

6 Internationally I have undertaken projects for airport such as Melbourne, Sydney, Brisbane, and Perth (Australia), JFK, Seattle, and Newark (USA), Vancouver and Calgary (Canada), Brussels (Belgium), Bristol (England), Hong Kong, King Shaka Durban (South Africa), and Rarotonga (Cook Islands).

7 I have been providing regular advice to Christchurch International Airport Limited (*CIAL*) on a broad range of aviation matters since approximately 2009, covering air traffic forecasting, master planning, aeronautical and non-aeronautical land uses, sustainability, future of aviation, aircraft noise issues, and terminal development.

8 I managed the Airbiz side of the project which delivered the current Christchurch Airport Master Plan published in 2017.

9 I have been involved with the updating of the Christchurch International Airport's (*Christchurch Airport*) air noise contours since the project began in 2018.

Code of Conduct

10 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

11 I have been asked to comment on the relief sought by CIAL in relation to the proposed Waimakariri District Plan and Variation 1 and to explain Christchurch Airport's significance for the district. This brief of evidence is based on the evidence of my colleague, Mr Sebastian Hawken, for the proposed Selwyn District Plan[1] which addressed substantially similar matters:

11.1 The importance of airports to the cities and regions they serve as part of the transport network for passengers and cargo.

11.2 How airports serve as a base for other aviation services such as aircraft maintenance, government and military aviation activity, non-scheduled services, rotary wing operations, emergency services, recreation, and tourism.

11.3 That air services are essential to any nation, but particularly for a remote island nation such as New Zealand and for connectivity within the country between the South and North Islands and within regions.

11.4 How airports serve as a base for emergency services to support disaster management and recovery, whether due to extreme weather events, floods, avalanche, landslides, earthquakes or even delivery of medical equipment and vaccinations during pandemics.

11.5 That the connectivity an airport provides is essential to support regional economic activity and associated jobs in

[1] Statement of evidence of Mr Sebastian Hawken filed for the Strategic Directions chapter of the Proposed Selwyn District Plan review, dated 23 July 2021.

many industries as well as on the airport campus and adjacent commercial precincts.

11.6 That careful and deliberate planning is required to provide for safe operation of aircraft, requiring compliance with international and national regulations, rules and practices covering a wide range of aspects.

11.7 That the safeguarding of essential aviation infrastructure does not stop at an airport's boundary. The safety of aircraft navigation and operations in the final stages of descent to the airport runway and on the initial stages of climb on departure from the runway also requires careful planning and protection from incompatible land use and structures which can create hazards.

11.8 That airports provide essential transportation connectivity in the event of disruption of road, rail, and ferry networks in New Zealand.

Summary and Conclusions

12 Airports are essential transportation nodes. Airport resilience is essential for disaster management response and security of the transport network.

13 Suitable sites for major international, domestic, and regional airports are difficult to find and airport operations at existing sites must be protected for the economic and social benefit of the communities they serve.

14 There are specific aspects of airport safeguarding which are reflected in policy and regulation around the world to ensure safety of operations and this includes:

14.1 "improving community amenity by minimising aircraft noise-sensitive developments near airports; and

14.2 improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues."[2]

15 While airport companies such as CIAL cannot generally directly control development in the vicinity of the airport, they often work

[2] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/aviation/aviation-safety/aviation-environmental-issues/national-airports-safeguarding-framework (accessed 13 April 2023)

closely with regulators at various levels to ensure compatible land use.

16 Notwithstanding the recent unprecedented downturn in aviation activity, recovery for domestic and regional activities is already well advanced. We can confidently say it is almost certain that aviation will return to being a long-term growth industry as the commerce and consumers drive increasing demand for aviation services.

17 Christchurch Airport is of significant importance to New Zealand, the South Island, the Canterbury region and the Waimakariri District as an essential transportation hub and base for all types of aviation activity now and in the foreseeable future. Should the safety or efficiency of operations be compromised it is unlikely that a suitable replacement site could be found in proximity to the city of Christchurch. Even if a site were found, development would take many years and come at an extremely high financial and economic cost.

