

# **Contents** Why are we proposing noise changes? Summary of proposed noise changes Responding to growth What does this mean for our noise boundaries? Detailed overview of proposed noise changes Our noise management activities 19 Next steps 20 Tell us what you think

## Why are we proposing noise changes?

Queenstown Airport has experienced unprecedented growth over the past five years. Annual passenger arrivals and departures have increased from 600,000 in 2005 to just over 2 million in early 2018.

Queenstown and the broader region have been and continue to be attractive places for people to live, work and play. Our demand forecasting shows that scheduled passenger arrivals and departures at Queenstown Airport could reach 3.2 million by 2025 and rise to 7.1 million by 2045. The number of flights (both scheduled airlines and general aviation) could also increase significantly over that time.

Queenstown Airport Corporation's (QAC) role is to support regional growth by providing sustainable air transport connectivity and a world-class airport experience, together with seamless connections to the communities we serve. We also need to ensure that we continue to be a good neighbour with a strong social, economic and environmental focus.

We are managing the airport's expected growth (driven by resident and visitor growth) by planning ahead to understand and shape what infrastructure and services need to be provided at the airport and when, and how these developments could be funded. Last year we released our 30-Year Master Plan options for community discussion and feedback. As a result of this work we are only proposing to plan for growth of up to 5.1 million passengers per annum over a 30-year period. This more sustainable growth profile would bring a range of benefits to the region.

At the time, we said we needed to do more work to understand the key constraints on the future growth of Queenstown Airport – land, noise and destination infrastructure. That work has progressed and we are now able to share with you our findings on noise and potential effects on the airport's noise boundaries.

The current noise boundaries in the District Plan were first notified in 2009. It was anticipated at that time that these boundaries would accommodate growth in aircraft movements at the airport up to 2037. We are now forecasting that aircraft movements will likely reach the current noise boundaries well before then. The simple reason is unprecedented and sustained growth – past, present and future.

We are proposing to make some changes to our current noise boundaries in the District Plan to help ensure that we can continue to deliver sustainable, long-term air connectivity at Queenstown Airport and achieve the goals set out in the Master Plan options work.

This document outlines the proposed changes, how the potential effects of aircraft noise would be managed and how you can get involved to share your feedback on these proposed changes.



#### **WE NEED YOUR INPUT**

It's important that the community gets involved so we can work together to help shape our future.

We want a result that is sustainable for our customers, stakeholders and the communities that we serve.

One that allows for growth and the benefits that go along with that growth, while managing and mitigating the effects that arise from airport operations.

We are committed to working with our neighbours most affected by aircraft noise to ensure that these effects are appropriately addressed.

#### JOIN THE CONVERSATION



Ask a question, find out more and have your say at our.queenstownairport.com



Come along to one of our community drop-in sessions to find out more and chat to our team. Session details are available at our queen stown airport.com

## Summary of proposed noise changes

## CHANGES TO THE NOISE BOUNDARIES

The current noise boundaries provide for 21,000 scheduled aircraft movements\* per annum. Forecasts now indicate the current limit of movements will be reached in the next 3–4 years. The proposed expansion of the noise boundaries would allow the airport to sustainably plan for 41,600 scheduled aircraft movements (approximately 5.1 million passenger movements) per annum by 2045.

\*1 aircraft take-off = 1 movement and 1 landing = 1 movement

## 2 CHANGES TO THE AIRPORT DESIGNATION

These changes would extend QAC's noise mitigation obligations to cover a greater area of land around the airport, matching the relevant expanded noise boundaries.

## 3 CHANGES TO THE DISTRICT PLAN

These changes would provide for a new 'aircraft noise' chapter in the District Plan to bring all Queenstown and Wanaka Airport information together in one place. Updated rules are also proposed to discourage and avoid new activities sensitive to aircraft noise (ASAN) within the noise boundaries and ensure that extensions or new builds in existing residential zones around the airport are built at a standard to mitigate the effects of aircraft noise.

For more detailed information refer to pages 12-17.

