

Before the Independent Commissioner Hearing Panel

Under

The Resource Management Act 1991 (**RMA**)

In the matter of

An application by **Dunedin City Council** to
develop a landfill at Smooth Hill, Dunedin

**Statement of Evidence of Matthew William Bonis for Dunedin International Airport
Limited**

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STATEMENT OF EVIDENCE OF MATTHEW WILLIAM BONIS

INTRODUCTION

Qualifications and Experience

- 1 My full name is Matthew William Bonis.
- 2 I hold a Bachelor of Regional Planning degree and have been employed in the practise of Planning and Resource Management for 23years. I am a full member of the New Zealand Planning Institute.
- 3 I am an Associate at Planz Consultants in Christchurch. I have held this position since 2009.
- 4 I am familiar with the submission made by Dunedin International Airport Ltd (DIAL) and the planning issues identified in the that submission. I have been authorised by DIAL to provide evidence on its behalf.
- 5 The economic and social importance of Dunedin Airport to the Region and City is established within the statutory framework, and its economic importance to the region is set out in the Company Evidence of Mr Roberts.
- 6 I am familiar with the surrounding environment of the Smooth Hill site, although have not been onto the site. I am familiar with the operations and environment of Dunedin International Airport (DIA).
- 7 My experience with relevant resource management matters is set out in **Attachment A**.

Code of Conduct

- 8 I have reviewed the code of conduct for expert witnesses contained in part 7 of the Environment Court Practice Note 2014. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

- 9 I have been asked to prepare planning evidence as narrowed to the issue of birdstrike risk from the proposed Smooth Hill Class 1 Landfill (Smooth Hill Landfill) as located within 4.5km of the runway extent of DIA. My evidence draws on the resource management statutory framework, and National Guidance as to the placement of bird attractant activities proximate to commercial airports.
- 10 I am not an expert in aircraft / wildlife collision risk and mitigation, and therefore I am reliant on the evidence of Mr Phillip Shaw on behalf of the applicant on that matter. I do have some familiarity with the issue as I am Christchurch International Airport Limited's planning advisor on

the same issues, and in that role having worked extensively with Mr Shaw as Christchurch International Airport's bird aviation hazard expert. I draw on that experience in this evidence.

- 11 My evidence, as focused on the narrowed issue of Birdstrike risk and the DIA as nationally and regionally significant infrastructure¹, includes:
 - 11.1 An overview summary, including the agreed position as to the Proposal and consent status.
 - 11.2 Birdstrike and relevant guidance, including Civil Aviation Authority (CAA) guidance as to avoidance of landfills within 13km of commercial aerodromes.
 - 11.3 A consideration of the environmental effects of the proposal in terms of s104(1)(a), including Conditions;
 - 11.4 An evaluation against the respective provisions of the relevant planning documents under s104(1)(b);
 - 11.5 A consideration of alternatives under s104(1)(c), s105(1)(c) and s88– Schedule 4(6)(1)(a).
 - 11.6 Conclusion.

- 12 In preparing my evidence, I have reviewed and relied on the following:
 - (a) Company Evidence – Richard Roberts, Chief Executive – Dunedin Airport;
 - (b) Evidence in Chief – Daniel Debono, General Manager Operations Dunedin Airport.
 - (c) Evidence in Chief – Ciaran Keogh, Planning and Contaminated Land.
 - (d) Evidence in Chief – Sean Rogers, on behalf of the Civil Aviation Authority.
 - (e) Evidence in Chief – Phil Shaw - Avisure, on behalf of the applicant.

- 13 I have also reviewed the following:
 - (a) The application;
 - (b) The Dunedin City Council (**DCC**) s42A Planning Report of Kirsten Lindsay.
 - (c) The Otago Regional Council (**ORC**) s42A Planning Report of Hilary Lennox.
 - (d) The applicant's evidence, including:
 - (i) Maurice Dale – Planning;
 - (ii) Greg Akehurst – Economics; and
 - (iii) Christopher Henderson – Group Manager Waste and Environmental Solutions Group, Dunedin City Council.

- 14 For completeness, I have discussed the proposal and management approach associated with Birdstrike with Mr Shaw and Mr Dale, including on 23 March 2022. I have participated in extensive discussions between DIA and the Dunedin City Council's advisors in seeking to resolve DIAL's concerns. Unfortunately, that has not been completely successful, though considerable progress was made.

¹ Partially Operative Otago Regional Policy Statement/ Policy 4.3.2

Executive Summary

- 15 The Dunedin International Airport is to be recognised as '*nationally and regionally significant infrastructure*' as defined by the Partially Operative Otago Regional Policy Statement (**PORPS**)².
- 16 Associated statutory provisions seek that such infrastructure is to '*be protected*', and that effects on such infrastructure, where these would result in '*significant adverse effects*' on functional needs are to be '*avoided*', with all other effects to be '*avoided, remedied or mitigated*'³.
- 17 Dunedin Airport is also defined as Nationally Significant Infrastructure under the Proposed Otago Regional Policy Statement 2021(**PRPS**).
- 18 Associated provisions⁴ seek to 'avoid the establishment of activities.... where they may compromise the functional or operational needs of nationally or regionally significant infrastructure'.
- 19 Neither landfills nor municipal waste facilities are identified in either the PORPS or PRPS as nationally or regionally significant infrastructure.
- 20 There is considerable national and international guidance as to precluding the establishment and operational of landfills within 13km of airports, including The International Civil Aviation Organisation (ICAO) Guidelines and NZ CAA in Advisory Circular AC139-16 (2011). The reasons for this guidance, as set out by Mr Rogers is to reduce the incidence and risk of bird strike with aircraft.
- 21 Birdstrike at Dunedin International Airport from operations associated with Smooth Hill land fill could be potentially catastrophic – such warrants consideration in terms of s3(f) of the Act and would have a marked effect on airport operations. Section 3(f) states:
- 'any potential effect of low probability which has a high potential impact'*.
- 22 Adverse effects associated with birdstrike however need not be significant to be of a material consideration in terms of reducing the functional needs of Dunedin Airport. Costs⁵ can also include direct costs, such as aircraft damage; indirect costs such as rescheduling flights; and ancillary costs such as closures, investigations and safety audits.
- 23 On this basis, and under the statutory framework, it is therefore considered that the starting position is that the Smooth Hill facility, as located within 4.5km of the runway at Dunedin Airport is not appropriate in this context. A *significant effect* as represented by either a collision resulting in a downed plane, or a combination of the costs identified above leading to the CAA seeking that DIAL reduce aviation activities⁶ would be directly contrary to **Policy 4.3.5** of the PORPS which is directive in its language to 'avoid' such effects. Mitigation of risk is not what the policy framework contemplates. Avoidance is required.

² Policy 4.3.2

³ Policy 4.3.5

⁴ Policy EIT-INF-P15 'Protecting Nationally or Regionally Significant Infrastructure

⁵ CAA Advisory Circular AC139-16 'Overview of Bird Hazard Management Programme' [pg 5]

⁶ EIC Rogers [27]

- 24 As set out in the evidence of Mr Dale, the applicant is 'live' to these concerns and has identified an adaptive management approach and suite of conditions⁷ that would seek to reduce risk – however, there remains uncertainty as to what is represented by an acceptable level of risk. I am unable to find any quantifiable statement as to a threshold of acceptable risk in this context.
- 25 There has been substantial effort put into the suite of recommended conditions put forward by Mr Dale and Mr Shaw, including responding to matters I have raised through consultation prior to evidence. I understand from the evidence of Mr Roberts, that from DIAL's perspective, the only acceptable outcome is avoidance of any increase in aviation hazard from birds.
- 26 I retain residual concerns as to the extent of human risk associated with management approaches, unintended consequences associated with separation (or otherwise of putrescible wastes), and residual risk associated with the acceptance of 'highly odorous wastes'⁸.
- 27 I consider that the better approach would be to locate such a facility outside of the 13km buffer set by NZCAA (2008) Guidance for Land Use at or Near Airports: Wildlife Management.
- 28 However as subject to drafting amendments, greater certainty as to the extent of putrescible waste, avoidance of acceptance of 'highly odorous wastes', and a recommended s128 Condition, and based on the expert evidence of Mr Shaw, I accept his views that residual risk could be managed to the extent that there is no increase in bird hazard compared to the status quo. However, I am not yet of the view that that threshold has been reached. Part of the reason for that is there seems to be some misalignment between Mr Shaw's operational assumptions and the drafting of the conditions attached to Mr Dale's evidence.

