



Queenstown Airport Corporation

Noise Management Plan

# TABLE OF CONTENTS

	Page
1. INTRODUCTION .....	1
2. QUEENSTOWN AIRPORT LIAISON COMMITTEE (QALC) .....	3
3. NOISE MONITORING .....	8
4. ENGINE TESTING RULES .....	10
5. COMPLAINTS PROCEDURES .....	11
6. CONSIDERATE FLYING PRACTICES .....	13
7. NOISE MITIGATION PLAN .....	15

## LIST OF ANNEXURES

<b>ANNEXURE 1</b>	Noise Control Boundaries
<b>ANNEXURE 2</b>	Ventilation Table
<b>ANNEXURE 3</b>	Flight Tracks

## VERSION CONTROL:

Date	Change	Approval
21 May 2024	Changes to compliance model Resultant update to NMP	QALC – Approved 27 Nov 2023 QALC – approved 26 Feb 2024
10 Oct 2019	Changes to reflect the increase representation in Community	QALC – approved August 2019

# 1. INTRODUCTION

1.1 This Noise Management Plan (**NMP**) has been prepared by Queenstown Airport Corporation Limited (**QAC**) in accordance with Designation 2 and section D.1 of Appendix A1 of the Queenstown Lakes District Plan ("**District Plan**").

1.2 The objectives of this NMP are:

1. *To continue dialogue between QAC and the local community regarding noise management matters at Queenstown Airport.*
2. *To establish and articulate a clear process for the monitoring and reporting of noise levels at Queenstown Airport and actions to be followed in the event of a noise level exceedance.*
3. *To provide a procedure for dealing with complaints including their recording, an acknowledgement to the complainant of their receipt and the outcome once resolved, any corrective action(s) to be taken including those if non-compliance with the conditions of the Aerodrome Purposes designation (Designation 2) is identified and reporting to the QALC.*
4. *To establish a procedure for the avoidance, remediation and mitigation of noise effects at Queenstown Airport, on existing buildings accommodating an Activity Sensitive to Aircraft Noise (**ASAN**) within the Air Noise Boundary (**ANB**) and the Outer Control Boundary (**OCB**) based on the annual calculation of a 65 dB and a 60 dB Projected Annual Aircraft Noise Contour (**Projected AANC**).*
5. *To acknowledge that noise is an inherent part of an airport, which in the case of Queenstown Airport is the travel conduit to connect Queenstown to the rest of the world.*
6. *To manage the effects of aircraft noise on the community.*
7. *To provide the community with certainty as to compliance with the noise limits and effects on all surrounding land uses.*
8. *To detail noise management practices for unplanned engine testing including preferred locations and times.*

1.3 Given these objectives, and the requirements of Designation 2 and section D.1 of Appendix A1 of the District Plan, this NMP addresses the matters listed in Conditions 22 and 23 of the Designation and may include additional matters such as considerate flying practices for aircraft operators.

1.4 This NMP has been drafted to provide the community and the QALC with details of the management of aircraft noise at Queenstown Airport in an easy-to-use format. The NMP will be an evolving document that will be amended and updated as more information becomes available and if further changes occur to

operations at Queenstown Airport. Amendments to the NMP may be initiated by QAC in consultation with QALC or vice versa. QAC will be responsible for the approval of the NMP and for any amended versions prepared in accordance with Designation 2.

- 1.5 Copies of this NMP will be available from QAC, QLDC and representatives on the QALC as well as being posted on the QAC website.

## 2. QUEENSTOWN AIRPORT LIAISON COMMITTEE (QALC)

### PURPOSE

- 2.1 QAC shall be responsible for convening the QALC that is to function as a forum and interface between the Airport and the community and other stakeholders regarding issues related to noise at Queenstown Airport. The ongoing maintenance and functioning of the QALC will be achieved at QAC's expense.
- 2.2 The membership and functioning of the QALC is discussed in the following sections:

### QALC MEMBERSHIP

- 2.3 The membership of the QALC will be structured as follows:

QAC Representative	Up to 2 members
Airways Corporation of New Zealand Representative	1 member
QLDC Representative	1 member
<p><i>It is expected that the QLDC will seek nominations from the community to fill these roles via public notice in two local newspapers.</i></p> <p><i>The appointment of representatives will reflect the communities in close proximity to the Queenstown Airport: Frankton, Kelvin Heights, Hanleys Farm/Jacks Point, Lake Hayes Estate/Quail Rise/Shotover Country. Representatives are expected to liaise with relevant local community and resident associations to ensure that they are kept informed with regard to committee matters.</i></p> <p><i>Representatives will initially be appointed for a period of three years, with the option of further terms of up to three years by mutual consent.</i></p> <p><i>When vacancies occur the QLDC shall seek fresh nominations for a replacement community representative according to the process outlined above.</i></p> <p><i>The contact details of the community representatives on the QALC shall be posted on the QAC and QLDC websites.</i></p>	4 members
<i>A representative of the airlines operating flights at Queenstown Airport.</i>	1 member (to be determined by consensus of all

	scheduled airline operators using Queenstown Airport)
A representative of the Queenstown Airport General Aviation/Helicopter Operators.  Note: At the time this NMP came into force, these operators were referred to as the Milford Users Group.	1 member

## MEMBERSHIP ROLES

### CHAIRPERSON

- 2.4 In addition to the membership set out in the table at 2.3 QAC will appoint an independent chair for the QALC in consultation with the QLDC. This role will be for a fixed 3-year term after which the Chair must step down, but can then stand for reappointment.