#### SO WHAT DOES THIS MEAN?

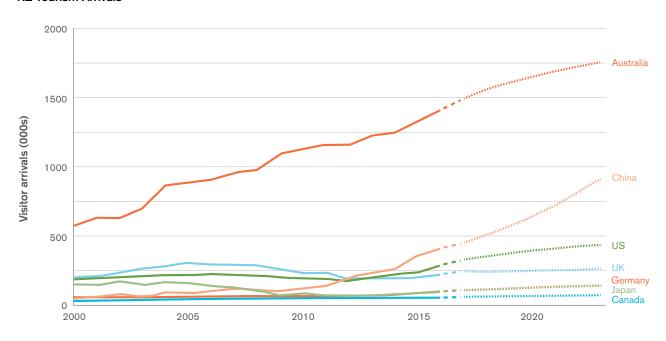
- We are not proposing to increase our current operating hours of 6am-10pm
- We are proposing to increase the number and frequency of flights within the operating hours of 6am–10pm
- The increase in noise is not due to aircraft being louder, but that the increased number of aircraft will mean that more overall noise will be experienced
- · We are committed to managing the effects of this noise for the community as much as possible
- We are keen to seek your views and understand what you see as the potential positive and negative
  effects that arise from our proposal
- Following public consultation and consideration of your feedback, QAC will put a proposal to QLDC for there to be a variation made to the District Plan

## Responding to growth

National tourism growth has increased steadily for a number of years and is projected to continue. There has also been significant regional growth, with both visitor numbers and the residential population increasing, which has resulted in strong, sustained historical and projected growth for Queenstown Airport.

#### **NATIONAL TOURISM GROWTH**

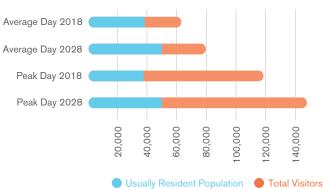
#### **NZ Tourism Arrivals**



Source: MBIE

#### **REGIONAL TOURISM AND POPULATION GROWTH**

## Queenstown Lakes Visitor and Resident Growth Projections



#### **Peak Day Population Growth**

		Wanaka	Wakatipu	Whole District
	2018	46,939	70,411	117,349
	2028	59,638	89,389	149,024
	2038	74,937	117,792	192,729
	2048	82,069	131,320	213,389

Source: QLDC Growth Projections to 2058, May 2017

### QUEENSTOWN AIRPORT GROWTH – SCHEDULED PASSENGER MOVEMENTS

- Sustained period of growth since 2005
- 2.05 million passenger movements for the 12-month period to February 2018

Passenger Movements (millions)

2045
2035
2031
2025
3.2
2018
2.05
2005
0.6

#### **Scheduled Aircraft Movements** 2045 55,000 Forecast 2035 47.000 2031 41,600 2025 25.000 2018 15,700 13,000 2005 8,000 International flights Domestic flights

 Based on demand forecasts, we could reach 41,600 scheduled aircraft movements (or approximately 5.1 million passenger movements) per annum by 2031 but are planning to manage growth so that it will be realised by 2045.

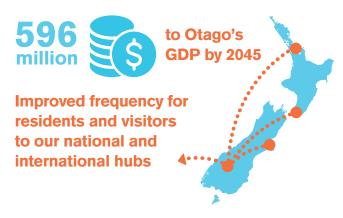
### AIRCRAFT AND PASSENGER MOVEMENTS EXPLAINED

Airports report passengers and aircraft as "movements".

- Passenger movements count both arrivals and departures i.e. 1 passenger is counted as 2 movements – their arrival and then their departure. This means that the actual number of visitors/residents arriving into the region via the airport is approximately half the number of passenger movements.
- Aircraft movements count both take-offs and landings i.e. 1 take-off = 1 movement and 1 landing = 1 movement

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#### THE BENEFITS OF GROWTH



Increase in 4,000 employment opportunities

Source: NZIER Aug 2017





Less pressure on regional roads

#### **ZQN TODAY AT A GLANCE**





busiest NZ airport by passenger numbers



**700** 

staff employed across 60 tenant businesses



58,916

take-off and landings per annum for all aircraft



\$7.2m

shareholder dividend in FY17



\$5.4m

back to the QLD community (\$224 per rateable property)

#### WHAT'S THE RIGHT GROWTH TARGET?

How did we come to the number 5.1 million passengers per annum by 2045? We wanted to strike a balance between the potential growth of the airport and regional economy and the effects of that growth and increased passenger numbers on the community.