OVERVIEW

Proposal and Waste Stream Management

- 29 The proposal is described in the application, Section 3 of the ORC notification report and within the EiC of Mr Dale⁹.
- 30 A synopsis is - that as a consequence of the Dunedin City Council Green Island landfill approaching full capacity, a replacement landfill (and associated kerbside collection and waste stream management process) is proposed.
- 31 The replacement landfill, to be located at Smooth Hill is predicated on a capacity of 2.94million cubic metres of waste, with an expected operational life of 40 years. Network infrastructure modifications to accommodate the landfill include upgrades to McLaren Gulley Road (including intersection with SH1) and Big Stone Road leading to access to the site.
- 32 Post application, a number of amendments have been made, including in response to the NES-FW Regulations (2020) which have reduced the landfill footprint to 18.6ha (from 44.5ha) and changes to McLaren Gully Road so as to avoid 'natural wetlands'.
- 33 In terms of waste stream management, it is understood that the landfill remains deemed a Class 1 Landfill (as putrescible waste will still enter the waste stream¹⁰). The facility will receive waste

⁷ EiC Dale [92]

⁸ EiC Dale [Condition #43(f)].

⁹ EiC Dale [22-33]

¹⁰ EiC Dale [Condition 75, Attachment 3]

only from commercial waste companies, the Council¹¹, or bulk loads as controlled by conditions of consent.

- 34 With regard to putrescible waste, it is understood that the waste stream intent is that putrescible waste will make up less than 10% of waste going to Smooth Hill at inception; reducing to 5% over time¹².
- 35 The drafted conditions provide for 'highly odorous wastes' to still be disposed at the site¹³, which creates residual issues in terms of birdstrike risk. No volumetric or proportion limit on that kind of waste is proposed.
- 36 It is understood from the evidence of Mr Henderson that the four bin + one kerbside collection service (due to be commenced in 2023) will provide for the removal of both food and garden waste, separated from collections of general waste. Those waste streams will go an Organics Processing Facility (OPF), thereby decreasing the extent of putrescible waste to be transferred and disposed of at Smooth Hill.
- 37 In addition, under the proposed management regime for all residual general waste is to be deposited on the tipping floor of the Bulk Waste Transfer Station (BWTS) which also will not be located at Smooth Hill¹⁴. Residual contaminated (and putrescible waste) is to be separated and diverted to the Organics Processing Facility (OPF) offsite 'where possible'¹⁵. However, the 'Special Disposal Procedure' for contaminated wastes in Appendix 3 of Mr Dale's evidence to the discharge to land consent says (my underlining added):

Special Disposal Procedure for contaminated wastes

1. *Quarantined waste from the BWTS, OPF and MRF will be transported to the Smooth Hill landfill in sealed truck and trailer units or bins.*
2. *Deliveries of quarantined waste will be pre-booked, to ensure preparations are made including ensuring cover material is available at the tipface disposal location.*
3. *Deliveries of quarantined wastes will be covered immediately and prioritised for disposal ahead of more general waste and loads.*

- 38 It is therefore my understanding that the intention is to bring contaminated putrescible waste to Smooth Hill, under the special disposal procedure.

Statutory Framework and consent status

- 39 It is understood that the Smooth Hill site was designated in the Dunedin City Plan (2004), and that that designation was rolled over in the 2GP¹⁶. Conditions affixed to the Designation are narrowed to a lapsing date (2058), requirement for a landscape plan and management of noise. It is understood that an Outline Plan of works will be submitted to Dunedin Council subsequent

¹¹ EIC Dale [Condition 73, 92]

¹² EIC Dale [Attachment 3]

¹³ EIC Dale [Condition 43(f)]

¹⁴ EIC Henderson [34]

¹⁵ EIC Dale [Appendix 3, Residual Putrescible Waste Separation Methodology]

¹⁶ Designation D659 Proposed Smooth Hill Landfill. Proposed 2GP Dunedin City Council.

to this process¹⁷. Resource consent applications as a discretionary activity as associated with road upgrades and earthworks only are considered in the s42A Report by Ms Lindsay.

- 40 Mr Henderson outlines the analysis of criteria in site selection¹⁸. In addition, I note that when the Council considered 'rolling over' the designation into the 2GP the Technical Guidelines for Disposal to Land (first published in April 2016, before republished in 2018) would also be of relevance. The 2018 guidelines provide a national agreed guidance framework for the establishment and management of Landfills. Section 4.4 'Landfill Siting Criteria – Compatibility with Surrounding Land uses¹⁹' states that:

An assessment of the suitability of a site for landfill, and the extent of available buffer (with respect to reducing the potential for adverse effects on surrounding land use) should consider:

- *Airport Safety (Footnote 2 - The CAA 'Guidance Material for land use at or near airports' (2008) notes that the International Civil Aviation Organisation (ICAO) Bird Control and Reduction Manual recommends that [municipal solid waste landfill] sites be located no closer than 13 kilometres from the airport property.*

- 41 I am unable to find any evidence showing that, when the designation was first introduced to the District Plan, or rolled over to the 2GP, that aviation hazard issues were either known or considered by DCC as the planning authority. That would be consistent with Mr Roberts' evidence that DIA was never consulted or notified.

- 42 There is agreement with Mr Dale and Ms Lindsay²⁰, as to application of the following statutory framework as applied to consents sought from the Otago Regional Council (**ORC**):

42.1 National Environmental Standards Freshwater Regulations (NES-FW) (2020).

42.2 Regional Plan: Waste for Otago. The Waste Plan is subject to Plan Change 1.

42.3 Regional Plan: Water for Otago.

- 43 It is therefore understood that there is agreement that the status of the consents applied for from ORC remain **Discretionary**, to be considered under s104 and s104B of the RMA. This is despite the NES-FW generally prescribing a non-complying activity categorisation for a range of activities, as the application was lodged prior to the regulations coming into force on 3 September 2020. The application of s88A of the RMA which retains the activity status associated with the application when lodged.

BIRD STRIKE AND RELEVANT GUIDANCE

The issue

- 44 Bird strike risk is a key threat to the safe and functional operation of Dunedin International Airport.

¹⁷ EiC Dale [42]

¹⁸ EiC Henderson [38]

¹⁹ WasteMINZ – Technical Guidelines for Disposal to Land – Waste Management Institute of New Zealand (August 2018) [page 57].

