

Attachment E – Section 32 Evaluation Report: Informal Airports

Section 32 Evaluation Report: Informal Airports

1. Strategic Context

Section 32(1)(a) of the Resource Management Act 1991 requires that a Section 32 evaluation report must examine the extent to which the proposed objectives are the most appropriate way to achieve the purpose of the Act.

The purpose of the Act requires an integrated planning approach and direction:

5 Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The remaining provisions in Part 2 of the Act provide a framework within which objectives are required to achieve the purpose of the Act and provisions are required to achieve the relevant objectives.

2. Regional Planning Documents

The Regional Policy Statement 1998 is currently under review, and is expected to be further advanced in that process by the time the Queenstown Lakes District Council's District Plan Review is notified in May 2015.

Specifically, the Draft Regional Policy Statement is currently open for public consultation and feedback with all comments requested to be submitted to the Otago Regional Council by 19th December 2014. The formal notification of the Draft Regional Policy Statement is then anticipated to occur in late March 2015.¹

The operative RPS does not contain any Objectives and Policies that are relevant to the management of informal airports.

Under the Draft Regional Policy Statement Objective 3.2 is considered relevant and states:

"Objective 3.2 - Resources are used efficiently and in a way that minimises conflict"

This Objective is supported by a range of policies with the following being considered relevant to the management of informal airports:

"Policy 3.2.2 Requiring efficient resource use

Require that the subdivision, use and development of natural and physical resources are undertaken in a manner, and at a rate, which is efficient with regard to its purpose, so that it:

a) Minimises conflict with other resource uses; and

b) Minimises the generation of waste and discharges."

¹ ORC Website <http://www.orc.govt.nz/Publications-and-Reports/Regional-Policies-and-Plans/Otago-Regional-Policy-Statement-Review/>

“Policy 3.2.5 Providing for activities that generate adverse effects

Manage the use and development of land and discharges to the environment to:

- a) Avoid significant adverse impacts on human health or amenity by reducing exposure to activities that may generate adverse effects; and*
- b) Regulate activities that use or discharge noxious or dangerous substances to control off site effects that may be adverse to human health or safety; and*
- c) Recognise and providing for the operation and development of activities that have the potential to generate adverse effects, including industrial and rural productive activities.”*

As will be shown in the evaluation below, the proposed provisions for the management of informal airports are considered to be consistent with these draft Regional Policy Statement provisions.

Specifically, the informal airport provisions have been developed to enable the operation of informal airports as a land use activity whilst adequately controlling their environmental effects to prevent conflict with noise sensitive receivers and to protect human health and amenity.

Amendments to this evaluation may be required to accommodate any relevant changes notified in the Draft Regional Policy Statement as the District Plan must *give effect to* the operative RPS and must *have regard to* any proposed RPS.

3. Resource Management Issues

The resource management issues set out in this section have been identified from the following sources:

- QLDC Research Report entitled Management of Informal Airports²;
- Public Responses to the QLDC Brochure - Managing Airports in Rural Areas Issues and Options³;
- Meetings with local aircraft operators⁴.
- Acoustic Review and Advice by Chiles Ltd⁵

The key issues are:

Issue 1: The Operative District Plan provisions for informal airports capture almost every aircraft arrival and departure undertaken within the District. This leads to a ‘doubling up’ of statutory approval processes between the Council, Department of Conservation and Commissioner of Crown Lands.

Specifically, many of the informal airports within the Queenstown Lakes District occur on land that is administered by the Department of Conservation or Commissioner of Crown Lands. Robust statutory assessments are undertaken by each of these of these agencies before granting approval (in the form of a Concession under the Conservation Act 1987 or a Recreation Permit under the Crown Pastoral Land Act 1948) for informal airports on these land tenures.

² QLDC Research Report – Management of Informal Airports, prepared by Southern Planning Group dated April 2012.

³ Publicly Notified for Comment on 4th October 2012

⁴ Queenstown Meeting 21 July 2014 & WAUG 07 November 2012

⁵ Acoustic Review dated 15 September 2012 of Southern Planning Groups April 2012 Research report and subsequent e-mail correspondence and phone conversations between SPG and Chiles Ltd August 2014

Requiring a land use consent from the Council over and above the approvals described above adds a secondary layer of cost and on-going compliance to the aircraft operators and has resulted in a large number of resource consents for Council staff to process (many of which currently remain 'on hold').