During the master planning process, our analysis showed potential customer demand of around 7 million passenger movements (3.5 million visitors/residents) each year by 2045. The next stage was translating the demand forecasts into noise profiles based on increased aircraft movements and the subsequent effects of aircraft noise. We considered all of these factors and reached the conclusion that neither 7 million nor 6 million passenger movements per annum was sustainable, both from a growth and noise effects perspective, for the community or the airport.

Air connectivity is vital to allow resident and visitor movements in and out of our remote region.

Our current view is that, with appropriate planning and efforts to manage growth and mitigate noise, growth of up to 5.1 million passenger movements per annum (2.5 million visitors/residents) over the next 30 years could be a more sustainable and realistic long term growth target both for Queenstown Airport and the community.

This level of growth would allow the region to plan for and sustainably manage future growth, which would bring positive effects such as economic development, employment opportunities, and improved frequency of flights for residents and visitors to national and international hubs, while working to preserve residents' quality of life and the visitor experience.

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#### **CURRENT AND PROPOSED AIR TRAFFIC VOLUMES**

Because noise is determined by aircraft movements rather than passengers, we have modelled the forecast air traffic volumes to understand how this might look if the airport is ultimately able to provide for growth up to 5.1 million passenger movements per year:

#### **CURRENT**

#### SCHEDULED AIRCRAFT KEY STATISTICS

#### **ANNUAL AIRCRAFT MOVEMENTS**



(2.05 million passenger movements per year)



Busy hour: 11 movements (take-offs & landings)



Busy months: average 50 movements (take-off & landings) per day



Quiet months: average 30 movements (take-off & landings) per day



43,198

TOTAL 58,916

#### **PROPOSED**



(5.1 million passenger movements per year)



Busy hour: 16 movements (take-offs & landings)



Busy months: average 145 movements (take-off & landings) per day



Quiet months: average 91 movements (take-off & landings) per day

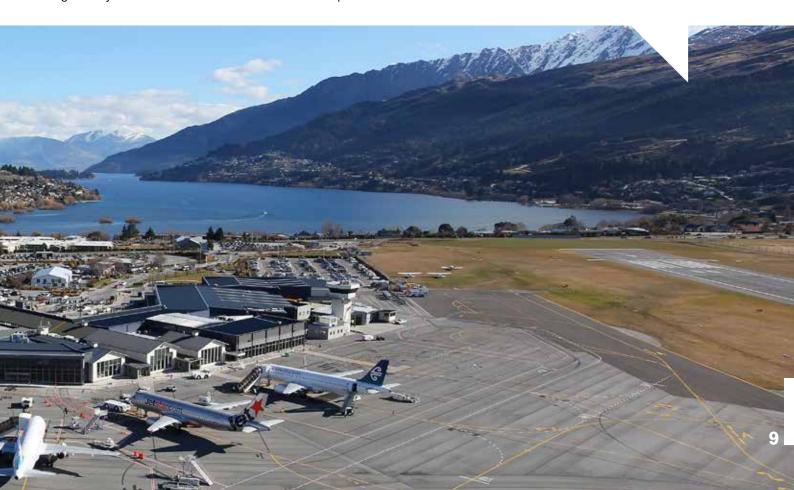


Scheduled 41,611

General aviation 48,806

**TOTAL** 88,417

Whilst current general aviation activity is higher in movement numbers than scheduled aircraft, it generally contributes significantly less to the total noise emissions from the airport.



#### MANAGING GROWTH AND ITS IMPACTS

## We are currently undertaking a broad range of activities to help respond to and manage growth at the airport and its associated effects on the community:

- 1. Planning for the long-term
- We have been developing a 30-year Master Plan for Queenstown Airport to facilitate sustainable long-term growth for the region. Last year we released some options and sought local, regional and national feedback to help inform our decisionmaking. You can read the full summary document at www.queenstownairport.co.nz/masterplan.
- 2. Committing to the development of Wanaka Airport and dispersing regional growth
- We plan to develop Wanaka Airport in a complementary way to Queenstown Airport.
- We have had an indication through the Queenstown
  master planning process to date that the Wanaka
  community is broadly supportive of scheduled air
  services returning to the area, but we need to do more
  work to get a deeper understanding of the opportunities,
  issues and considerations relevant to Wanaka Airport.
- Over the next 18 months we will be working with our communities and stakeholders on a long-term vision for Wanaka Airport and developing a Wanaka Master Plan which explores feasible opportunities and detailed analysis. Through this process we will gain a better understanding of how much demand could and should be accommodated at Wanaka Airport
- 3. Looking after our neighbours while providing for general aviation activities
- All options looked at during the master planning for Queenstown Airport relocate ground-based general aviation (fixed wing and helicopter) activities away from the established Frankton residential area to help mitigate the effects of this noise on our closest neighbours.

- The airport and general aviation operators have established a 'Fly Neighbourly' programme which promotes considerate flying practices over residential areas, subject to CAA rules and other safety procedures. The procedures are part of the pilot education and induction programmes within each company.
- General aviation operators are encouraged to replace their older fleet with larger, quieter modern aircraft.
- 4. Managing flight schedules/operations
- We are working with airlines to spread flight schedules to utilise our full operating window.
- 5. Working with key partners and stakeholders to manage the effects of growth
- We are working with local, regional and national partners on initiatives to help manage the effects of growth. These include transport initiatives with QLDC, ORC and NZTA via the Regional Transport Governance Group, sustainability initiatives with airport and community partners, and contributing to Shaping Our Future forums.
- 6. Caring for our people, prosperity and place
- We are committed to being a responsible airport operator and this includes playing our part in building a strong, sustainable region and working hard to reduce or offset our effects. Our sustainability programme involves work we're doing on our own or with partners to provide social, economic and environmental value to the communities we serve.

#### Queenstown Airport Master Plan community feedback so far has shown some clear themes:

- Strong support (85%) for long-term planning and the master plan process to help inform development for the airport and the wider region.
- An appetite for growth but no clear consensus about whether 5.1 million passenger movements is a sustainable number; split views provided on whether that is too much or too little growth,
- or whether it is sustainable if regional infrastructure keeps pace with airport growth.
- Key concerns are destination infrastructure, transport and noise, particularly how the region could sustainably accommodate future growth while preserving residents' quality of life and the visitor experience.



## What does this mean for our noise boundaries?

#### WHAT ARE NOISE BOUNDARIES?

Noise boundaries are set in the District Plan by the council. The boundaries determine the amount of noise aircraft using the airport can make, as well as determining restrictions on different land uses within those boundaries. These boundaries also recognise and manage the effects of noise generated by aircraft.

Aircraft noise is managed and planned for using NZ Standard NZS6805 which follows international best practice.

Aircraft noise is quantified using the day/night level (dB  $L_{dn}$ ). The  $L_{dn}$  measures the 'noise energy' over the 24-hour day and then averages it using the busiest three-month period for the year.  $L_{dn}$  takes into account both the number of noise events and the loudness of each event to provide a measure of the 'noise exposure energy'.

- A 10dB penalty is added during night time hours (10pm to 7am) to account for increased sensitivity and sleep disturbance.
- For noise monitoring purposes, this means one flight between 10pm and 7am is equivalent to 10 flights during the day.
- The international measure used for aircraft noise is the Day/Night Level or L<sub>dn</sub>.

The key things to note about our noise boundaries are:

- The Queenstown Lakes District Plan includes maps of Queenstown Airport's noise boundaries.
- The noise generated from aircraft operations cannot exceed the levels identified by the noise boundaries.
- Two noise boundaries are included in the District Plan:
  - 1. An Air Noise Boundary of 65 dB Ldn
  - 2. An Outer Control Boundary of 55 dB Ldn
- Aircraft operations at the airport are managed so that the Day/Night Level from these operations is not more than
   65 dB L<sub>dn</sub> beyond the Air Noise Boundary or 55 dB L<sub>dn</sub> beyond the Outer Control Boundary.
- The airport also refers to a third noise boundary the 60dB L<sub>dn</sub> boundary – which is mainly used in relation to the airport's noise mitigation works programme. It identifies properties which receive a noise exposure from aircraft operations between 65 dB and 60 dB L<sub>dn</sub> and prompts the need for mitigation.