²⁰ s42A [Section 5]

- 45 The provision of new suitable new habitat [**site risk**] (be it for roosting, foraging or nesting) can increase the potential for bird strike due to increased movement across the landscape [**flight path risk**] and / or by increasing the populations of risk species through the ability of the additional habitat to support increasing numbers [**spill over risk**]. Either scenario can increase the number of birds that are in the shared airspace with aircraft, either through increased movements or increased populations. Landfills (especially Class 1 Landfills) are explicitly recognised in guidance as being a substantial risk activity.
- 46 DIAL has a responsibility to provide a safe operating airport environment and therefore actively work to minimise the threat and incidence of bird strike around the Airport. Accordingly, bird strike that occurs, such as a consequence of the Smooth Hill Land fill (**the land fill**) attracting risk bird species, will affect the ability of DIAL to provide this safe environment.
- 47 The evidence of Mr Debono sets out the regulatory environment associated with the Part 139 Certificate to operate held by Dunedin Airport, as inclusive of the steps needed to manage wildlife hazard risk²¹.
- 48 The evidence of Mr Rogers is that the Civil Aviation Authority (CAA) has no statutory ability to limit or foreclose operations at the Land fill. If there was an undue safety risk to the travelling public, the CAA can only direct the aerodrome operator (DIAL) to limit or reduce its aviation activities, including limiting aircraft movements²².
- 49 I understand that Civil Aviation Rule Part 139 requires certificated aerodrome operators to have a wildlife hazard management programme (**WHMP**). The CAA monitors compliance with CAA Rule 139.71 as part of their schedule annual audits of the Airport.
- 50 A significant component of any such programme is a bird hazard management programme to address the control of bird hazards at and near an aerodrome. The Civil Aviation Authority advises that an effective programme usually takes a holistic and integrated approach, incorporating a variety of measures to gain maximum benefit. I understand that this is what DIAL does.
- 51 The starting proposition is that birdstrike is a present and real risk for aircraft using Dunedin International Airport. There is also agreement with Mr Shaw that despite a low reported incident rate (5 bird strikes per 10,000 aircraft movements²³):
- “... the strike risk was high. The implication in risk management terms for the proposed Smooth Hill Landfill is that it should not increase DIAL’s strike risk any further”²⁴.*
- 52 There is also agreement that *‘without mitigation the Smooth Hill Landfill ... present(s) an unacceptable risk to aviation’²⁵*. Although rather than mitigation, the appropriate strategic goal is risk reduction.
- 53 I understand that strike risk is dependent on the probability of aircraft collision with birds, and the consequence to the aircraft where collision occurs. Probability of strike increases where the number of birds and aircraft operating in the same airspace increases.

²¹ EiC Debono [15]

²² EiC Rogers [27]

²³ EiC Rogers [24]

²⁴ EiC Shaw [42]

²⁵ EiC Shaw [62], Preliminary Bird Hazard Assessment. Final Boffa Miskell (May 2021) – Summary.

- 54 Consequently, the likelihood of strike increases below 5,000ft, as associated with bird density. Operations at low altitudes (including landing and take offs) over known bird attractant hazards or birds in flight (between attractants) significantly increase strike risk. Accordingly, as shown in Figure 1 in the evidence of Mr Debono, there is substantial proportion of flights approaching and take-off below 5,000ft traversing directly over the Smooth Hill landfill site, which has an elevation of 460ft.
- 55 ICA Doc 9137 Airport Service Manual Part 3 Wildlife Hazard Management 5th Edition²⁶, identifies that guidance to restricting activities attractant to wildlife within 13km of aerodromes is predicated on '*a statistic that 95% of bird strikes occur below 2,000ft from the runway, and that an aircraft on a normal approach would descend into this zone at approximately 13km from the runway*'.
- 56 Airports can only proactively manage bird attractants within its boundaries. Best management approaches seek to extend to appropriate distances beyond the airport itself to reduce risk where possible.
- 57 I understand that a robust model on which a site specific risk assessment for Dunedin Airport as associated with the Smooth Hill Landfill proposal to be determined would require several years of standardised surveys and observational data supported by remote sensing that are tailored to the Airport's departure and approach paths (DAPs).
- 58 The Preliminary Bird Hazard Assessment – Final (May 2021)²⁷ as attached to the evidence of Mr Shaw²⁸, does not appear to be at that level. It identifies that Black Back Gulls (BBGs) which are a bird strike risk species, number some 6000 within the district, with some 3000 located at the operating Green Island Landfill²⁹. The Assessment identifies that BBG present the greatest aviation risk presented by the landfill proposal³⁰.
- 59 It is understood that BBG, with adult weights of some 1kg, fly individually or in flocks, often at heights of between 50 – 1200 feet. BBG undertake daily, long distance movements across the landscape searching feeding sites. BBG are opportunistic feeders and exhibit scavenging behaviour would suggest that they are capable of sourcing food from many different habitats, potentially flying long distances to find food.
- 60 Both the Preliminary Bird Hazard Assessment and the Evidence of Mr Shaw identifies that the closure of the Green Island facility is likely to scatter BBG populations across the landscape with a heightened risk to aviation at that time, with the risk needing to be managed³¹.
- 61 The Preliminary Bird Hazard Assessment identifies that '*it is reasonable to estimate Dunedin Airport's strike risk to be significant. the implication for the Smooth Hill Landfill project is that from a risk management perspective, the project should not elevate the strike risk*'³².
- 62 The Assessment identifies a number of limitations, which account for the statement that the report is only 'Preliminary'³³, albeit that there are now further details as to the management of

²⁶ EiC Rogers. Exhibit A.

²⁷ Boffa Miskell

²⁸ EiC Shaw [Appendix 5]

²⁹ EiC Shaw [Appendix 5. Table 2. Section 3.2.4]

³⁰ EiC Shaw [Appendix 5. Section 5]

³¹ EiC Shaw [Appendix 5. Section 5]

³² EiC Shaw [73] and [Appendix 5. Section 4.1]

³³ EiC Shaw [Appendix 5. Section 2.5, Section 5]

the waste stream to ensure that no more than 10% of putrescible waste received will not be exceeded initially, reducing to 5% over time³⁴. That report concludes by stating:

*“As a result of these limitations, there is some uncertainty around the risk outcome from the project and a precautionary approach has been recommended. As further information becomes available, **the assessment should be updated**”.*

63 I understand, as set out in NZ CAA Advisory Circular 139-16, that other costs associated with Birdstrike include:

63.1 Direct costs – as proportional to the extent of damage of the aircraft as a result of the strike.

63.2 Indirect costs – including fuel dumping, accommodating and compensating stranded pax, replacing and rescheduling flights, downtime, delays, and good will.

63.3 Ancillary costs – including closures, emergency response, clean ups and delays, investigations and safety audits.

64 As a direct cost consequence of a bird strike at Dunedin International Airport could be potentially catastrophic – despite the probability of such being low, such warrants consideration in terms of s3(f) of the Act and would have a marked effect on airport operations. Section 3(f) states:

‘any potential effect of low probability which has a high potential impact’.

65 Even in the absence of a catastrophic event, an accumulation of the costs identified above, could lead to the CAA using its only lever under the Civil Aviation Authority Act in imposing restraints on the Aerodrome Operator Certificate Holder (being DIAL). Such an outcome represents a ‘significant adverse effect’ on the functional needs of DIA as nationally or regionally significant infrastructure. That outcome would be as contrary to **Policy 4.3.3** and **Policy 4.3.5** of the Partially Operative Regional Policy Statement.

Relevant Guidance

66 Guidance as to Airports seeking a proactive off-airport management regime to bird strike risk associated with aerodromes is provided by the following documents.

66.1 The **NZ CAA in Advisory Circular AC139-16 (2011)** provides guidance on this issue to aerodrome operators. The purpose of the Advisory Circulars are to ‘*contain information about standards, practices, and procedures that the Director has found to be an acceptable means of compliance with the associated rule*³⁵.

The purpose of AC139.16 is to describe ‘*an acceptable means of compliance with Civil Aviation Rule Part 139.71, Wildlife Hazard Management, in relation to the control of bird hazards at aerodromes*’.

³⁴ EiC Dale [Attachment 3]. There is in fact no condition or limit to ensure delivery of putrescible waste does not exceed 10%, or even 5%. But I understand that to be the intention.

³⁵ [Advisory Circular AC139-16 Wildlife Hazard Management At Aerodromes - Revision 0 - 07 October 2011 \(aviation.govt.nz\)](https://aviation.govt.nz/advisory-circular/139-16-wildlife-hazard-management-at-aerodromes-revision-0-07-october-2011)

The Section titled 'Planning Land Use Near Aerodromes'³⁶ states:

"Although you can control the land use practices on your land to reduce the aerodrome's attractiveness to birds; bird-attractive land use activities outside the aerodrome's boundary and beyond your sphere of influence can counter your activities.

Particularly severe problems arise when birds make regular flights across an aerodrome (e.g., when they fly between roosts and feeding areas).