18 Christchurch Airport is of national as well as local significance. Christchurch Airport is also considered of international importance in its proximity to Antarctica and its role facilitating scientific exploration of the continent.

19 Christchurch Airport is a nominated "alternative" to Auckland International Airport, if aircraft bound for Auckland are not able to land there. This may be due to poor weather, an accident blocking the runway or other operational reasons.

AIRPORT CONNECTIVITY

20 Airports are vital components of a modern transport infrastructure network. The airport system includes the runways and taxiways, aircraft parking stands and aprons, terminals, roads and carparks and on-site aviation related industry.

21 Just as important is the associated airspace in the immediate vicinity of the airport which facilitates the safe navigation of aircraft along flight paths, connecting into the wider local, regional, domestic trunk and international airspace network.

22 Airports are key enablers of air connectivity for passengers and freight, and inter-modal connectivity of transfers for passengers, freight and mail, usually between road and air, and sometimes including rail and/or marine transport nodes.

23 It is increasingly important for communities to recognise that their airport is a strategic asset and engage with airport operators to

successfully safeguard airport operations and activities for the short-, medium- and long-term to enhance connectivity and drive regional competitiveness and success.

Passenger Hub

24 Christchurch Airport is a key enabler of business connectivity, through its central location and proximity to the Christchurch Central Business District. It enables quick international and often same day domestic business connections to main domestic and regional ports.

25 Christchurch Airport is also a key enabler of social connectivity, providing critical air links for families, friends and relatives who may be geographically separated.

26 As the gateway to the South Island, Christchurch Airport serves as a regional hub, dispersing international and domestic passengers and freight across the South Island.

27 Prior to the COVID-19 pandemic there were services to ten international destinations: Sydney, Melbourne, Brisbane, Perth, Gold Coast, Singapore, Guangzhou, Hong Kong, Rarotonga, and Nadi, operated by nine international airlines. Scheduled traffic in the financial year 2019 comprised 92,345 domestic and 11,593 international aircraft movements carrying 6.3 million annual passengers and making it the second busiest airport in New Zealand. In 2019 Christchurch Airport had 105,000 Domestic to International transferring passengers and 245,000 domestic-to-domestic transferring passengers, illustrating its key role in regional connectivity for the lower South Island.

28 Ground infrastructure at Christchurch Airport, such as the runways, taxiways and aprons, connect Christchurch, the wider region and the South Island to the rest of New Zealand and the world, allowing air services by new generation aircraft such as the Airbus A350 and Boeing 787, and the world's largest passenger aircraft, the Airbus A380.

29 Christchurch Airport is operationally available 24 hours a day, seven days a week.

Freight Hub

30 Christchurch Airport provides critical air connectivity for the movement of international air freight into and out of the South Island and New Zealand, linking into international freight hubs in Australia, Singapore, China, and the United States.

31 Statistics New Zealand data shows that Christchurch Airport is the second largest airport for airfreight imports and exports in New Zealand (after Auckland), accounting for $2.67 billion New Zealand

dollars' worth of airfreight in the year ending June 2022[3]. In that year total air freight was about 0.3% of trade by volume of total New Zealand trade but about 14% of our exports and 23% of our imports by dollar value[3]. Christchurch Airport plays a key role in this trade.

Antarctic Connectivity

32 Christchurch Airport is New Zealand's gateway to Antarctica, with a well-established International Antarctic Centre. This includes a dedicated Antarctic aircraft apron from which to airlift cargo and its own airport departure terminal for personnel travelling to and from Antarctica during the summer season. It serves as a base for the United States, New Zealand and Italian Antarctic Programs and provides key emergency access to the continent as recently illustrated by an emergency medical evacuation.