Noise boundaries provide a 'bucket' of noise that the airport is permitted to make. They identify where aircraft noise exposure can reach specified levels on the ground. The boundaries are based on the long-term future aircraft activity. Actual noise increases steadily over time with growth, but cannot go beyond the maximum limit set by the boundaries.





The decibel levels associated with the noise boundaries do not represent the noise from a single aircraft event. Instead, they combine all the noise energy from all aircraft movements over a long term (3-month) period. They take into account the number of events as well as the loudness of these events.

#### HOW ARE WE PROPOSING TO CHANGE THE BOUNDARIES?

Our proposed changes to the noise boundaries would cater for aircraft movements to enable approximately 41,600 aircraft movements (approximately 5.1 million passenger movements) per year to be reached over a 30-year period.

We believe this is a sustainable, long-term growth target for the airport.

The 3 options outlined in the draft master planning options summary document show how the infrastructure to support this growth can be accommodated at the airport.

The map on the following page shows the current and proposed noise boundaries. The **solid** lines represent the current operative noise boundaries. The **dotted** lines show the proposed expanded noise boundaries.

#### BEST PRACTICE FOR MANAGING THE EFFECTS OF AIRCRAFT NOISE

NZ Standard NZS6805 guides the management of aircraft noise in New Zealand. It recommends the following use of land surrounding commercial airports in New Zealand (note: the colours used in the table correspond to the coloured lines on the map showing the proposed new boundaries):

#### Inside 70dB L<sub>dn</sub> Noise Boundary

Avoid ASAN.

Consider acquiring properties to avoid the effects of aircraft noise on people.

### Between 70dB $L_{dn}$ Noise Boundary & Air Noise Boundary (65dB $L_{dn}$ )

Prohibit new ASAN.

Alterations and additions to **existing** ASAN should only be permitted if fitted with appropriate acoustic insulation.

**Existing** residential properties should be provided appropriate acoustic insulation (i.e. retrofitted).

### Between Air Noise Boundary & Outer Control Boundary (65dB $L_{dn}$ to 55dB $L_{dn}$ )

Prohibit new ASAN unless the District Plan already permits it, and then subject to appropriate acoustic insulation.

Alterations and additions to **existing** ASAN should only be permitted if fitted with appropriate acoustic treatment.

#### WHAT IS AN ASAN?

ASAN stands for Activities Sensitive to Aircraft Noise.













In the current District Plan, this includes residential activity, visitor accommodation, community activity and child care facilities, schools and certain areas of hospitals.









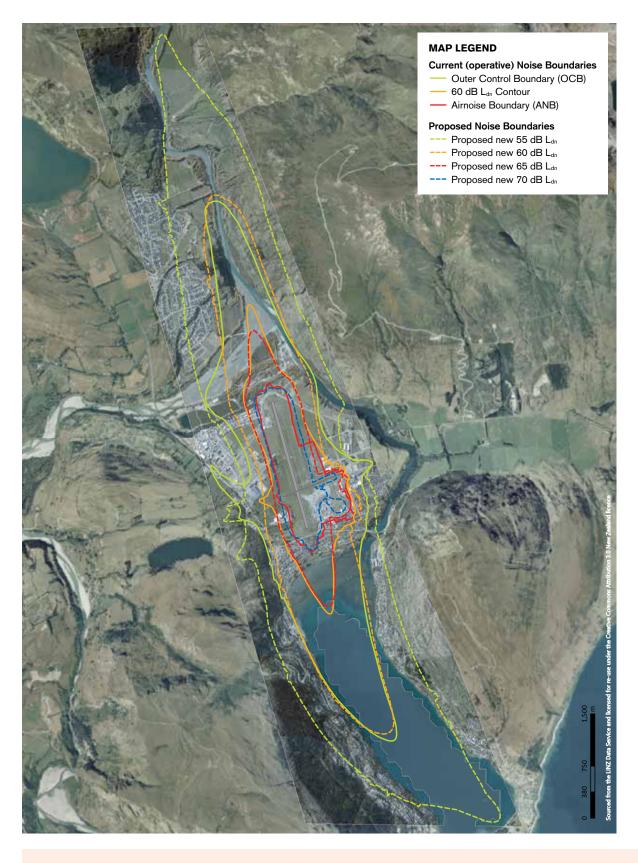




It excludes sporting facilities, retail, police stations, fire stations, courthouses, probation and detention centres, government and local government offices.