### QUEENSTOWN AIRPORT CORPORATION

- 2.5 QAC is the owner and operator of Queenstown Airport and is responsible for ensuring operations and aircraft movements at the airport comply with designation conditions in Designation 2 and section D.1 of Appendix A1 of the District Plan and any Civil Aviation Authority (**CAA**) requirements. In particular, QAC is responsible for the development and implementation of the NMP and for all subsequent amendments. While QAC acknowledges it has responsibility for managing noise at Queenstown Airport, other stakeholders have a role in ensuring the NMP is workable and commercially viable, i.e. airlines and general aviation/helicopter operators. QAC will provide a copy of the NMP to QLDC and QALC within 6 months of the NOR being included in the District Plan as a Designation and copies of any amended versions within one month of their finalisation and approval.
- 2.6 QAC also has a responsibility under section 16 of the Resource Management Act 1991 (**RMA**) to adopt the best practicable options to ensure that the emission of noise from Queenstown Airport does not exceed a reasonable level.

### AIRWAYS CORPORATION OF NEW ZEALAND

- 2.7 Airways Corporation of New Zealand (**Airways**) is responsible for managing all domestic and international air traffic operating within New Zealand's airspace. Airways operate the Air Traffic Control at Queenstown Airport and is responsible for directing air traffic on the runway and maneuvering areas and in the airspace around the airport.

### QUEENSTOWN LAKES DISTRICT COUNCIL

- 2.8 QLDC is the territorial authority within whose jurisdiction the Queenstown Airport is located. QLDC has a responsibility to ensure that all activities undertaken within the Queenstown Lakes District, including at Queenstown Airport, are undertaken in accordance with the requirements established in the

District Plan. QAC is also required to provide the NMP to the QLDC (as the applicable regulatory body for the management of noise and amenity effects) within 6 months of the NOR being included the District Plan as a Designation.

- 2.9 It should also be noted that QLDC is the majority shareholder in QAC. However, its involvement in the QALC is with regard to its regulatory function under the RMA. The expertise of the QLDC representative on the QALC should suitably reflect this aspect of QLDC's functions.

### **COMMUNITY REPRESENTATIVES**

- 2.10 Queenstown Airport is located within close proximity to both existing and planned residential developments with the operation and growth of the Queenstown Airport having the potential to affect the amenity of the community who live in these developments.
- 2.11 Conversely, residential development in the surrounding area has the potential to generate reverse sensitivity effects on the operation of Queenstown Airport, which is a regionally significant asset.
- 2.12 Given the above, the community representatives are tasked with:
- Presenting the views of the local residents and community (including neighbouring properties and special interest groups);
  - Ensuring resident and community views have a direct route into the noise management process; and
  - Promoting communication and understanding between the residents / community and QAC and airport users and providing regular feedback on the deliberations of the QALC.

### **AIRLINES AND GENERAL AVIATION/HELICOPTER REPRESENTATIVES**

- 2.13 Representatives of General Aviation (**GA**) and helicopter-operators and Airline operators are parties to the QALC as they represent the airport users who are responsible for the noise generating activities at Queenstown Airport. As such, their involvement in the QALC is essential to managing noise issues at Queenstown Airport into the future.
- 2.14 The GA / Helicopter operators' representative is responsible for presenting the opinions and views of small commercial operators (i.e. flight-seeing operators, helicopter tourism operators, small commercial charter services) and recreational aircraft users.
- 2.15 The Airlines' representative will be responsible for presenting the opinions and views of the airlines they represent.

## **QALC FUNCTIONING**

### **GENERAL**

- 2.16 It is intended that the QALC will have its inaugural meeting within one month of all representatives outlined in section 2.3 of this NMP being selected. From this inaugural meeting the QALC shall meet up to 4 times per annum. The meeting schedule and need for additional meetings per year will be decided at the discretion of the QALC.
- 2.17 The QAC will provide a venue and secretarial and support services to the QALC at its own expense.
- 2.18 The QAC will provide any necessary data and technical information on aircraft movements and any update of the noise complaint register as set out in Section 5 of this NMP to all QALC representatives in advance of each meeting.

### **MEETING PROCEDURES**

- 2.19 While it is expected that the QALC will develop its own processes for the facilitation of meetings over time, the following procedures are expected to be followed:
1. **Chairperson** – QAC in consultation with QLDC will appoint an independent chair to convene and facilitate all meetings of the QALC.
  2. **Notice of Meeting** – QAC will arrange for a notice of meeting, together with any relevant information, to be sent to all QALC representatives at least 5 working days prior to each meeting. The notice of meeting will set out the time and place of the meeting and the nature of the business to be discussed. Representatives may advise the QAC of items to be included in the notice of meeting.
  3. **Method of Holding Meeting** – A meeting will be held by a number of representatives, who constitute a quorum, being assembled together at the place, date and time appointed for a meeting.
  4. **Quorum** – No business may be transacted at a meeting of the representatives if a quorum is not present. A quorum exists if there are at least four representative members, including one of the community representatives, the Council representative, the representative of the airlines and the QAC representative, present at the meeting.
  5. **Members may act by Representative** – A member of the QALC may appoint a substitute to attend one or more meetings of the QALC provided this is communicated to the chairperson in advance of the meeting.
  6. **Minutes** – The QAC will ensure that accurate minutes of all QALC meetings are produced and circulated to all representatives within 10 working days of each meeting occurring.