As the effects of most informal airports on these land tenures are internalised and assessed by the government agencies responsible for their administration and management, requiring land use consents from the Council for the same activities is inefficient, expensive and unnecessary.

Issue 2: The Operative District Plan provisions for informal airports are considered to be unclear / misunderstood by aircraft operators and the general public.

As described above and in detail in the research report, almost every aircraft arrival and departure is captured by the current definition of airport and subsequently, requires resource consent. However, members of the public often believe the term 'airport' implies a high level of aircraft activity and the physical hall marks of a traditional airport.

Additionally, there has been confusion amongst aircraft operators as to whether a limited number of aircraft landings can occur without triggering the need for resource consent.

4. Purpose and Options

The overarching purpose of the proposed changes to the Operative District Plan provisions is to simplify and streamline the provisions for the management of informal airports.

This has been undertaken with due regard to the predominant types of informal airport consents sought, the approach taken by other District Council's in managing informal airports and the assessment of effects that are completed by other statutory bodies such as LINZ (Commissioner of Crown Lands) and the Department of Conservation.

Strategic Directions

The following goals and objectives from the Strategic Directions chapter of the draft District Plan are relevant to this assessment:

Goal 1: To develop a prosperous, resilient and equitable economy.	
Goal 4 – The Protection of Our Environment and Our Ecosystems	
Objective 7	<i>To facilitate public access to the natural environment.</i>
Policy 7.1	<i>That opportunities to provide public access to the natural environment are sought at the time of plan change, subdivision or development.</i>

In general terms, and within the context of this review, these goals and objectives are met by:

- Reducing the doubling up of statutory approvals that are required for informal airports on Crown Pastoral Lease and Public Conservation Land to reduce the financial implications on aircraft operators / tourism providers;
- Enabling aerial transportation of sightseers, recreationists and adventurers into the back country and natural areas of the District on Crown Pastoral Lease and Public Conservation Land where it has been authorised by the relevant administrators;

Determining the most appropriate methods to resolve the issues highlighted for the management of informal airports will enable the Plan to give effect to relevant parts of the Strategic Directions chapter, and ultimately meet the purpose of the Act.

As required by section 32(1)(b) RMA, the following section considers various broad options considered to address each issue, and makes recommendations as to the most appropriate course of action in each case.

Broad options considered to address issues

Issue 1: The Operative District Plan provisions for informal airports capture almost every aircraft arrival and departure undertaken within the District. This leads to a 'doubling up' of statutory approval processes between the Council, Department of Conservation and Commissioner of Crown Lands.

Issue 2: The Operative District Plan provisions for informal airports are considered to be unclear / misunderstood by aircraft operators and the general public.

Option 1: Retain the operative provisions;

Option 2: Retain and improve the operative provisions;

Option 3: Undertake a comprehensive review.

	Option 1: Status quo/ No change	Option 2:	Option 3:
Costs	<ul style="list-style-type: none"> The 2012 research report identifies a number of costs associated with the existing provisions, including the triggering of a high number resource consent applications. This option fails to address new Central Government policy direction to simplify and streamline Resource Management Act processes. Aircraft operators / landowners are required to lodge and pay for the processing of resource consents for tens if not hundreds of individual 'informal airports' throughout the District; Costs incurred in obtaining resource consents will either be passed on to consumers and / or aircraft operators will cease using some sites to save costs; 	<ul style="list-style-type: none"> Existing airport rule and definition are 'all encapsulating'. Improving the existing provisions is unlikely to resolve the 'double dipping' issue of statutory assessment and subsequently the resource consent costs imposed on the aircraft operators; This approach would not deal with other related issues such as the ambiguity / debate with the assessment of noise from informal airports; Time and cost involved to research and consider alternatives; Potential for Environment Court appeals against amended provisions. 	<ul style="list-style-type: none"> A greater level of time and cost would be incurred by Council to comprehensively review and subsequently create new provisions for informal airports; Greater potential for Environment Court appeals to be lodged against any new plan provisions that are more comprehensive than just the existing airport rule.