We are proposing some changes to this definition in relation to Visitor Accommodation – please see page 17 for more details.

#### **CURRENT AND PROPOSED NOISE BOUNDARIES**



#### **NUMBER OF HOUSES AFFECTED**

((c	Inside 70dB L <sub>dn</sub> Noise Boundary	Between 70dB L <sub>dn</sub> & Air Noise Boundary (65dB L <sub>dn</sub> )	Between ANB & Outer Control Boundary (55dB L <sub>dn</sub> )*	
CURRENT Noise Boundaries	0	41	750	
PROPOSED Noise Boundaries	34	99	3,837	

<sup>\*</sup>Estimate based on QLDC cadastral datasets (May 2018), and assumes one house per property parcel in residential zones.

#### HOW WE PROPOSE TO APPLY THE CURRENT STANDARD

Queenstown Airport has used NZS6805 to guide the way the effects of aircraft noise are managed around the airport since the first district plan was proposed under the Resource Management Act. Until now, we have taken a more moderate approach to the NZ Standard, however given the proposed increase in noise in the future, we believe a more stringent approach is required:

((c	Inside 70dB L <sub>dn</sub> Noise Boundary	Between 70dB L <sub>dn</sub> & Air Noise Boundary (65dB L <sub>dn</sub> )	Between ANB (65dB L <sub>dn</sub> ) & 60dB L <sub>dn</sub> Noise Boundaries	Between ANB & Outer Control Boundary (55dB L <sub>dn</sub> )
Proposed District Plan Provisions	No new ASAN permitted	No new ASAN permitted. For alterations and additions to existing ASAN, resource consent is required for non-complying activity and must be fitted with appropriate acoustic treatment	Some modified controls over the density of ASAN	No new ASAN unless the District Plan already permits it, subject to appropriate acoustic treatment being fitted. For alterations and additions to existing ASAN in non-residential zones, resource consent is required for non-complying activity and must be fitted with appropriate acoustic treatment.
				Some modified controls over the density of ASAN
Proposed QAC Obligations (to be set out within the Airport Designation)	QAC offers to acquire homes	QAC offers full funding for mitigation (insulation and mechanical ventilation) to achieve an internal noise environment of 40dB L <sub>dn</sub>	QAC offers 75% funding for mitigation (mechanical ventilation) so that windows can remain closed to achieve an internal noise environment of	

40dB L<sub>dn</sub>

## Detailed overview of proposed noise changes

The proposed noise boundaries would ultimately need to be included in the District Plan, and changes would need to be made to other Plan provisions to ensure the appropriate use of land around the airport. We would also propose, via a notice of requirement, some alterations to the Queenstown Airport designation conditions to ensure the airport responsibly manages the effects of aircraft noise on the community.



#### **PROPOSED CHANGES**

#### **RATIONALE FOR CHANGE**

#### **District Plan**

#### Consolidating airport information

We are proposing a new "aircraft noise" chapter in the District Plan which will bring all Queenstown and Wanaka Airport information together in one place. No changes are proposed to the Wanaka Airport rules at this time.

Currently, aircraft noise at Queenstown and Wanaka airports is referred to in 15 chapters of the District Plan. Bringing all noise provisions together will make it easier for those using the plan.

#### Land use activities

We are proposing modified rules to discourage and avoid new ASAN within the noise boundaries. These would be complemented by methods that ensure that extensions or new builds in existing residential zones around the airport meet standards sufficient to mitigate the effects of aircraft noise. For more detailed information relating to specific land use zones refer to the factsheets on our queenstownairport.com.

Future additional ASAN activity around the airport should continue to be carefully considered in terms of proximity to the airport and the exposure the users of that land will have to aircraft noise.

#### **Definition of Activities Sensitive to Aircraft Noise (ASAN)**

We are proposing to remove commercial visitor accommodation (VA) from the definition of ASAN.

This is to recognise that if the district is going to accommodate more visitors, they will need somewhere to stay. It allows commercial VA to be established in areas previously restricted by the noise boundaries, where allowed by the underlying zoning.