*The **greatest problem at many aerodromes is the presence of one or more waste disposal sites near the aerodrome.** These facilities provide food for many birds, mainly gulls, which may then use adjacent aerodromes as loafing and resting sites.*

*Therefore, **it is crucial aerodrome operators make submissions** during urban planning or district scheme reviews and work with local authorities to ensure bylaws are established, so municipal authorities know that such activities influence bird populations, which can be hazardous to air transportation if near an aerodrome and approach or take-off flight paths for aircraft".*

When hazardous land uses are already established and prohibitions or restrictions are not options, remedial action may be taken, for example:

- *inform owners and managers about the hazards created by their operations*
- *help develop programmes to minimize the operation's attractiveness to birds.*

The Section for Landfills states:

Landfills

***Landfills should not be located close to aerodromes, because they are immensely attractive to scavenging birds due to the abundant food source.** However, landfills can be made less attractive to birds with:*

- *overhead wires installed to interfere with the birds' flight path..³⁷*

I interpret the above, that aerodrome operators are encouraged to participate in resource management hearings such as this, with the preliminary position being that Landfills (such as that represented by Smooth Hill) should not be located close to aerodromes. The approach for existing facilities is to undertake remedial action to make the landfill less attractive to birds.

66.2 **NZCAA (2008) Guidance for Land Use at or Near Airports: Wildlife Management – (Attachment 2)** Identifies that:

Under CAR 139.71 an aerodrome operator must establish an environmental management programme to minimise or eliminate any wildlife hazard that presents a hazard to aircraft operations at their aerodrome in areas within their authority.

The management of wildlife, especially birds, is critical for aircraft operational safety....

Garbage disposal dumps and other sources that may attract wildlife activity on, or in the vicinity of, an aerodrome, need to be assessed as a potential source of wildlife hazard. It

³⁶ AC139-16 [page 11]

³⁷ The remainder of this material is set out the evidence of Mr Shaw [59]

is an International Civil Aviation Organisation requirement that such activities are closely managed by the controlling authority. If necessary an aeronautical study may need to be undertaken to assess the potential wildlife activity hazard.

Examples of wildlife attractants include:

- Refuse Dumps and landfills

Refuse dump or landfills

If a refuse dump is proposed in the vicinity of the aerodrome there may be a requirement to provide bird control at the site to reduce the attractiveness to birds. The potential threat to aircraft depends on location relative to airport and flight paths, type of refuse, and the types of birds expected in the vicinity.

The ICAO Bird Control and Reduction Manual recommends that refuse dump sites be located no closer than 13 kilometres from the airport property. The proper siting of refuse dumps can reduce hazard and any location should be analysed by a group of specialists on bird problems.

Whilst I agree with Mr Shaw³⁸ that an aeronautical study has been undertaken for the application. I reiterate my concerns as expressed above, that the Boffa Miskell Preliminary Bird Hazard Assessment is sufficiently self-aware to identify that it should be reviewed and updated. As with AC139-16 I interpret the primary approach to landfill siting is that they are not located proximate to aerodromes.

66.3 WasteMINZ – Technical Guidelines for Disposal to Land – Waste Management Institute of New Zealand (August 2018)

Section 4.4 ‘Landfill Siting Criteria – Compatibility with Surrounding Land uses³⁹’ states that:

An assessment of the suitability of a site for landfill, and the extent of available buffer (with respect to reducing the potential for adverse effects on surrounding land use) should consider:

- *Airport Safety (Footnote 2 - The CAA ‘Guidance Material for land use at or near airports’ (2008) notes that the International Civil Aviation Organisation (ICAO) Bird Control and Reduction Manual recommends that [municipal solid waste landfill] sites be located no closer than 13 kilometres from the airport property.*

In this context, it is relevant that Proposed Change 1: Otago Regional Plan – Waste for Otago (6 July 2020)⁴⁰ seeks to insert:

Policy 7.4.11 *To minimise the adverse effects of discharges from new and operating landfills by requiring that:*

³⁸ EIC Shaw [122]

³⁹ WasteMINZ – Technical Guidelines for Disposal to Land – Waste Management Institute of New Zealand (August 2018) [page 57].

⁴⁰ Policy 7.4.11 has been the subject of an Environment Court mediation with a settlement reached in which DIAL, DCC, and ORC were parties. A consent order is due to be issued but was unavailable at the time of writing this evidence. I will update the Commissioners when it issued.

- (a) **the siting, design, construction, operation and management of new and operating landfills is in accordance with the Waste Minimisation Institute New Zealand's Technical Guidelines for Disposal to Land (August 2018) and ...**

66.4 The International Civil Aviation Organisation (ICAO) Guidelines

I understand from the evidence of Mr Shaw, that ICAO states:

- (a) that the appropriate authority shall take action to eliminate or prevent the establishment of garbage disposal dumps in the vicinity of an aerodrome, unless an appropriate aeronautical study indicates they are unlikely to create conditions conducive to a bird hazard problem⁴¹.
- (b) garbage dumps and landfill sites are a type of land use which are proven to attract hazardous wildlife and should be prevented, eliminated or mitigated.

In addition, Section 4.4.1⁴² states 'a 13km circle centres on the aerodrome... is recognised where land use should be assessed with regard to wildlife hazard management'. Section 4.4.7 states:

'The appropriate authority should encourage prohibiting or restricting the establishment of new or existing organic waste sites near aerodromes. If a waste management site in the vicinity of an aerodrome cannot be closed, it may be necessary to provide control measures at the site to reduce its attractiveness to hazardous wildlife.'

66.5 I accept with the caveats above, that an aeronautical study has been undertaken. Mr Shaw notes at [118] that the 'proposal is now a non-food garbage landfill' however, as identified in the Conditions of Mr Dale, some 10% of putrescible material may still be received in the waste stream.

66.6 In addition, 'highly odorous wastes'⁴³ are identified as being part of the accepted waste stream, without limitation on frequency or volume. I note that several of those categories of waste stream (as below), are identified in Mr Shaw's Australian National Airports Safeguarding Framework (**NASF**) Wildlife Attractant Risk and Actions Table⁴⁴, as being related to activities identified as High Wildlife Attraction Risk and 'Incompatible' within a 3km radius to aerodromes (Area A) and 'Mitigate' with an 8km radius (Area B). These include fish processing and food processing. Sewage / Wastewater treatment facility is classed as Mitigate' with an 8km radius (Area B). I understand that the rationale for such is associated with exterior storage of waste materials, and transport of waste solids.

'Highly odorous wastes include but are not limited to:

- (i) *Wastewater treatment sludges, biosolids, screenings.*
- (ii) *Wastewater pump station screening, grits.*
- (iii) *animal remains.*
- (iv) *waste from meat processes.*
- (v) *Woolscour, tannery, fellmongery waste.*
- (vi) *Fish waste.*

⁴¹ EIC Shaw [52]

⁴² ICAO Doc 9137 Airport Services Manual – Part 3 Wildlife Hazard Management. Fifth Addition, 2020. EIC Rogers.

⁴³ EIC Dale [Condition #43]

⁴⁴ EIC Shaw [Table 5]

SECTION 104(1)(a) – ACTUAL OR POTENTIAL EFFECTS ON THE ENVIRONMENT – BIRD STRIKE RISK

67 ICAO⁴⁵ Section 4.1.2 states:

'Land use practices that attract hazardous wildlife populations on, or in the vicinity of, the aerodrome can significantly increase the potential for wildlife strikes'.

68 There appears to be broad agreement that the Smooth Hill Landfill, as located within 4.5km of Dunedin Airport could pose a significant aviation hazard, especially given that Dunedin Airport has an existing high bird strike risk⁴⁶.

69 The matter to consider therefore is whether mitigation including through the adaptive Bird Management Plan in combination with putrescible wastes and management of BBG pre-closure of Green Island Landfill⁴⁷ or avoidance is the more appropriate response.

70 I acknowledge that the applicant is 'live' to these concerns and has identified an adaptive management approach and suite of conditions⁴⁸ that would seek to reduce risk.