	<ul style="list-style-type: none"> • Council will need the staff capacity to process all the resource consents that have been and/or will be lodged if the current provisions remain; 		
Benefits	<ul style="list-style-type: none"> • Council staff are already familiar with the existing provisions and processes for assessing informal airports. 	<ul style="list-style-type: none"> • Retaining but improving the existing provisions may reduce some of the current ambiguity with the application of the existing rules; • Council has already budgeted for a complete review of the District Plan so there are no significantly greater costs imposed upon the Council to undertake this process. 	<ul style="list-style-type: none"> • A more comprehensive review with better quality information, including technical input, would enable the rules to be more appropriately refined. Better quality information may reduce the number of future resource consent triggers and prevent unnecessary 'double dipping' of statutory assessment and approvals; • Removing the 'double dipping' situation will have economic benefits for the aircraft operators by not requiring resource consents for every single landing site they utilise; • Council staff will not have to process and monitor hundreds of resource consents of which the environmental effects are less than minor; • A comprehensive review will remove all ambiguity and incorrect perceptions around what an informal airport is and what level of aircraft activity requires consent. • A comprehensive review will enable other relevant provisions to be considered

			holistically i.e. applicable acoustic standards, temporary activities etc. • Council has already budgeted for a comprehensive review of the District Plan so there are no significantly greater costs incurred by the Council in undertaking this process.
Ranking	3	2	1

The principal aims of the District Plan review is to simplify the plan where appropriate and to provide greater clarity and certainty around development matters in the District. It is anticipated that this will remove some of the uncertainties that can restrict potential economic growth and associated employment provision.

In accordance with these aims and based on the assessment above, Option 3 is considered the most practicable option.

5. Scale and Significance Evaluation

The level of detailed analysis undertaken for the evaluation of the proposed objectives and provisions has been determined by an assessment of the scale and significance of the implementation of the proposed provisions for informal airports in the District Plan. In making this assessment, regard has been had to the following, namely whether the objectives and provisions:

- Result in a significant variance from the existing baseline;
- Have effects on matters of national importance;
- Adversely affect those with specific interests, e.g., Tangata Whenua;
- Involve effects that have been considered implicitly or explicitly by higher order documents;
- Impose increased costs or restrictions on individuals, communities or businesses.

6. Evaluation of proposed Objectives Section 32 (1) (a)

Section 32(1) of the RMA requires the Council to evaluate the extent to which the objectives are the most appropriate way to achieve the purpose of the Act.

Specifically, the proposed Objective for informal airports has been developed to set a clear direction for the establishment, operation and management of informal airports in the Rural General Zone which balances the environmental, social, economic and cultural needs of the District.

<i>Proposed Objective</i>	<i>Appropriateness</i>
Objective 9 <i>Manage the location, scale and intensity of informal airports.</i>	Consistent with Goal 1 of the Strategic Directions Chapter - <i>To develop a prosperous, resilient and equitable economy.</i> Consistent with Goal 2 of the Strategic Directions Chapter - <i>The Protection of Our Environment and Our Ecosystems</i>

The proposed Objective is considered the most appropriate way to achieve the Act because it addresses the fundamental matters identified in the Research Report⁶.

Specifically, location or perhaps more correctly, separation of informal airports from noise sensitive receivers was identified as the key attribute in mitigating the variety of adverse environmental effects that may arise from the operation of informal airports.

Accordingly, managing the location of informal airports (including directing where they may be appropriate) is a key determinant in achieving the purpose of the Act.

Similarly, the scale and intensity of informal airports has been identified as a matter that warrants higher level direction because increasing scale and intensity can decrease people's amenity and potentially breach the District Plan noise limits.

The proposed Objective is therefore considered to provide for the economic well-being of a prosperous tourism industry whilst also protecting the social and cultural wellbeing, health and safety of the Districts residents.

Accordingly, the proposed Objective is considered to be the most appropriate method of achieving the purpose of the Act.

⁶ Management of Informal Airports by Southern Planning Group dated April 2012, Section 3.2, page 20.

7. Evaluation of the proposed provisions Section 32 (1) (b)

The below table considers whether the proposed provisions are the most appropriate way to achieve the relevant Objective. In doing so, it considers the costs and benefits of the proposed provisions and whether they are effective and efficient.