## Airport Designation

#### **Noise mitigation**

We are proposing to extend the QAC's noise mitigation obligations to cover a greater area of land around the airport which matches the relevant expanded noise boundaries.

- Within the 70dB L<sub>dn</sub> Boundary: We will make offers to purchase existing properties containing ASAN.
- Within the ANB (65dB L<sub>dn</sub>): We will continue to fund 100% noise mitigation costs for existing buildings containing ASAN so that an internal noise environment of 40dB L<sub>dn</sub> can be achieved.
- Within the 60dB L<sub>dn</sub> Boundary: We will continue to fund 75% of the cost of a mechanical ventilation system so that windows can remain closed and an internal noise environment of 40dB L<sub>dn</sub> can be achieved.

Protecting people's wellbeing is essential. We want to ensure all we are addressing and managing the effects of aircraft noise on affected residents around the airport.

#### **Noise Management Plan**

We would need to update the Noise Management Plan (NMP) to reflect the proposed changes e.g. reflecting the process for making an offer of purchase within the 70dB L<sub>dn</sub> Noise Boundary.

The NMP would be updated to reflect the various changes if they are approved.

## Our noise management activities

QAC's ongoing goal is to properly manage the effects of aircraft noise on residents and visitors to Queenstown and the region. We do this by working closely with key stakeholders, including airlines, general aviation operators, industry agencies and neighbouring communities and following best practice for aircraft noise management.

Our key noise management measures include:

A robust noise management plan that sets out how we will liaise with the community and deliver measures to manage the effects of aircraft noise. To read the plan please visit www.queenstownairport.co.nz/noise.

Measuring and modelling aircraft noise to ensure our operations stay within our noise boundaries and to help with forward planning where noise mitigation might be required.

- Aircraft noise is measured and the data is used to calibrate the aircraft noise model. These contours are used to confirm compliance with our designation conditions and the noise boundaries we have in place.
- The modelling software is then used to produce maps (known as Annual Aircraft Noise Contours) which show the previous year's noise results. These are also used to predict aircraft noise for the next 12 months.
- The measurement data and modelling is managed independently by leading New Zealand noise management experts Marshall Day Acoustics Ltd.

**Investing in noise mitigation packages** for our most affected neighbours.

Using technology to help address noise and emissions. We work with airlines, general aviation and industry agencies, encouraging them to use more modern, quieter aircraft, employ the best technology and to design smarter flight paths.

 All 4 of our scheduled airlines have been flying SMART approaches for jet operations since 2012. The SMART approaches use satellite-based navigation and enable aircraft to burn less fuel, emit less carbon dioxide and fly more quietly. For example, 2013-2017 in-flight delay reduction alone reported 216,000 minutes saved, 6,480,000Kgs of fuel saved, and 20,476,000kg of CO<sub>2</sub> saved. These procedures also reduce noise further out from the airport.

#### Maintaining our consented hours of operation

(6am–10pm) to ensure the community gets a break from aircraft noise overnight. Note: The only aircraft able to fly in darkness are commercial airlines with after-dark approval from CAA/CASA (up to 10pm), or Search & Rescue or Medivac aircraft (helicopters). Small fixed wing planes operate within the airport's consented hours but can only fly in daylight hours.

Supporting district plan objectives, policies and rules which detail the airport's compliance with noise limitations and its operations within consented operating hours.



#### QUEENSTOWN AIRPORT NOISE LIAISON COMMITTEE

The Queenstown Airport Liaison Committee was formed in October 2013. It is a forum for the Airport, local community and other stakeholders to discuss issues related to noise at Queenstown Airport. It hears feedback from residents and monitors any complaints. It has 10 members including an independent chairperson, at least three community representatives, two Queenstown Airport representatives and one representative each from QLDC, Airways NZ, airlines and general aviation.

## **Next steps**

- QAC will consider all of the community feedback and intends to then present a proposal to the Council for consideration.
- 2 If accepted by the Council for processing as a variation to the District Plan, a formal planning process would then commence.
- 3 QAC may also issue a related notice of requirement to alter the airport designation.
- The community would have an opportunity to become formally engaged in these processes, for example by lodging submissions.