## **DISPUTE RESOLUTION**

- 2.20 The QAC is committed to a process whereby differences between parties represented on the QALC are resolved within the committee through the provision of information, analysis, consultation and the development of a consensus.
- 2.21 QAC recognises, however, that there may be occasions where a consensus is not reached. In these circumstances the following procedure will be utilised:
1. The Chairperson may determine that a point of difference exists between the various representatives and may, if the issue is of significance, appoint an independent mediator.
  2. To facilitate any such mediation QAC will provide, at its cost, the Mediator with whatever information is reasonably necessary (including a legal opinion on the issue in question if required), on the basis that the information and advice will be made available to all representatives on the QALC.
  3. If, despite best efforts (including independent mediation), a consensus cannot be reached within the QALC on matters relating to aviation safety or operations, the QAC will consider any recommendation on the issue in dispute that the Mediator or Chairperson may make and will formally advise the Chairperson within 10 working days of its decision in respect to any such recommendation and the reasons for its decision. On matters not relating to aviation safety and operations QAC will abide by the mediator's recommendation.

### 3. NOISE MONITORING

#### 3.1

- i. Aircraft noise shall be measured, predicted and assessed in accordance with NZS 6805:1992 Airport Noise Management and Land Use Planning and NZS6801:2008 Acoustics – Measurement of Environmental Sound, by a person suitably qualified in acoustics.
- ii. The terms ANB, OCB, ASAN, 2037 Noise Contours and Indoor Design Sound Level shall be as defined in the District Plan.
- iii. The term Annual Aircraft Noise Contours (**AANC**) shall be defined as the annual  $L_{dn}$  contours 55 dB, 60 dB, and 65dB that have been derived using airport *noise* prediction software to be determined by the QALC in accordance with this NMP and records of actual aircraft movements for the busiest three consecutive months of the preceding year.
- iv. The term Compliance AANC shall be defined as the ANNC adjusted for any differences between measured noise levels and calculated noise levels.
- v. The term Projected AANC shall be defined as the Compliance AANC adjusted for annual growth estimated for the following year based on trends derived from historical aircraft movement data.
- vi. If NZS 6805:1992 is superseded by a revised or new standard, the adoption of this revised/new standard in place of NZS 6805:1992 shall be at the discretion of Queenstown Airport Liaison Committee (**QALC**).

3.2 Each year, QAC, shall produce 55 dB, 60 dB and 65 dB AANCs, using airport noise prediction software AEDT and records of actual aircraft movements for the busiest three consecutive months of the preceding year. QALC shall have the discretion to require future predictions to be modelled using new or improved software which supersedes AEDT or INMv7a.

3.3 At least every three years, QAC shall undertake a monitoring programme to compare the measured aircraft noise levels with the AANC. The AANCs shall be corrected for any differences arising from the measured levels to produce the Compliance AANCs. The monitoring programme shall include the following measurements within a three-year period: a minimum of one month summer and one month winter undertaken at a minimum of three points located west, *north-east* and south of the airport with the exact positions to be determined by the QALC under this NMP.

3.4 Each year the Compliance and Projected AANC shall be reported to the QALC. Compliance AANC produced for years when noise measurements have not been undertaken shall be prepared using the same corrections determined from the most recently measured aircraft noise levels undertaken in accordance with section 3.3.

3.5 The Airport shall be managed so that the noise from aircraft operations does not exceed 65 dB  $L_{dn}$  outside the Air Noise Boundary (**ANB**) or 55 dB  $L_{dn}$  outside the Outer Control Boundary (**OCB**). The ANB and OCB are as shown on the

District Plan Maps. Compliance with the ANB and OCB shall be determined on the basis of the Compliance AANC.

**NON – COMPLIANCE WITH ANB AND OCB**

3.6 In the event that monitoring determines that noise levels at Queenstown Airport have exceeded the ANB and OCB as shown on the District Planning Maps, the following procedures will be followed:

1. QAC will immediately advise the QALC and the QLDC of the non-compliance event. QAC shall provide a report by a person suitably qualified in acoustics stating the extent of the non-compliance and its significance.
2. QAC will investigate the source and reason for the non-compliance event(s). This will include identifying whether it was a result of human error, mechanical fault or non-conformity with the NMP.
3. QAC will also determine whether the non-compliance event(s) is part of a broader trend or pattern of events.
4. If necessary QAC will meet with the airport operators concerned and jointly identify possible mitigation measures.
5. QAC will produce a report outlining the outcome of its investigation into the non-compliance event(s).
6. A review of the report, and any recommendations or mitigation proposed by QAC, will be undertaken by the QALC.
7. QAC will take all practicable steps to:
  - remedy the non-compliance.
  - ensure that another non-compliance does not occur.
  - NOTE: the actual remedial method will be determined in the event of a non-compliance.