(See also Table detailing broad options considered in Section 4, above)

Issue 1: The Operative District Plan provisions for informal airports capture almost every aircraft arrival and departure undertaken within the District. This leads to a 'doubling up' of statutory approval processes between the Council, Department of Conservation and Commissioner of Crown Lands.

Issue 2: The Operative District Plan provisions for informal airports are considered to be unclear / misunderstood by aircraft operators and the general public.

Objective 9: Manage the location, scale and intensity of informal airports

Summary of proposed provisions that give effect to the objective:

<i>Proposed provisions</i>	<i>Costs</i>	<i>Benefits</i>	<i>Effectiveness & Efficiency</i>
<p><u>Policies:</u></p> <p><i>Policy 2.4</i> - Informal airports shall be operated and managed to ensure that the effects of aircraft activities on rural residents and visitors are adequately mitigated.</p>	<p>It is considered that there are no costs associated with this proposed Policy.</p>	<p>This proposed Policy promotes informal airports as an important part of recreational activities within the District as opposed to the current plan provisions which are silent regarding this activity.</p> <p>While promoting the operation and management of informal airports the policy also directs recognition of the effects that can be generated and to adequately mitigate these.</p>	<p>The recognition of mitigating adverse effects on rural residents and visitors directly links with the proposed Permitted Activity Rule 23 which sets appropriate setbacks and limits on the scale of Permitted Activities to mitigate / avoid significant conflict with rural residents and visitors.</p>
<p><i>Proposed Policy 2</i></p> <p><i>Policy 13.3.9.1</i> - Recognise that informal airports are</p>	<p>Promotes the use of the Rural General Zone for informal airports.</p>	<p>The Rural General Zone has historically been the location for most informal airports to date. Recognising the appropriateness of this Zone</p>	<p>The proposed Policy is considered effective and efficient. It is a logical means of achieving the proposed Objective as it confirms the Rural</p>

<p>an appropriate activity within the rural environment, provided the informal airports shall be operated and managed so as to minimise adverse effects on the surrounding rural amenity.</p>	<p>This could increase proposals for informal airports in this Zone with a decrease in rural amenity if incorrectly managed.</p>	<p>for informal airports will send a clear direction that this is where the Council and the Districts residents would prefer to see such activity occur.</p> <p>The proposed Policy still emphasises the need to minimise adverse effects on rural amenity so is considered to be appropriately balanced between providing for informal airports in an appropriate rural location and on a limited scale whilst protecting the Districts residents from potential adverse effects.</p>	<p>General Zone as an appropriate location for informal airports but, also directs decision makers to minimise effects on rural amenity.</p> <p>The potential effects on rural amenity are ultimately a result of the scale and intensity of an informal airport and the proposed Policy acknowledges this by requiring amenity effects to be minimised.</p> <p>The proposed Policy directly informs proposed Rule 13.4.2.25 in Table 1 which lists the standards to be met for informal airports that will have minimal effects and which are considered appropriate as Permitted Activities in the Rural General Zone.</p>
<p>Proposed Policy 3</p> <p>Policy 13.3.9.2 -</p> <p>Protect rural amenity values, and amenity of other zones from the adverse effects that can arise from informal airports.</p>	<p>Provides direction that not all areas in the Rural General Zone will be appropriate for informal airports. This potentially reduces the locations at which informal airports may be operated.</p>	<p>The proposed Policy will provide protection of adverse effects from informal airports that operate at a scale and intensity above that which is determined appropriate for Permitted Activities.</p> <p>The Policy enables a case by case assessment of adverse effects from informal airports that seek a higher level of use than provided for in proposed Rule 13.4.2.25.</p> <p>This will ensure that despite the District Plan acknowledging the Rural General Zone as an appropriate location for informal airports, adjoining residents, visitors and landowners are assured that the effects of high use informal airports will be avoided or</p>	<p>The proposed Policy is considered effective and efficient.</p> <p>It provides a robust directive in support of the overarching Objective by requiring that informal airports for which resource consent is required must assess and protect rural amenity from the inappropriate siting, scale and intensity of their operation.</p> <p>The proposed Policy is directly relevant to the management of informal airports that require resource consent pursuant to proposed Rules</p>