71 Ms Lennox outlines that she retains residual concern that the risk of bird strike has been adequately addressed⁴⁹, and I share those concerns based on my consideration of the Preliminary Bird Hazard Assessment and the caveats expressed within it. Accordingly, in my view there remains uncertainty as to what is represented by an acceptable level of risk. I am unable to find any quantifiable statement as to a threshold of acceptable risk in this context.

72 In my view the presumptive approach of the CAA and Technical Guidelines for Disposal to Land is to avoid landfills proximate to aerodromes. DIAL has an acknowledged baseline of a high risk of bird strike, and as shown in the evidence of Mr Debono the substantial proportion of flights approaching and take-off over RW03 (Runway 3) are below 5,000ft traversing directly over the Smooth Hill landfill site.

73 Both ICAO Airport Services Manual⁵⁰ and a consideration of the consenting framework do not preclude landfills within 13km of DIA. Section 104 of the Resource Management Act provides for the ability to undertake an aeronautical study and demonstrate that effects can be appropriately mitigated or remediated in terms of a consideration under s104(1)(a) and s104(1)(b). I accept that the CAA Guidance, is just that, unless referenced with the statutory framework such as Policy 7.4.11 of Proposed Change 1: Otago Regional Plan.

74 The approach recommended by ORC is that adverse effects are effectively avoided through a limitation on 50g birds as managed to zero densities daily, where non-compliance with such over a consecutive 3 days results in the landfill ceasing operations and material covered (including by netting) until zero densities of birds are reached for a consecutive 5 days⁵¹.

⁴⁵ ICAO Doc 9137 Airport Services Manual – Part 3 Wildlife Hazard Management. Fifth Addition, 2020. EiC Rogers.

⁴⁶ EiC Shaw [124]. Preliminary Bird Hazard Assessment: Boffa Miskell May 2021 [Summary]. s42A Lennox [6.1.8]

⁴⁷ EiC Shaw [125 – 127]

⁴⁸ EiC Dale [92]

⁴⁹ s42A Lennox [6.1.8]

⁵⁰ Fifth Edition (2020)

⁵¹ s42A Lennox [6.1.8]

- 75 The Smooth Hill facility scale, extending beyond the tip face is substantial. Based on the survey data included in the Preliminary Bird Hazard Assessment⁵² whilst such a zero-tolerance approach would certainly focus the approach, it is considered that such a limit may be unrealistic given the baseline and as applied across the entirety of the Smooth Hill facility. I consider that conditions need to be effective and practicable, and that this recommended condition would cease the operations of the facility. Such an approach, whilst I imagine having some attraction to DIA, sets the landfill up to fail. The approach would create an inevitable tension between landfill site staff responsible for monitoring and recording the presence of birds, and the commercial imperatives and operational function of the landfill operator. The cessation of operations to manage an effect between incompatible activities, where avoidance may be the more appropriate approach in my view represents poor planning practice and a failure of integrated management.
- 76 The applicant's approach is:
- 76.1 that the waste stream is controlled to 'reduce' putrescible waste⁵³;
 - 76.2 the requirement for a Landfill Operational Bird Management Plan⁵⁴, regular risk assessments⁵⁵, daily registers⁵⁶, and Bird Management Operational Group including DIAL⁵⁷;
 - 76.3 in combination with an adaptive management approach associated with bird management⁵⁸.
- 77 The remaining concerns as to the residual level of risk are:
- 77.1 An enforceable approach as to the reduction and management of the BBG population established on the Green Island facility dispersing to the Smooth Hill Facility. As identified by both Mr Shaw and within the Preliminary Bird Hazard Assessment⁵⁹ development of a '*Bird Hazard Management Plan for BBGs around Dunedin and Green Island Landfill prior to its closure will assist with managing the number of gulls that could be attracted to the new site...*'. Currently, only recommended Condition 77(b) of the Draft Applicant Conditions cover this matter. That condition does not extend into the requirement for such a Bird Hazard Management Plan, nor extends to a certain or specific management approach, including bird control, removal of food sources and culling.
 - 77.2 Consistent enforceability and workability of such a complex array of conditions over a planned 40 year expected life associated with the Smooth Hill facility. The conditions rely on people behaving diligently and in a consistent manner over a long time period, as well as the inevitable tension with the commercial imperatives of the facility. Recording the presence of birds creates an unwelcome problem for the landfill operator.

⁵² Preliminary Bird Hazard Assessment: Boffa Miskell May 2021 [Table 2]

⁵³ EIC Henderson. EIC Dale [Condition #74, 75, Appendix 3]

⁵⁴ EIC Dale [Condition 78]

⁵⁵ EIC Dale [Condition 81]

⁵⁶ EIC Dale [Condition 79]

⁵⁷ EIC Dale [Condition 82]

⁵⁸ EIC Dale [Conditions 80 – 85]

⁵⁹ EIC Shaw [127]. Preliminary Bird Hazard Assessment: Boffa Miskell May 2021 [Summary. Recommendation #3]

77.3 Enforceability and confidence associated with the adaptive management approach, noting that such an approach is proposed by the applicant in part as a precautionary and pragmatic approach to bird strike risk management.

- (a) I consider that the inclusion of such in the Conditions of consent, rather than retained in the Bird Management Plan is an appropriate approach⁶⁰.
- (b) I understand that for an adaptive management approach⁶¹ to be endorsed the following principles are to be satisfied:
 - (i) There is good baseline information about the receiving environment;
 - (ii) the conditions provide for effective monitoring of adverse effects using appropriate indicators;
 - (iii) thresholds are set to trigger remedial action before effects become overly damaging; and
 - (iv) effects that might arise can be remedied before they become irreversible.
- (c) I accept the evidence of Mr Shaw that for (iii) an appropriate individual trigger level (50grams) and frequency of individuals is provided, as is deterrence and control mechanisms. However, based on the Preliminary nature of the Bird Hazard Assessment: Boffa Miskell May 2021 and my conclusions at [57] there is insufficient baseline data associated with the receiving environment (clause (i)). Lastly in terms of (iv) I agree with Mr Debono that given potential risk associated with a strike, that a 24 hour notification period to DIA is insufficient, especially if associated with a considerable influx in birds, including but not limited to BBG whilst the operator undertakes remedial dispersal operations. In short, the inevitable delay between birds arriving and management responses being effective leaves an unmanaged risk to aviation.

77.4 Lastly, residual waste streams associated with putrescible waste (although noting a 10% maximum contribution) and 'highly odorous wastes'.

- 78 I understand the concerns raised by DIAL that a "no additional risk" approach is the preferred option. That approach is predicated based on their responsibilities associated with CAA certification and necessity to ensure safety is paramount.
- 79 As identified, the risks (and effects) associated with bird strike are not predicated solely on a catastrophic event, any reduction in operational or functional efficiency would be detrimental to the Airport, the regional economy and is not supported in terms of the prioritisation of the Airport as Nationally or Regionally Significant Airport within the Otago Regional Planning framework.
- 80 I do not have complete confidence that the very high threshold by which either a significant effect is curtailed, or that the functional operations of the Airport as nationally and regionally significant infrastructure is affected has been reached. I do however acknowledge the efforts undertaken by the applicant.