## 4. ENGINE TESTING RULES

- 4.1 Aircraft operators are required to carry out maintenance procedures on aircraft and their engines. These procedures may require mandatory engine testing before the aircraft can fly again. This is referred to as 'engine testing'. Ground testing of aircraft engines 'on the wing' is carried out on the runway and taxiway areas at Queenstown Airport. This involves taxiing or towing the aircraft to the required test area (as directed by Air Traffic Control) and testing the engines at various power levels.
- 4.2 The duration and type of 'on the wing' testing varies widely. Testing may arise due to the need to test replacement components, troubleshoot a defect, or for routine systems testing. Generally on modern aircraft the majority of this testing is carried out at an 'idle' thrust setting. Occasionally it is necessary to increase the engine power to full thrust. If a full thrust test is required there would typically be 2 or 3 high power runs, each of about 3 minutes duration. The remainder of the time comprises lower power or idle running.
- 4.3 Section D.1 of Appendix A1 of the District Plan sets out the conditions for aircraft engine testing 'on the wing' at Queenstown Airport. These conditions are as follows:

*Sound from activities, which are outside the scope of NZS 6805:1992, shall comply with the District Plan noise limits set in the zone standards for each zone in which the sound is received. This requirement includes engine testing other than for essential unplanned engine testing of aircraft for scheduled passenger services.*

*No noise limits shall apply to essential unplanned engine testing of aircraft for scheduled passenger services. The NMP shall detail noise management practices for unplanned engine testing including preferred locations and times. Following each unplanned engine test the QAC shall report to the next meeting of the QALC why the testing was required and what noise management practices were followed.*

- 4.4 There are two locations an engine test will be conducted at Queenstown Airport; on the aircraft stand and on the runway.
- 4.5 A test on stand will generally only take the engine through to a lower-level power setting (the exact setting determined by the aircraft engineer). Such tests may be conducted during an aircraft turn around and as such will take place during scheduled hours of operations.
- 4.6 A full engine test/run requiring higher level power settings to be tested would be conducted on RWY23, and, outside an emergency event, full engine testing could occur at any time, 24 hours a day, to return the aircraft to service as quickly as possible. They would be extremely uncommon in nature.

## 5. COMPLAINTS PROCEDURES

### INTRODUCTION AND PURPOSE

- 5.1 The purpose of this section is to outline QAC's standard protocols for recording, responding to, and reporting on any noise complaints it may receive from the community in relation to aircraft operations, engine testing activities and any other noise generating activities at Queenstown Airport.
- 5.2 In addition to the above, the objective of this procedure is to provide local residents and the community with a mechanism to report any complaints or concerns regarding noise from aircraft operations, engine testing activities or any other noise generating activities at Queenstown Airport. QAC also acts as a conduit for complaints of aircraft noise outside the airport environment.

### LODGING A COMPLAINT

- 5.3 The general public can call the QAC at any time if they wish to register a noise complaint by contacting **(03) 450 9031** or submit a complaint via the Queenstown Airport website. Details for lodging a noise complaint will be displayed in a prominent location on the website for Queenstown Airport and recorded in a complaints log able to be viewed at any time by members of the QALC and QLDC.
- 5.4 Callers will be asked to provide the following details:
- Name of Complainant;
  - Contact Details of Complainant;
  - Location of Complaint;
  - Date and Time of the incident given rise to the complaint;
  - Nature of Complaint (i.e. jets flying overhead, helicopter circuits); and
  - Any identifying features of the aircraft such as colour, type, registration, etc.
- 5.5 Within 48 hours of the first working day after receiving the complaint, the complaint will be investigated by the QAC Noise Administrator who will also add any information they have available as to the cause of the noise complaint, such as weather conditions and runways in use at the time of the complaint.

### INVESTIGATIONS

- 5.6 The Noise Administrator will respond to the complaint with an initial acknowledgement (letter, email or phone call) to the complainant and then investigate the complaint further. A copy of the complaint and correspondence arising from it shall be forwarded to the Queenstown Lakes District Council.
- 5.7 The investigation will attempt to identify the cause of the noise event in question. One example may be a noise complaint related to an aircraft movement. In this case the investigation will attempt to identify the flight in question based on the information collected when the initial complaint was received (i.e. time of day, location of complainant) and any noise or flight data available for the period in question. With this approach the Noise Administrator may identify which flights have travelled over, or close to, the area of concern to

the complainant, whether these flights or flight paths were expected, and whether the flights were in accordance with any relevant CAA flight and / or agreed protocol.

- 5.8 If a breach of CAA rules is suspected or the circumstances are particularly unusual the QAC will refer the matter to the airport user concerned for comment before responding to the complainant.