		appropriately mitigated.	13.4.2.54 & 13.4.2.55 in Table 6.
<p><u>Proposed Rules</u></p> <p>Rule 13.4.2.24 – Table 1</p> <p>Informal Airports which comply with Table 6.</p>	<p>The proposed Permitted Activity Rule will enable the majority of informal airports to operate without requiring resource consent from the Council.</p> <p>This rule requires Council to relinquish the assessment of effects and control of a large number of informal airports to the Statutory bodies who administer Public Conservation Land and Crown Pastoral Land.</p>	<p>The Permitted Activity rule will remove the need for aircraft operators to obtain both a resource consent and a DOC Concession or Recreation Permit for a large number of informal airports. This will result in significant cost savings to aircraft operators.</p> <p>The Permitted Activity Rule will also establish set parameters in terms of location/separation distance and scale of informal airport activity that is appropriate on other Rural General Zone land. This will enable some sites to be used for limited private aircraft landings or infrequent commercial use. Again this will result in significant cost savings to aircraft operators.</p> <p>This proposed Rule directly addresses the new Central Government policy direction to simplify and streamline Resource Management Act processes.</p>	<p>The proposed Rule is considered very effective and efficient. It directly supports proposed Objective 9 and implements proposed Policy 13.3.9.1 by acknowledging the Rural General Zone as the appropriate location for informal airports subject to set standards that adequately minimise any potential adverse effects on rural amenity.</p>
<p>Rule 13.4.2.53 & 13.4.2.54 Table 6</p>	<p>The standards of the proposed Rules and in particular the required separation distances mean that in some locations i.e. the Wakatipu Basin where the rural environment is more heavily domesticated, it is unlikely informal airports could meet the Permitted Activity rules.</p>	<p>Maintaining the Discretionary Activity status for these informal airports is considered more beneficial than a Non-Complying Activity Status.</p> <p>A Discretionary Activity status more accurately represents the intent of the proposed Rules that the Rural General Zone is the appropriate</p>	<p>The proposed Rules directly support proposed Objective 9 and Policy 13.3.9.2 by recognising that robust assessment of informal airports for higher level use or contentious locations is required to ensure the protection rural amenity values, and amenity of other zones from the</p>

	<p>In this instance the proposed Rules provide for a Discretionary Activity status for informal airports that fail to meet the Permitted Activity provisions.</p> <p>This essentially maintains the status quo for assessment of informal airports and will result in a case by case assessment of effects.</p> <p>This may create uncertainty regarding the approval process (I.E. notification) for aircraft operators and tourism providers that wish to seek resource consent for informal airports that breach the Permitted Activity standards.</p>	<p>Zone for informal airport activity albeit recognising that the activity may not be acceptable in all parts of the Rural General Zone.</p> <p>The Discretionary Activity status of this Rule therefore provides the Council the ability to undertake a robust case by case assessment of informal airport proposals and any adverse environmental effects that may arise from their establishment and operation in each specific location.</p> <p>The Discretionary Activity status provides the Council with the ability to notify any proposals with significant adverse effects. However, this activity status is no more restrictive than the existing blanket provisions for informal airports.</p>	<p>adverse effects that can arise from informal airports.</p>
Rule ?? –Noise	<p>There are not considered to be any costs associated with the proposed change to the existing Zone Standard for noise and specifically, the reference to assessment of helicopter noise pursuant to NZS 6807:1994.</p> <p>Acoustic advice provided to the Council confirms that the existing Zone Standard for noise is not suitable for assessing helicopter noise (and in fact NZS 6802:2008 was never intended to be applied to assessment of helicopter noise. This is explicit in the scope of the standard.)</p> <p>The recommendation to use NZS 6807:1994 for assessment of helicopter noise will not exacerbate the number of compliant informal airports for helicopters</p>	<p>Inclusion of NZS 6807:1994 into the noise conditions removes all ambiguity over the appropriate assessment of noise for helicopter landings that occurs via the existing Rural General Zone Standard 5.3.5.2(v) and references to portions of NZS 6807:1994 in Assessment Matter 5.4.2.3(xvi).</p> <p>The proposed amendments to the noise rules and the associated noise levels are considered to be conservative. Specifically, for an informal airport containing both helicopter and fixed wing aircraft the noise level is 5dB Ldn lower than NZS 6805:1992 recommends. This is to ensure that in the unlikely event that helicopters are more dominant than fixed wing aircraft; the lower noise limit for helicopters is always the controlling factor.</p>	<p>The proposed amendments to the noise provisions are considered to be very effective and efficient. There is often a lot of ambiguity and debate as to what acoustic standards should be used to assess applications for informal airports and particularly those for helicopters.</p> <p>The inclusion of NZS 6807:1994 into the noise rules will remove this ambiguity and debate.</p> <p>Further, based on acoustic advice provided to the Council, it is understood that the proposed noise limits for informal airports are capable of being complied with by those informal airports permitted pursuant to proposed Rule 13.4.2.25.</p>