⁶⁰ EIC Dale [Appendix 1]

⁶¹ Including as set out in PROPS Policy 5.4.2

- 81 For completeness, the economic evidence of Mr Akehurst which identifies a net added value in the Dunedin economy (as discounted) at \$22.9m⁶² does not account for any reduction in functional or operational capacity associated with Dunedin Airport were CAA to reduce operations on the basis of safety concerns associated with the land fill. The economic analysis does not factor in any ongoing issues associated with ceasing operations or remedial actions associated with bird strike risk management.
- 82 Were the Panel, after considering all evidence, satisfied that adverse effects associated with bird strike risk, including cumulative effects can be appropriately mitigated as set out in the evidence of Mr Shaw, then I consider that there is also a need to amend the following conditions identified by Mr Dale:
- 82.1 Condition 2. To extend the application of Section 128 to any ongoing matters raised by the Bird Management Operational Group (Condition 82), an inherent increase in risk profile recommended within the annual risk assessment (Condition 81) or any breaches associated with the adaptive management approach (Condition 80).
- 82.2 Condition 7(g) '*Management of adverse environmental effects*'. To insert 'including results of any bird register required under Condition 79, or any remedial actions undertaken under Condition 80
- 82.3 Whilst there is a preference that 'Highly Odorous Wastes' are not accepted at the Smooth Hill Facility, or otherwise explicitly controlled in terms of volume and frequency and narrowed to only wastewater screenings / sludge, with commercial waste diverted elsewhere, Condition 43(f) – where retained – should be amended to linked 'covered' to Condition 44 which explicitly identifies coverage as:
- (a) non-combustible compacted soil cover to a minimum depth of 150mm; or
 - (b) non-combustible alternative materials that perform to an equivalent or higher standard to 150mm soil cover.
- 82.4 Greater confidence and certainty in terms of the thresholds provided in the evidence of Mr Dale Appendix 3 as to a 10% maximum waste stream of putrescible waste – reducing to 5% over a fixed time, and that such waste is separated at a separate facility to Smooth Hill.
- 82.5 Attachment 3 to Mr Dale's proposed conditions should be amended so that so that the contaminated waste, once separated from the general waste stream at the Bulk Waste Transfer Centre, is diverted away from Smooth Hill to alternative locations. I understand from the evidence of Mr Keogh that suitable alternatives are available.

SECTION 104(1)(b) – RELEVANT PROVISIONS: BIRD STRIKE

- 83 Aerodrome and airport are defined in a range of ways across the relevant statutes. The definition of "airport" in the Resource Management Act 1991 which similarly to the other statutes, provides:

"Airport means any defined area of land or water intended or designed to be used, whether wholly or partly, for the landing, departure, movement, or servicing of aircraft"

⁶² EIC Akehurst [22]

84 Section 3 (and 4) of the Airports Authorities Act 1966, confers the power on DIAL to establish, improve, maintain, operate and manage the Dunedin International Airport.

85 The National Policy Statement on Urban Development (2020) recognises the Airport as nationally significant infrastructure⁶³, but is otherwise irrelevant to this matter.

86 I have considered the following relevant planning documents:

86.1 Partially Operative Regional Policy Statement (2019)

86.2 Proposed Regional Policy Statement (2021)

86.3 Regional Plan – Waste for Otago (RP Waste) as amended by proposed Plan Change 1⁶⁴.

Partially Operative Regional Policy Statement

87 Objective 4.3 seeks that *'Infrastructure is managed and developed in a sustainable way'*.

88 Supporting **Policy 4.3.2** recognises the airport as being 'of regional and national significance'. Landfills are not provided with that status nor importance in terms of the hierarchy of subsequent provisions, as **Policy 4.3.3** seeks that the functional needs of infrastructure of regional and national significance is *'provided for ... including safety'*.

Policy 4.3.3 *Functional needs of infrastructure that has national or regional significance*
Provide for the functional needs of infrastructure that has regional or national significance, including safety.

89 **Policy 4.3.5** is of substantial relevance to the proposal and represents a relatively high hurdle in terms of consideration under s104(1)(b). Specifically, it is noted that the Policy is conjunctive, in that *'all of the following criteria'* are to be applied in terms of 'protecting' infrastructure of regional and national significance. The policy in full states:

Policy 4.3.5 *Protecting infrastructure with national or regional significance*
*Protect infrastructure with national or regional significance, **by all of the following**:*

- a) **Restricting** the establishment of activities that **may result in reverse sensitivity effects**;
- b) **Avoiding significant** adverse effects **on the functional needs** of such infrastructure;
- c) **Avoiding, remedying or mitigating other** adverse effects **on the functional needs** of such infrastructure;
- d) ...

89.1 The following is noted:

- (a) *Functional needs* (Glossary Appendix 1): *The locational, operational, practical or technical needs of an activity, including development and upgrades.*
- (b) *Protection*: (Oxford Dictionary) *The act of protecting someone or something; the state of being protected.*
- (c) *May* (Oxford Dictionary) *expressing possibility.*
- (d) *Restrict* (Oxford Dictionary) *confine, bound, limit.*

⁶³ NPS-UD Section 1.4 Interpretation.

⁶⁴ As subject to Appeal.

(e) *Avoid (Oxford Dictionary) prevent, refrain.*

- 90 Based on the above consideration, even in the absence of a catastrophic event, an increase in bird strikes resulting in an increase in direct costs, indirect costs and ancillary costs to DIAL could (may) result in a 'significant adverse effect' on the functional needs of DIA as nationally or regionally significant infrastructure.
- 91 Such would be contrary to **Policy 4.3.5**, as such effects are to be precluded under clause (ii). I also consider that the policy in the first instance (clause i) seeks a pre-emptive approach to restricting land use activities (not as narrowly focused to their effects being 'avoided, remedied or mitigated' as required under clause (iii)) as incompatible with nationally or regionally significant infrastructure. Based on the Guidance documents above, I consider that the Smooth Hill Landfill activity is incompatible with Dunedin Airport.

Proposed Regional Policy Statement (2021)

- 92 EIT-INF-P10 seeks that decision making on the allocation of natural and physical resources must take into account the needs of *nationally and regionally significant infrastructure*. That definition(s)⁶⁵ extends to DIA, but not Smooth Hill.
- 93 EIT-INF-P14 requires for decision making considerations, that where adverse effects are considered significant or irreversible, that alternative sites, methods and designs are considered. I acknowledge that the applicant has, as a consequence of the analysis by Mr Shaw, amended the proposal to reduce the extent of putrescible waste to less than 10% of volume as 'an alternative method'. I understand that alternative locations to export waste are not impracticable to implement, where the Panel considers that adverse effects associated with birdstrike risk to DIA remain significant.
- 94 EIT-INF-P15 seeks to protect national or regionally significant infrastructure. The policy is stated in full below.

EIT-INF-P15 – Protecting nationally or regionally significant infrastructure

Seek to avoid the establishment of activities that may result in reverse sensitivity effects on nationally or regionally significant infrastructure, and/or where they may compromise the functional or operational needs of nationally or regionally significant infrastructure.

As stated, I have concluded that adverse effects from increased birdstrike risk associated with the Smooth Hill Landfill activity is incompatible with Dunedin Airport and may compromise the functional or operational needs of the later. On a finding that effects are either significant, or cumulative costs would impact on functional or operational needs, the Smooth Hill facility is contrary to this Policy.

- 95 Additional relevant provisions include:
- 95.1 EIT-TRAN-07 which seeks that Otago has an integrated air, land and sea transport network that is effective, efficient and safe, and connects with other regions and internationally. Any reduction in operations at DIA would result in a tension with this objective.

⁶⁵ PRPS Part 1 – Definitions 'Nationally Significant Infrastructure', 'Regionally Significant Infrastructure'.

- 95.2 EIT-TRAN-P21 seeks to avoid adverse effects of activities on the transport system, including avoiding the impacts of incompatible activities.
- 95.3 EIT-INF-AER7 (Anticipated Results) identifies the outcome that nationally and regionally significant infrastructure is protected from reverse sensitivity effects caused by incompatible activities.

In summary the provisions seek that nationally and regionally significant infrastructure, which extends to DIA (but not the Smooth Hill facility) avoids effects associated with incompatible activities, and that functional or operational needs are not compromised.

Regional Plan – Waste for Otago (RP Waste)

- 96 I have identified in evidence that I consider that the Smooth Hill proposal, at best has a policy tension with Policy 7.4.11 which requires that the adverse effects of new landfills is required to be accord with (amongst other matters) siting in accordance with the Waste Minimisation Institute New Zealand's Technical Guidelines for Disposal to Land (August 2018).
- 97 Those guidelines expressly state at Section 4.4. 'Landfill Siting Criteria' the need to consider Airport Safety, referencing that the International Civil Aviation Organisation (ICAO) Bird Control and Reduction Manual recommends that [municipal solid waste landfill] sites be located no closer than 13 kilometres from the airport property.