Summary

33 Aviation world-wide has a long and sustained history of growth of the order of 4% per annum, often rebounding quickly from shocks. There remains long term potential for sustained increases in air travel for business and leisure with growth in GDP and general increases in the standard of living. The nature and role of Christchurch Airport serving the largest city of the South Island, as an international gateway, domestic and regional hub infers growth in airport activity over the long term.

34 It is critically important to safeguard Christchurch Airport for the short-, medium- and long-term through effective land use planning controls, to ensure its essential role connecting Christchurch, Canterbury, the South Island and New Zealand can be maintained and enhanced.

AIRPORT RESILIENCE

35 Airports are critical links in disaster response and recovery, providing critical staging areas for disaster management, enabling fast medical evacuations and transport and providing important resilience to the overall transport network when roads, rail and maritime transport are compromised.

36 Christchurch Airport is a designated 'Lifeline Utility' in the New Zealand Civil Defence Emergency Management Act 2016. Section 60 of that Act notes that Lifeline Utilities must:

"… ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency and

[3] Airbiz summary of Statistics New Zealand Infoshare data portal (https://infoshare.stats.govt.nz/)

participate in the development of the national civil defence emergency management strategy and civil defence emergency management plans."

37 Hence Christchurch Airport plays a key role in local, regional and national disaster management. This places a range of requirements on Christchurch Airport and confirms its importance as a key asset for Canterbury and the wider South Island following any large-scale incident.

38 Examples of the important role that Christchurch Airport has played in recent disasters include:

38.1 2011 Christchurch Earthquakes – Christchurch Airport was the main arrival and departure point for a wide range of local and international rescue teams. Emergency supplies were airlifted into Christchurch and many of the critically injured were evacuated out. Christchurch Airport was credited with contributing to helping save dozens of lives due to the ability to reopen the facility so quickly and keep it open 24/7. In the seven days following the initial earthquake, more than 45,000 passengers were moved out of Christchurch utilising a 'shuttle service' to Auckland.

38.2 2016 Kaikōura Earthquake – Due to Kaikōura being essentially cut off from all other towns by road and rail, air transport into and out of Kaikoura was vital. Christchurch Airport was the initial staging point for military and private air response. Large aircraft with supplies would arrive into Christchurch and be helicoptered out to Kaikōura. Those evacuated from Kaikōura would often be airlifted back to Christchurch.

38.3 2017 Port Hills Fires – Christchurch Airport quickly became the staging point for all fixed wing and many helicopter aerial assault aircraft fighting the Port Hills fires. Christchurch Airport hosted on site the various aircraft and crews, making sure they had water available to refill aircraft as well as resting facilities for crews. In addition to this, over a period of 10 days, Christchurch Airport provided over 20 skilled staff to assist in the Emergency Operations Centre in Rolleston supporting the response effort.

38.4 2019 Rangitata Floods – This affected many international tourists and there were many general aviation fixed wing and helicopter operators ferrying passengers between Timaru and Christchurch to enable them to continue their journey or catch international flights which would otherwise have not occurred due to road and rail outages.

38.5 2020 COVID-19 Repatriation Evacuations – In April and May 2020, thousands of stranded tourists visiting the South Island were evacuated to their home countries through Christchurch Airport. Visitors from Germany, the Netherlands, the UK, France and a range of other European countries all boarded repatriation flights at Christchurch Airport in a desperate attempt to get home as international borders shut. At the same time, hundreds of Kiwis were repatriated back to NZ on charter flights due to the disruption to commercial flights and border restriction.

38.6 2023 Auckland Floods – On the nights of 27 January and 14 February 2023, Auckland Airport suffered two separate extreme weather events that caused either partial or full closure of their operations. Across these two nights, over 20 wide and narrow body aircraft were forced to divert to Christchurch Airport resulting in over 2,000 displaced passengers being accommodated at short notice. Many of these passengers slept and were catered for within Christchurch Airport's terminal facility for up to three days due to a lack of local accommodation before being able to return to Auckland.