### **REPORTING**

- 5.9 A written response outlining the conclusion of the investigation undertaken by the Noise Administrator and any remedial or mitigation measures that may be implemented, if necessary, will be provided to the complainant within 20 working days. The complainant will be invited to attend the next meeting of the QALC.
- 5.10 In addition to the above, the QALC will review the complaints register and associated responses from the QAC at all of its meeting as a matter of general business. If necessary, the QALC will consider and recommend appropriate remedial or mitigation measures for on-going or unresolved complaints.
- 5.11 Any complainant unhappy with the outcome of the response or investigation into their complaint can contact one of the community representatives on the QALC to follow up the matter further.
- 5.12 If the investigation identifies that there has been non-compliance with the ANB and OCB as shown in the District Planning Maps, the procedures to be followed are set out under section 3.6.

## **6. CONSIDERATE FLYING PRACTICES**

6.1 The terrain around Queenstown Airport provides for a challenging flying environment and there is limited ability to deviate from flight tracks. The main focus of pilots and airlines is on safe flying practice. As a result of this, considerate flying practices are limited in their application for scheduled heavy aircraft, however there is some scope for promoting considerate flying practices for general aviation or helicopters.

6.2 Where practicable QAC will encourage the promotion of considerate flying practices, subject to CAA rules and other safety procedures. The aim is to ensure awareness of noise issues amongst pilots and operational procedures for the benefit of neighbours of Queenstown Airport by minimising the impact of flying activities on the community. It is essential to note that considerate flying practices should not in any way usurp CAA rules or Air Traffic Control clearances or other safe flying practices at Queenstown Airport.

### **OVERALL CONCEPT**

6.3 As outlined in section 2.11 above Queenstown Airport is located within close proximity to residential and commercial development, most notably the community of Frankton. Given this, there is potential for residents below the flight paths and near the airport to be adversely affected by noise emanating from the airport or aircraft.

### **SPECIFIC OPERATIONAL CONSIDERATIONS**

6.4 Pilots in command of fixed wing aircraft (general aviation traffic) will be encouraged by QAC to observe the following:

1. All take-offs shall use the identified starting point of runway.
2. The operational procedures that the QAC has developed in conjunction with the Airways Corporation of New Zealand to mitigate noise from aircraft taking off from crossing runway 14.
3. Houses should not be used as a reference point for training or other manoeuvres.
4. Activities such as simulated forced landings, glide approaches and simulated engine failure after take-off should only be conducted in specially designated areas or restricted to runways that do not have built up areas under the flight path.
5. Engine testing operations shall be carried out in accordance with section 4 of this NMP and section D.1 of Appendix A1 of the District Plan.

6.5 Pilots in command of helicopters will be encouraged by QAC to observe the following:

1. Houses should not be used as a reference point for training or other manoeuvres.
2. Hover training is only permitted on designated runways.
3. Sling load training is not permitted on the airfield.
4. Helicopters with noisy characteristics should use take off techniques which achieve the maximum height possible prior to crossing the Queenstown Airport boundary.
5. Where it is practicable to do so, refer to the flight tracks as shown in **Annexure 3 Flight Tracks**.

### **COMMUNICATION OF CONSIDERATE FLYING PRACTICES**

- 6.6 QAC will monitor considerate flying practices through observation of the pilots operating out of Queenstown Airport. Where issues are evident, or brought to the attention of QAC (i.e. through the complaints procedure), these will be brought to the attention of the pilot and / or aircraft operator concerned. Where necessary, mitigation practices will be agreed by the QAC and the aircraft operator concerned. These agreed mitigation practices will also be reported to the QALC.



## 7. NOISE MITIGATION PLAN

### INTRODUCTION

- 7.1 This section of the NMP outlines the measures that will be undertaken by QAC to progressively mitigate the potential noise effects on existing ASANs within the ANB and the 2037 60 dB Noise Contour.
- 7.2 The purpose of this Noise Mitigation Plan is to inform the way the QAC offers mitigation to address these effects.
- 7.3 It is generally accepted (and recommended in NZS 6805) that ASANs within 65 dB  $L_{dn}$  should be provided with noise mitigation. QAC has also agreed to provide mitigation out to 60 dB  $L_{dn}$ .
- 7.4 It is also widely accepted that 40 dB  $L_{dn}$  is an appropriate Indoor Design Sound Level for critical listening environments within ASANs. The degree of mitigation required to achieve this objective varies depending on the external noise level and the condition of the building which houses the ASAN.
- 7.5 What has been found from practical sound insulation studies around other New Zealand airports, is that the level of mitigation can readily be grouped into three bands based on the external noise levels as follows;
- Houses located between 55.0 to 58.0 dB  $L_{dn}$  – will generally achieve 40 dB  $L_{dn}$  inside with windows slightly ajar.
  - Houses located between 58.0 to 65.0 dB  $L_{dn}$  – will generally achieve 40 dB  $L_{dn}$  inside with windows closed and thus mechanical ventilation is required to provide an alternative form of ventilation.
  - Houses located between 65.0 to 70.0 dB  $L_{dn}$  – will generally require additional sound insulation (window seals, extra plasterboard and batts) and also mechanical ventilation to achieve 40 dB  $L_{dn}$  inside.