SECTION 104(1)(c) AND SECTION 105(1)(c) – ALTERNATIVES

- 98 The Designation for the site has been in place (in one form or another) since the Dunedin City Plan was made operative in 2004. However, discharge consent is required for waste, including hazardous waste on land to facilitate the landfill⁶⁶. There is a requirement therefore to consider the availability of alternatives, where the consent authority concludes that a proposal is likely to have significant effects on the environment⁶⁷.
- 99 It is understood that the export of waste was determined to be viable⁶⁸.
- 100 I understand from discussions with Mr Dale, and consideration of his volunteered conditions that amendments to the waste disposal stream have been considered and are now recommended by the applicant. These includes endeavours to remove putrescible waste. I have identified my residual concerns as to the extent to which there can be certainty as to the application of Appendix 3 in the evidence of Mr Dale, and with 'Highly Odorous Wastes'. I consider greater certainty for the former and formal removal of the latter would go a considerable way towards an appropriate alternative.

CONCLUSION

- 101 The endeavours of the applicant to recognise and manage issues associated with birdstrike risk are acknowledged.

⁶⁶ Regional Plan – Waste for Otago Rule 6.6.1 / 7.6.1

⁶⁷ Section 104(c), Section 105(1)(c), Section 88 – Schedule 4(6)(1)(a).

⁶⁸ s42A Lennox [6.4.2]

- 102 The impression remains however, that the initial site selection process in the 1990's failed to adequately recognise the operational and function role of Dunedin Airport, and bird strike risks thereof.
- 103 Subsequently there is a concerted effort to 'shoe horn' a mitigation package to a poorly selected site. That mitigation package is complex and requires a concerted and effective approach over the 40 year period of the facility. Any failures in compliance could result in a significant effect on DIA operations. In addition, there is additional certainty necessary as to the management of waste streams, and the continuation of receiving highly odorous wastes and contaminated general waste which raise the risk profile.
- 104 Accordingly, it is considered that the proposal would result in significant adverse effects associated with birdstrike, without adequate mitigation (or preferably avoidance), and consequently would be contrary to relevant policies and objectives, including PROPS 4.3.3 and 4.3.5, PRPS EIT-INF-P15, and creates a tension with Regional Plan – Waste for Otago Policy 7.4.11.

Matt Bonis

6 May 2022

ATTACHMENT A – EXPERIENCE AND QUALIFICATIONS

Qualifications

I hold a Bachelor of Regional and Environmental Planning (Hons) gained from Massey University in 1995.
I have worked as a strategic planner and policy advisor for over 25 years.

Experience

My main areas of expertise are spatial, retail and industrial land planning, strategic policy development, and strategic infrastructure development. I have worked extensively on these issues throughout New Zealand and in the United Kingdom.

My experience in resource management matters relating to aviation includes:

- assisting Christchurch International Airport Ltd (CIAL) on a wide range of planning matters, including strategic planning, resource consents and outline plans, and planning representation at plan and consent hearings.
- assisting Nelson Airport Ltd (NAL) with planning input into the draft replacement Resource Management Plan (2021), Future Development Strategy (2021) and preparation of a Notice of Requirement.
- assisting the Queenstown Lakes District Council with Appeals to the Proposed District Plan as associated with Chapter 17 – Airport Zone, and Chapter 37 Designations.

I have also assisted a number of territorial authorities on matters relating to infrastructure, urban growth and business and retail strategy and policy drafting.

I have also undertaken the following:

- representing the Auckland Regional Council (Specified Commercial Appeals to the Change 6 LG(A)AA 2004), which formed the predecessor provisions to Section B3.1; Auckland Unitary Council on the Section B3.1 provisions.
- Woolworths New Zealand Ltd. (*Woolworths New Zealand Ltd vs Christchurch City Council [2021] NZEnvC133*).
- Christchurch City Council (*National Investment Trust vs Christchurch City Council. C152/2007*).
- Waimakariri District Council (*Kiwi Property Holdings et al vs Christchurch City Council [2012] NZEnv92*).
- Taupo District Council (*Advance Properties Group Ltd et al vs Taupo District Council [2014] NZEnvC126*).

Associate, (and Senior Planner)

Planz Consultants, Christchurch, New Zealand

April 2005 – Present

Senior Planner, Strategy and Policy

Christchurch City Council, Christchurch, New Zealand

June 2000 – April 2005

Community Resource Management Advisor,

Christchurch Community Law Centre, Christchurch, New Zealand

November 1999 – May 2000

Planner

Adams Hendry Planning Consultancy, Winchester, United Kingdom

May 1998 – August 1999

Policy Planner, District Planning

New Plymouth District Council, New Plymouth, New Zealand

December 1995 – March 1997

**ATTACHMENT B – CIVIL AVIATION AUTHORITY NZ – GUIDANCE MATERIAL FOR LAND
USES AT OR NEAR AERODROMES (JUNE 2008)**



Guidance material for land use at or near aerodromes

June 2008

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Overview

The environment at and surrounding an airport has unique characteristics that impact on land use. Specific requirements for the operation of aircraft, airport design and airspace management are covered in the Civil Aviation Act 1990 and Civil Aviation Rules. The regulatory oversight of these requirements is undertaken by the Director of Civil Aviation and the Civil Aviation Authority of New Zealand.

New Zealand is a signatory to the Convention on International Civil Aviation (the Chicago Convention) which is a set of international requirements for civil aviation coordinated through the International Civil Aviation Organisation (ICAO). New Zealand has adopted the ICAO standards and recommended practices as the basis for New Zealand Civil Aviation Rules (CARs).

Aerodrome operators in New Zealand should monitor and review land use activities around their aerodrome to ensure the safe operation of aircraft and protection of airspace. Those persons making changes to land use must ensure that they comply with any applicable CARs, local authority planning requirements and work with aerodrome operators in land use changes.

The following provides guidance for those persons proposing land use changes around aerodromes and identifies specific points to be taken into account.

Glossary

Aerodrome—

- (1) means any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft; and
- (2) includes any buildings, installations, and equipment on or adjacent to any such area used in connection with the aerodrome or its administration.

(An aerodrome includes a heliport)

Civil Aviation Rules means rules made under the Civil Aviation Act.

Types of Aerodromes

Many aerodromes in New Zealand hold a Civil Aviation Rule Part 139 aerodrome operating certificate. These include international and large domestic aerodromes. The Part 139 certificate is required for aerodromes where aircraft with more than 30 passenger seats operate regular air transport operations. Aerodromes that do not meet the more than 30 passenger seat criteria may also hold a Part 139 certificate. The Part 139 certificate requires the aerodrome operator to comply with a range of rules and requirements including ongoing CAA oversight.

Under Part 139, there are two specific requirements to be met for land use; Obstacle Limitation Surfaces and Wildlife Hazard Management.

The remainder of New Zealand's aerodromes are non-certificated. The only CAR requirements on a non-certificated aerodrome are those that form part of the operating requirements for any airline or aircraft operator that uses the aerodrome.

Obstacle Limitation Surfaces

Under CAR 139.51 an aerodrome operator must have in place obstacle limitation surfaces for the aerodrome that are defined surfaces in the airspace above and adjacent to the aerodrome. These obstacle limitation surfaces are necessary to enable aircraft to maintain a satisfactory level of safety while manoeuvring at low altitude in the vicinity of the aerodrome. These surfaces should be free of obstacles and subject to control such as the establishment of zones, where the erection of buildings, masts and so on, are prohibited.

More information on obstacle limitation surfaces (OLS) can be viewed online at www.caa.govt.nz under Advisory Circulars.

For Part 139 certificated aerodromes the OLS requirements can be found in Chapter 4 of CAA Advisory Circular AC139-6.

For non-certificated aerodromes the OLS requirements can be found in Chapter 3 of CAA Advisory Circular AC139-7.

For heliports the OLS requirements can be found in Chapter 4 of CAA Advisory Circular AC139-8.

The OLS surfaces are normally published in the local District Plan and can also be sourced directly from the aerodrome operator.