New Zealand and the Pacific

39 Outside of Christchurch there are numerous examples of airports providing vital resilience in disaster management and recovery roles during natural disaster across New Zealand and the Pacific, such as:

39.1 In the Whakaari / White Island Disaster in December 2019 Whakatane Airport provided a key staging ground for rescue operations to and from Whakaari / White Island.

39.2 Kaikōura Airport provided a key staging ground and evacuation point for disaster recovery during the 2016 Kaikōura Earthquake. This extended for two months following the earthquake until road access could be restored.

39.3 There are numerous examples around the Pacific of airports being used for disaster recovery following natural disasters, such as Port Vila Airport in the aftermath of Cyclone Pam in 2015 and Fua'amotu International Airport in Tonga after the 2022 Hunga Tonga-Hunga Ha'apai volcanic eruption and tsunami.

39.4 New Zealand Defence Force aircraft were deployed from Whenuapai air base in Auckland to assess damage from the Hunga Tonga-Hunga Ha'apai volcanic eruption and tsunami in January 2022.

39.5 The airports within the regions most effected by 2023's Cyclone Gabrielle, such as Hawke's Bay (Napier) and Gisborne airports, were key transport and logistics hubs which continued operating when roads and bridges were unavailable. Air New Zealand operated a temporary air service between those two airports while road links were being restored.

AIRPORT SAFEGUARDING

Safeguarding

40 Airport safeguarding has been adopted internationally as a term encompassing the measures that supports the safe and efficient operation of aircraft, while taking-off or landing, or flying in the vicinity of an airport. In particular, it refers to land use planning controls implemented in the vicinity of an airport by national or local territorial authorities.

41 It is recognised locally and internationally that airport operators have the primary interest and expertise in identifying and mitigating potential hazards to aircraft operations in the vicinity of an airport, but it is other parties (government agencies and local government) that actually develop and implement planning policy, regulations and procedures.

42 Urban development encroachment into areas necessary for airport safeguarding is a "lose-lose" situation (for the airport and community it serves) and is virtually irreversible. A consistent conservative long-term approach is justified and best practice.

43 The main safeguarding topics relevant to the Waimakariri District and its specific location and proximity to Christchurch Airport are bird strike and noise. For the purposes of this hearing, I provide an overview of appropriate land use planning techniques relevant to aircraft noise. Safeguarding techniques in relation to bird strike will also be addressed at a later hearing.

Aircraft Noise

44 Appropriate land use planning is well recognised as the most effective means of mitigation of the impacts of aircraft noise in the vicinity of an airport. Although this obviously has the potential to place restrictions on land use, it does not rule out land development per se, just that it should be compatible. In the areas with highest noise exposure land should remain rural or be developed for industrial uses rather than residential or other sensitive uses such as schools.

45 Where possible future urban growth should be directed away from these areas, and they should be zoned rural or industrial. If possible, future urban densification in zones identified as affected by

aircraft noise on these arrival and departure flight paths from the airport should also be avoided. This will minimize noise nuisance to people on the ground and the "reverse sensitivity" effects of affected populations lobbying to restrict operations at the airport both now and in the future.

46 Christchurch Airport, through sound land use planning, is currently in a position where the urban encroachment within areas affected by aircraft noise and those projected to fall in such areas in the future are relatively limited. Compared with the other primary New Zealand airports of Auckland and Wellington, there is very little conflicting land-use. The number of people within current and projected noise impacted areas in Christchurch is low when compared to these and other similar airports overseas.

47 To ensure that the Christchurch Airport's primary purpose as an important economic and community asset and that the amenity of the residents of Christchurch, Selwyn and Waimakariri is preserved, it is vital that long-term land use planning does not compromise Christchurch Airport or the community. Any loosening or gap in airport safeguarding through deficiencies in land-use controls will be irreversible. It will result in either, populations living in areas affected by noise from aircraft operations and consequently reduced quality of life, or pressure for and potential restrictions on airport operations and consequently economic opportunities.