### PROGRESSIVE MITIGATION

- 7.6 The noise level at Queenstown Airport is predicted to increase as air traffic increases over time out to the year 2037.
- 7.7 The approach adopted for the implementation of mitigation is thus based on when a certain noise level (generally either the 65 or 60 dB Projected AANC) reaches a particular property, in which case mitigation is offered to the property owner. As discussed, QAC has agreed that for Queenstown this noise level should be when (or just before) the 65 or 60 dB Projected AANC reaches the property. It is anticipated that as 2037 approaches, the 65 and 60 dB Projected AANC will near and possibly meet the ANB and 2037 60 dB Noise Contour (respectively).
- 7.8 The mitigation can be implemented in two stages based on the noise bands discussed above. In particular when the 60 dB Projected AANC reaches a property, in which case only a mechanical ventilation system needs to be

offered for installation initially, as this allows the occupant to close the windows and meet the Internal Design Sound Level.

- 7.9 If and when the 65 dB Projected AANC reaches a property, sound insulation treatment needs to be offered for installation to complement the ventilation system. Thus a progressive approach is being taken by QAC in order to appropriately mitigate the noise in terms of the indoor environment as the noise reaches each ASAN.
- 7.10 The level of sound insulation to be installed in the particular house must be calculated on the future (2037) level of noise, not the Projected *65 or 60 dB* AANC that has just reached the property, as it is not practical to incrementally install mitigation as the noise level gradually increases. The implementation of this mitigation procedure is described below and in the Aerodrome Purposes Designation 2.

### **IMPLEMENTATION OF MITIGATION**

- 7.11 The progressive approach to be adopted by QAC in mitigating potential noise effects is set out below:
- 7.12 Each year QAC shall produce 55 dB, 60 dB and 65 dB Projected AANC using the same airport noise prediction software as used for the Compliance AANC, with an appropriate growth projection factor applied, for the purposes of informing the mitigation offers specified below.

#### **Within the ANB**

- 7.13 Each year the QAC shall offer to provide 100% funding of noise mitigation for Critical Listening Environments of buildings that existed on 9<sup>th</sup> May 2013 containing an ASAN that are within the 65 dB Projected AANC. This offer may be earlier at QAC's discretion. The mitigation shall be designed to achieve an Indoor Design Sound Level of 40 dB  $L_{dn}$  or less, based on the 2037 Noise Contours contained in the NMP.

#### **Within the 2037 60 dB Noise Contour**

- 7.14 Each year the QAC shall offer to provide 75% funding of mechanical ventilation for Critical Listening Environments of buildings that existed on 9<sup>th</sup> May 2013 containing ASAN that are within the 60 dB Projected AANC. This offer may be earlier at QAC's discretion. Where a building owner accepts this offer they shall not be eligible for further funding of mechanical ventilation if the building later becomes within the 65 dB Projected AANC, but they shall become eligible for 100% funding of any sound insulation required.
- 7.15 Mechanical ventilation shall be in accordance with **Annexure Two** of this NMP. Refer also Appendix 13, Table 2 of the District Plan.
- 7.16 Alternative mitigation strategies may be adopted by agreement of QAC and the building owner.

- 7.17 QAC shall be responsible for any structural or other changes required under the Building Act or otherwise to enable the installation of the acoustic treatment and mechanical ventilation. QAC shall not be responsible for any structural or other changes required to comply with building regulations or otherwise that applied when the building or relevant part was constructed.

### **Covenants**

- 7.18 QAC shall only be obliged to carry out any work pursuant to clauses 7.12 – 7.15 above if the affected property owner(s) agrees to enter into a covenant with QAC (that shall be registered on the property's certificate of title) to the effect that:

- The owners and occupiers of the property are aware that the property may be subject to increased levels of aircraft noise and any complaint arising from noise related activities at the Airport shall be dealt with in accordance with the complaints procedures set Section 5 of this NMP; and
- The owners and occupiers of the property will not remove or in any way lessen the effectiveness of the acoustic insulation and/or mechanical ventilation that is installed by QAC without its prior approval.

- 7.19 QAC will cover all reasonable legal costs of affected property owners associated with the development and registration of covenants on the titles of properties.

### **Process**

- 7.20 The following process will be followed:

1. QAC will be responsible for obtaining all necessary building consents and/or resource consents required for the installation of the acoustic insulation and / or mechanical ventilation mitigation required.
2. QAC will liaise with the affected property owner and / or tenant in relation to a suitable time for QAC's contractor to install the acoustic insulation and mechanical ventilation in the affected property.

### **GOOD FAITH NEGOTIATIONS**

- 7.21 It should be acknowledged that the measures outlined above will be offered to the owners of existing ASAN as the 60 and 65 dB Projected AANC reaches their property. QAC cannot compel or require property owners to partake in the mitigation measures that are offered. Non acceptance of a QAC offer by any one or more property owners will not result in restrictions on the full utilisation of the ANB or OCB Boundaries.

- 7.22 Any offer made in accordance with 7.13 and 7.14 of this NMP remains open for acceptance for a period of 12 months. If the landowner declines the offer, this shall be recorded by QAC. If, at a later date that landowner wishes to take up the offer, the landowner shall notify the QAC of its desire to do so. The QAC

shall determine whether it will make the offer available again and shall communicate the reasons for its decision to the landowner. Acceptance of the request by the QAC shall not be unreasonably withheld. QAC shall monitor change of ownership records and if owner of the property subsequently changes and the offer made above was not taken up by the landowner at that time, the QAC shall offer the new landowners funding in accordance with 7.13 and 7.14 of this NMP. In these circumstances the offer will remain open for acceptance for a further 12-month period.