It is important that any proposed building or structure does not infringe required OLS areas. Consultation with the aerodrome operator and the relevant local authority at an early stage is essential.

Wildlife Hazard Management

Under CAR 139.71 an aerodrome operator must establish an environmental management programme to minimise or eliminate any wildlife hazard that presents a hazard to aircraft operations at their aerodrome in areas within their authority.

The management of wildlife, especially birds, is critical for aircraft operational safety. Bird strikes put the lives of aircraft crew members and their passengers at risk. In the United States over 7,500 bird and other wildlife strikes were reported for civil aircraft in 2007. Bird and other wildlife strikes to aircraft annually are estimated to cause well over \$600 million in damage to civil and military aviation in the United States alone.

It is important that land use changes are monitored and reviewed by the aerodrome operator in areas outside their immediate control to ensure that these land use changes do not increase wildlife hazards for the aerodrome.

Garbage disposal dumps and other sources that may attract wildlife activity on, or in the vicinity of, an aerodrome, need to be assessed as a potential source of wildlife hazard. It is

an International Civil Aviation Organisation requirement that such activities are closely managed by the controlling authority. If necessary an aeronautical study may need to be undertaken to assess the potential wildlife activity hazard.

Examples of wildlife attractants include:

- Refuse Dumps and landfills
- Sewage Treatment and Disposal
- Agricultural - cultivation of land, types of activity e.g. pig farming.
- Fish processing plants
- Cattle feed lots
- Wildlife refuges
- Artificial and natural lakes
- Animal farms
- Abattoirs and freezing works

Proper planning of these activities and their impacts on wildlife should be undertaken. It should be noted that aircraft approach and departure areas may extend for a distance from the aerodrome runway, therefore wildlife impacts on aircraft activities may not be immediately apparent. Consult the aerodrome operator as early in the planning as possible.

The International Civil Aviation Organisation provide specific environmental management and site planning information on the following:

Refuse dump or landfills

If a refuse dump is proposed in the vicinity of the aerodrome there may be a requirement to provide bird control at the site to reduce the attractiveness to birds. The potential threat to aircraft depends on location relative to airport and flight paths, type of refuse, and the types of birds expected in the vicinity.

The ICAO Bird Control and Reduction Manual recommends that refuse dump sites be located no closer than 13 kilometres from the airport property. The proper siting of refuse dumps can reduce hazard and any location should be analysed by a group of specialists on bird problems.

Water

Surface water is a large bird attractant and developments that have drainage ditches, artificial waterways and large areas of water close to an aerodrome may attract birds and other wildlife.

In the ICAO Bird Control and Reduction Manual it is noted that in the vicinity of an aerodrome artificial and natural lakes increase the bird strike hazard depending on the size and the shape of the lake, its ecological state and the surroundings. It is recommended that

an ornithologist/biologist evaluate the ecological conditions of the whole vicinity as well as migration in the area. The bird strike hazard can be reduced if the lake is made smaller and the shores steeper, and if fishing, hunting and water sports are forbidden. Filling a lake with soil or covering the surface with wires and nets are two of the better solutions to the problem.

Notice of Intention to Construct, Alter, Activate or Deactivate an Aerodrome

Civil Aviation Rule Part 157 requires that prior notice be given to the Director of Civil Aviation whenever a person intends to construct, alter, activate or deactivate an aerodrome. This notice will enable the Director to identify whether the use of the airspace associated with the aerodrome proposal will be a hazard to other established airspace users. It will also allow identification of problems to do with the safety of persons and property on the ground.

It is also necessary to consider efficient use of airspace at an early stage. The Director, after receiving such notice, will give advice on the effects the proposal would have on the use of navigable airspace by aircraft and on the safety of persons and property on the ground. An aeronautical study will be undertaken and a determination on the proposal made.

The Part 157 rule requirements and Part 157 Advisory Circular are available on the CAA web site www.caa.govt.nz

There is also a Part 157 information leaflet available from CAA or at: http://www.caa.govt.nz/aerodromes/Aero_Studies_Pt157_info.pdf

Objects and Activities Affecting Navigable Airspace

Civil Aviation Rule Part 77 prescribes rules for a person proposing to construct or alter a structure that could constitute a hazard in navigable airspace; or use of a structure, lights, lasers, weapons, or pyrotechnics, that could constitute a hazard in navigable airspace.

There are several areas that require a Part 77 application for a determination on such objects and activities including:

- A structure that extends more than 60 m in height above the ground level at its site.
- A structure that exceeds the general tree height in the area by 18 m and is located in an area of low level aerial activity or other low flying activity, or in a low flying zone or low level route as prescribed under Part 71.
- A structure that is located below the approach or take-off surfaces of an aerodrome as defined in Part 77.
- A structure that penetrates the obstacle limitation surface of an aerodrome.

- A person proposing to use a structure that may discharge efflux at a velocity in excess of 4.3 m per second through an obstacle limitation surface of an aerodrome or higher than 60 metres above ground level.
- A person proposing to operate a light or a laser if the light or laser is liable to endanger aircraft.
- A person or organisation that proposes to use a weapon that fires or launches a projectile that has a trajectory higher than 45 m if within 4 km of an aerodrome boundary, or 120 m if more than 4 km from an aerodrome boundary.
- A person who proposes to stage a pyrotechnics display that involves the firing or launching of a projectile that has a trajectory higher than 45 m if within 4 km of an aerodrome boundary or 120 m if more than 4 km from an aerodrome boundary.

A person proposing to construct or alter a structure must notify the Director of Civil Aviation 90 days before the proposed date of commencement of construction or alteration. The specific requirements are detailed in Civil Aviation Rule 77.13.

An aeronautical study will be undertaken and a determination on the proposal made.

Full details and information on Part 77 requirements are available in the Part 77 Rule which can be accessed at the CAA web site www.caa.govt.nz.

Noise Issues

Noise issues to do with aerodromes are the responsibility of the local controlling authority and the CAA does not have any statutory function in relation to aircraft or aerodrome noise. The Minister does produce rules relating to noise abatement measures under Civil Aviation Rule Part 93 which are published on behalf of the aerodrome operator from local authority requirements.

Local Authority Zoning

The CAA encourage local authorities to protect aerodromes in their areas to ensure the long term sustainability of the aerodrome, the safety of the aircraft operations, and the safety of persons and property. In addition to the required obstacle limitation surfaces other areas can be specifically zoned to assure that future uses of the land are compatible with airport operations and to protect persons and property. Zoning solely to obstacle limitation surface is insufficient to prevent the construction of incompatible uses such as housing or uses that attract congregations of people in the approach areas.

In the United States a runway protection zone (RPZ) is used by many local authorities for the protection of people and property on the ground. Compatible land use within the RPZ is generally restricted to such land uses as agricultural, golf course, and similar uses which do not involve congregations of people or construction of buildings or other improvements that may be obstructions. Land uses prohibited from the RPZ are residences and places of public assembly including churches, schools, hospitals, office buildings and shopping centres.

Summary

Aerodromes have an important role in aviation safety in particular the safety of aircraft and passengers. In New Zealand the Civil Aviation Authority oversees aviation safety based upon international aviation requirements. It is important that persons wanting to alter land use near an aerodrome do so in consultation with the aerodrome operator, the relevant local authority and, where necessary, the Civil Aviation Authority.

It is important that land use changes near aerodromes are also compliant with any Civil Aviation Rule requirements.

Contacting the CAA

The Aeronautical Services Unit of the CAA has responsibilities for the oversight of the services supporting the New Zealand aviation system. The unit is responsible for certification and surveillance of aerodromes and heliports, and air traffic, telecommunications, navigation, meteorological and aeronautical information services.

The unit also has responsibilities regarding airspace and Part 77 determinations for objects affecting navigable airspace, such as structures, fireworks, unmanned balloons, kites and model aircraft. They can offer advice on matters relating to Part 139 certificated aerodromes and Part 157 aerodrome determinations.

They can be contacted by phoning the CAA on 04 560 9400 or through specific contact details on the CAA web site www.caa.govt.nz