48 Most of the world's major airports and many significant airports in this region (Australasia) suffer from the lack of adequate reservation of surrounding land and appropriate land use planning. This results in constraints on development, operational flexibility, capacity and in some cases significant environmental problems.

49 Ensuring that the Waimakariri District Plan provides appropriate controls on land use in the areas affected by Christchurch Airport's aircraft noise achieves the complementary goals of:

49.1 Protecting residents from the negative noise impacts of airport aircraft operations; and

49.2 Protecting Christchurch Airport as a community transport and economic asset from noise complaints and pressures to restrict aircraft operations.

50 CIAL subscribes to the following international and national policies and regulatory frameworks:

50.1 International Civil Aviation Organisation proposed *Balanced Approach to Aircraft Noise Management* which promotes finding practical solutions to aircraft noise related issues, including recommended land use compatibility.

50.2 New Zealand Standard NZS6805 with the objective to *"ensure communities living close to the airport are properly protected from the effects of aircraft noise whilst recognizing the need to be able to operate an airport efficiently."*

51 Consistent with these standards, Christchurch Airport's Air Noise Contours (the *contours*) are implemented in local district and municipal planning rules. The purpose of noise contours is to provide:

51.1 The community a reasonable degree of reliability of where flight activity and noise effects will occur in the near- and long-term futures; and

51.2 Territorial authorities with guidance as to where land use controls should be imposed to protect the airport from future reverse sensitivity effects, and thereby protect the community from finding in future that noise sensitive activities have been allowed to develop in areas where noise will occur in the future.

52 The contours are a key safeguarding tool for Christchurch Airport and are an appropriate tool to base land use planning provisions.

FUTURE OF AVIATION

53 Aviation has historically been a long-term growth industry. However, events over the last three years have created some uncertainty in the short to medium term. The global COVID-19 pandemic has had significant consequences for the aviation industry. On one hand international passenger travel basically ceased, but the importance of air freight, including shipments of vaccines has never been more evident.

54 Domestic aviation in New Zealand rebounded as domestic travel restrictions were lifted to be at times close to or even in advance of pre-pandemic levels in some areas. International aviation has restarted and is recovering.

55 There are also clear actions being undertaken to ensure a future for aviation as the world decarbonises and responds to climate change. Globally and locally, there is a tangible drive to transition aviation towards the goals of a net zero carbon environment. For example, Greg Foran, the CEO of Air New Zealand stated in July 2021: *"… it was possible the national carrier could be flying an electric aircraft commercially within three years."*

56 In December 2021 Air New Zealand released a call for long-term collaboration with aircraft manufacturers to develop more efficient aircraft design and 'radical' new propulsion concepts. Their Zero

Emissions Aircraft Product Requirements Document expressed their intent to share data, contribute turboprop aircraft for retrofitting, and support funding to lead to the deployment of zero emissions aircraft in a five-year time period.

57 By early 2023, Air New Zealand had announced nine partners for their zero emissions journey including; Eviation, Beta, VoltAero, Cranfield, Universal Hydrogen, Embraer, Heart Aerospace, Airbus and ATR. Recognised as 'world-leading innovators' by Air New Zealand, these partners will work together on electric, hybrid and green hydrogen aircraft to fulfil and accelerate the goals of Air New Zealand's Mission Next Gen Aircraft.

58 The two Next Gen goals are:

58.1 Fly the first commercial demonstrator flight from 2026, and

58.2 Begin replacing the Air New Zealand Q300 domestic fleet with a more sustainable aircraft – potentially green hydrogen or battery hybrid systems from 2030.

59 In addition to aircraft partnerships, Air New Zealand has announced two local partners:

59.1 Hiringa Energy, a hydrogen company that produces both green hydrogen and associated infrastructure; and

59.2 Victoria University of Wellington's Robinson Research Institute to study aircraft propulsion systems.

60 This collaboration highlights Air New Zealand's intent to explore hydrogen as a locally available and dependable, low emissions fuel.