- 7.23 QAC should, however, provide the QALC with a complete list of any property owners who have chosen not to take up the mitigation measures offered, along with a record of correspondence with the property owner.

### **MONITORING OF NOISE MITIGATION**

- 7.24 In recognition of the importance of the noise mitigation works to ensuring that occupiers of existing ASANs within the ANB or 2037 60dB Noise Contour are not unduly affected by operations at Queenstown Airport, it is appropriate that monitoring of the effectiveness of the noise mitigation works is undertaken by QAC. Given this, QAC shall retain an acoustic consultant to establish a monitoring programme that is designed to confirm the effectiveness of the on-going monitoring programme.

- 7.25 The results of the monitoring programme will be provided to QAC and the QALC. The QALC may provide comments to the QAC on the effectiveness of the programme.

### **ALTERNATIVES TO THE NOISE MITIGATION PLAN**

- 7.26 Property owners may make an application to QAC proposing alternative acoustic insulation and mechanical ventilation mitigation. The alternative will only be considered acceptable by QAC if the following is achieved:

1. The alternative acoustic insulation and mechanical ventilation mitigation achieves an Indoor Design Sound Level of 40 dB L<sub>dn</sub> in Critical Listening Environments and/or provides suitable airflow circulation to the level specified in Annexure 2 to enable windows and doors to remain closed; and
2. The cost of the alternative acoustic insulation and mechanical ventilation mitigation proposed by the property owner is no greater in cost than the mitigation proposed by QAC in sections 7.13 – 7.15 above; or
3. The property owner enters into a contract with QAC agreeing to cover the additional cost of the alternative acoustic insulation and mechanical ventilation mitigation in addition to that allowed for in the mitigation proposed by QAC in sections 7.13 and 7. 15 above; and
4. The property owner agrees to the covenants on the title property to the effect outlined in section 7.19 and 7.20 above.

5. Calculations of sound insulation to meet 40 dB L<sub>dn</sub> shall be based on the external noise levels shown in the District Plan and shown as 1dB contours in the 2037 Noise Contours attached to this NMP. The calculations and reporting thereof shall be carried out by a person suitably qualified in acoustics.

7.27 QAC will also forward all applications for alternative acoustic insulation and mechanical ventilation mitigation to the QALC for comment where appropriate.