61 Another critical tool to decarbonise the aviation industry is the use of Sustainable Aviation Fuels (*SAFs*). SAFs were first certified for use in civil aviation in 2009. More than 450,000 scheduled civilian flights worldwide have operated where a percentage of SAFs have been blended into the fuel and over 50 airlines are using SAF. SAFs produce typically up to 80% lower CO_2 emissions on a lifecycle basis than conventional (fossil) jet fuel.

62 All SAF types considered today are drop-in fuels, i.e., they have very similar physical and chemical properties to conventional jet fuel and can be blended with it over a wide percentage range. SAFs are already incorporated into today's jet fuel and can be used by aircraft engines without any major upgrade to fuel lines. Multiple SAFs are already certified for blending rates up to 50% of biofuels.

63 SAFs volumes remain residual with less than 0.05% of total European Union aviation fuel use. This is primarily due to the higher cost of SAFs in comparison with conventional jet fuel.

64 Multiple countries are introducing blending mandates for the aviation sector. For instance, the European Commission has proposed a SAF blending mandate for fuel supplied to EU airports, with minimum shares of SAF gradually increasing from 2% in 2025 to 63%.

65 Sustainable Aviation Fuel Alliance of Australia and New Zealand (*SAFAANZ*) was recently established by Bioenergy Australia to provide a collaborative forum, a "think-tank" to advance sustainable aviation fuel production, policy, education and marketing in Australia and New Zealand. Members of SAFAANZ include Air New Zealand, the Bioenergy Association of New Zealand, and Scion Research NZ along with Qantas, Virgin Australia, and others.

66 SAFs could become a viable solution for all aviation markets as they do not rely on any significant technological breakthrough and could be used with the existing aircraft, engines, and airport infrastructure.

67 The main challenges for SAFs are economic with the current price difference between SAF versus Jet A-1 being three to four times more expensive per unit along with access to secure sufficient quantities of feedstocks that do not conflict with food production and supply or the availability of land and infrastructure to grow, extract and produce the fuel types.

68 It is my opinion, aligned with many of the aviation industry leaders, that while the exact pathway and timeframe for the aviation industry to recovery from the pandemic is not yet clear, in the longer term, enabled by technological advances, it will return to pre-pandemic levels of activity and demand will then continue to build. The industry seems committed to a "sustainable recovery", and the various industry players are moving beyond strategy into setting defined goals and pathways to meet them.

CONCLUSION

69 Christchurch Airport is of significant importance to New Zealand, the South Island, the Canterbury region and the Waimakariri District as an essential transportation hub and base for all types of aviation activity now and in the foreseeable future. Should the safety or efficiency of operations be compromised it is unlikely that a suitable replacement site could be found in proximity to the city of Christchurch. Even if a site were found, development would take many years and come at an extremely high financial and economic cost.

70 Aviation has been recovering from the disruption caused by the COVID-19 pandemic and is expected to resume the long term activity trajectory of activity increasing over time. The industry is taking seriously the challenge of climate change and is actively working on reducing the greenhouse gas emissions of aircraft though improving the efficiency of existing technology and the development of new technologies.

71 The safeguarding of essential aviation infrastructure from the effects of reverse sensitivity must take a conservative approach. Incompatible land uses in the vicinity of airports should be strongly discouraged. This is most critical under the immediate arrival and departure flight paths when aircraft are at lower altitudes approach the runway or taking-off from the runway but extends into areas that adjoin these. Planning for short-term expediency creates facts on the ground that are very difficult, expensive, and usually impossible to reverse. This is to the detriment of the community and wider region that Christchurch Airport serves.

72 CIAL is following New Zealand standards and industry practice in the aircraft noise remodelling process. Aircraft noise contours are one of the most significant tools for guiding land use to:

72.1 Protect residents from the negative noise impacts of airport aircraft operations; and

72.2 Protect Christchurch Airport as a community transport and economic asset from noise complaints and pressures to restrict aircraft operations.

Dated: 1 May 2023

Geoffrey Page