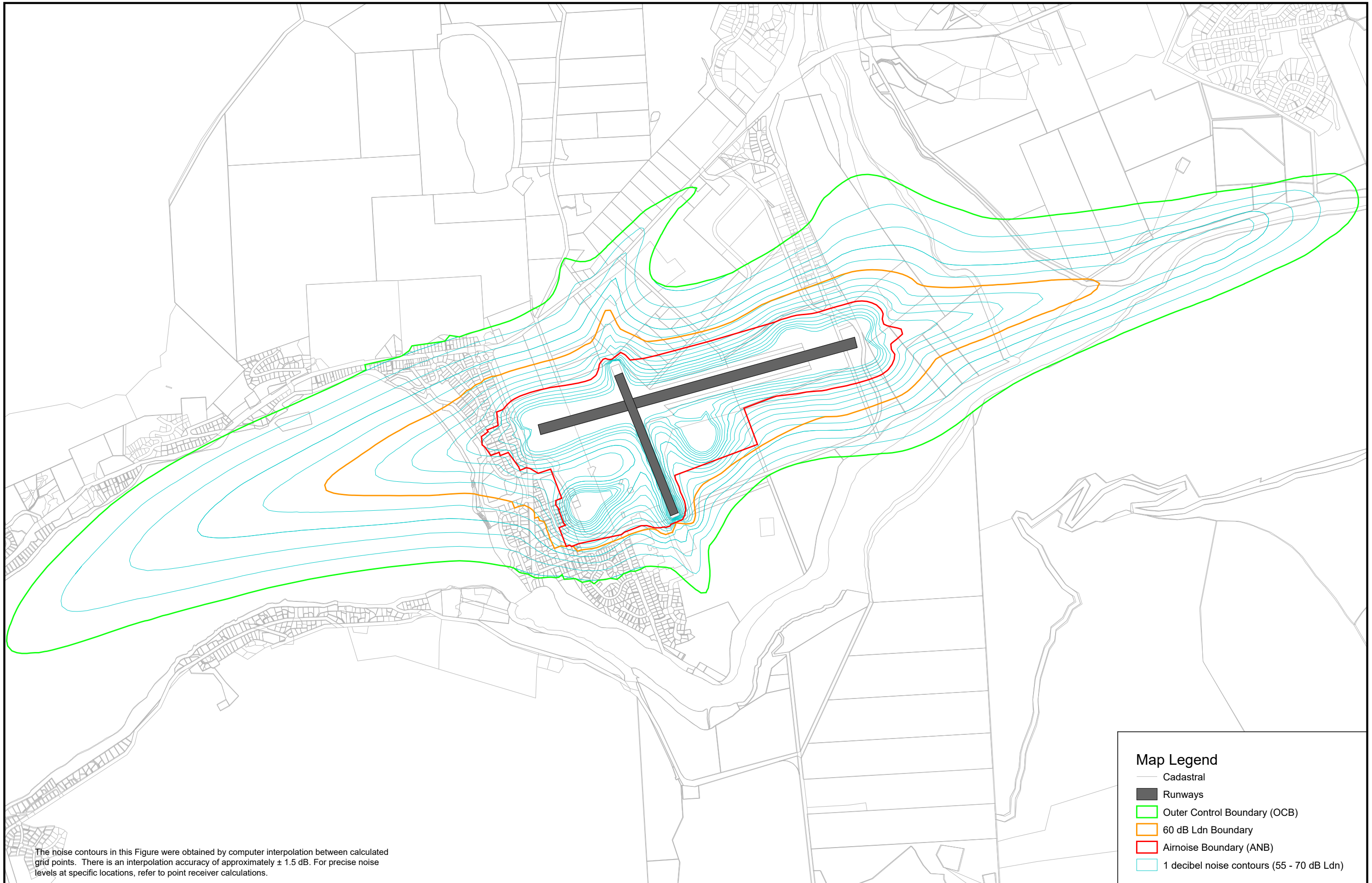
### **DISPUTE RESOLUTION**

7.28 The QAC is committed to the implementation of acoustic insulation and mechanical ventilation mitigation in all existing ASANs within the ANB and offering to fund 75% of the cost of installing mechanical ventilation within the 2037 60dB Noise Contour. Both measures are intended to provide mitigation that is cost effective, efficient and reasonable for the community surrounding Queenstown Airport. QAC recognises that there may be occasions where a dispute with an affected property owner does emerge in relation to the Noise Mitigation Plan. In these circumstances the following procedure will be utilised:

1. Any dispute arising between the QAC and the affected property owner(s) in respect of, or in connection with, this Noise Mitigation Plan (whether concerning the construction of this plan, or the rights, duties or liabilities of the parties arising or however arising) (Dispute) shall be endeavoured to be settled amicably and without recourse to litigation and any such Dispute shall be determined in accordance with the procedure set out in section 7.28 (2), (3) and (4) below.
2. In the event of a Dispute, the parties shall, without prejudice to any other right or entitlement they may have, immediately explore in good faith whether the Dispute can be resolved by agreement between them using informal and private dispute resolution techniques such as negotiation, mediation, independent expert appraisal or any other alternative dispute resolution technique.
3. The rules governing any alternative dispute resolution technique adopted by the parties shall be agreed between the parties or, if no agreement is reached within five working days of notification by any party of a Dispute, then by such procedure as is selected by the chairman of the New Zealand Chapter of Lawyers Engaged in Alternative Dispute Resolution (**LEADR**).
4. The parties agree to use their best endeavours to achieve resolution of any Dispute in the manner contemplated by this clause and neither party will initiate other legal proceedings without first pursuing such informal alternative dispute resolution techniques.

# **ANNEXURE ONE**

## **Noise Control Boundaries**



The noise contours in this Figure were obtained by computer interpolation between calculated grid points. There is an interpolation accuracy of approximately  $\pm 1.5$  dB. For precise noise levels at specific locations, refer to point receiver calculations.

**Map Legend**

- Cadastral
- █ Runways
- █ Outer Control Boundary (OCB)
- █ 60 dB Ldn Boundary
- █ Airnoise Boundary (ANB)
- █ 1 decibel noise contours (55 - 70 dB Ldn)



# **ANNEXURE TWO**

## **Ventilation Table**



## Ventilation Requirements

The following table sets out the ventilation requirements within the airport Outer Control Boundary (OCB) and Air Noise Boundary (ANB).

Room Type	Outdoor Air Ventilation Rate (Air Changes per Hour, ac/hr)	
	Low Setting	High Setting
Bedrooms	1-2 ac/hr	Min. 5 ac/hr
Other Critical Listening Environments	1-2 ac/hr	Min. 15 ac/hr
Noise from ventilation systems shall not exceed 35 dB $L_{Aeq(1 \text{ min})}$ , on High Setting and 30 dB $L_{Aeq(1 \text{ min})}$ , on Low Setting. Noise levels shall be measured at a distance of 1 m to 2 m from any diffuser.		
Each system must be able to be individually switched on and off and when on, be controlled across the range of ventilation rates by the occupant with a minimum of 3 stages.		
Each system providing the low setting flow rates is to be provided with a heating system which, at any time required by the occupant, is able to provide the incoming air with an 18 °C heat rise when the airflow is set to the low setting. Each heating system is to have a minimum of 3 equal heating stages.		
If air conditioning is provided to any space then the high setting ventilation requirement for that space is not required.		

# **ANNEXURE THREE**

## **Flight Tracks**

### **Note pertaining to Flight Tracks**

Please note that flight tracks are updated every two months and published in the Aeronautical Information Publication New Zealand. For the most up to date information about flight tracks, please refer to the following website:

[www.aip.net.nz](http://www.aip.net.nz)