	<p>in the District.</p> <p>This is because proposed Rule 13.4.2.25 relies on setbacks and set limits for flights per week as well as requiring compliance with the proposed noise rule.</p> <p>Any informal airport that triggers resource consent pursuant to proposed Rules 13.4.2.54 or 13.4.2.55 should still be assessed in accordance with the proposed Objective, Policies and Assessment Matters that consider all effects of informal airports regardless of whether the noise complies with the proposed noise rule.</p>		<p>Accordingly, the proposed provisions are considered to be an effective means of implementing the proposed Objective and Policies.</p>
<p>Alternative options considered less appropriate to achieve the relevant objectives and policies:</p>			
<p><i>Option 1: Status quo - retain the operative airport Rule.</i></p>	<ul style="list-style-type: none"> • <i>Maintaining the operative Rule would be incredibly inefficient. As research has confirmed, in this scenario every single informal airport (other than for emergencies, fire-fighting or farming purposes) in the Rural General Zone would require resource consent.</i> • <i>Many of these informal airports can be undertaken without generating significant adverse effects on the environment due to significant separation distances from sensitive receivers and thorough assessment by other governing agencies.</i> • <i>The costs associated with still having to obtain a resource consent in these circumstances are significant to aircraft operators and will utilise a lot of time of Council processing planners.</i> • <i>In addition, retaining the operative rule does not address the existing issues of the ambiguity of the noise provisions and their inability to appropriately assess helicopter noise.</i> • <i>Collectively the abovementioned matters mean that retaining the operative airport rule is a highly inefficient approach.</i> 		

<p><i>Option 2: Amend / create new rules for the management of informal airports and retain existing noise provisions.</i></p>	<ul style="list-style-type: none"> • <i>Amending and/or creating new rules for the management of informal airports would not be efficient without looking at the other provisions of the Rural General Zone which currently affect their assessment and overall activity status.</i> • <i>Specifically, the key effect of informal airports is the noise emitted. It is understood from research and acoustic advice provided to the Council that the existing noise rules are ambiguous at best and incapable of assessing some aircraft (helicopter) noise.</i> • <i>Amending and/or creating new rules for informal airports would not be particularly efficient or effective if they were not considered holistically with the noise provisions.</i>

8. Efficiency and effectiveness of the provisions

The above provisions are drafted to specifically address the resource management issues identified with the current provisions, and to enhance those provisions that already function well.

By adding Objectives, Policies and Rules (the provisions) that are specific to the management of informal airports, the intent for management of informal airports in the Rural General Zone becomes easier to understand for users of the Plan inclusive of applicants and processing planners.

Removal of technical errors and ambiguous references to the assessment of noise from informal airports also enables correct assessments in accordance with industry best practise and associated standards.

With a clearer understanding and direction, the proposed provisions for informal airports create a more efficient consent process by reducing the number of resource consents required and by clarifying the appropriate form of assessment when processing resource consents received for informal airports.

9. The risk of not acting

Within the reports and consultation that has informed this evaluation, it is noted that the opportunity to change the existing provisions for the management of informal airports is largely supported.

The proposed approach reflects the current changing nature of the RMA with its drive to simplify and streamline. The District Plan is a forward planning mechanism and the opportunity should be taken to make bold changes where necessary in order to obtain a District Plan that achieves sustainable management.

By not making the proposed changes to the District Plan with respect to informal airports the existing inadequacies will remain and will not advance the usefulness of the District Plan in pursuit of its function in the sustainable management of natural and physical resources.

List of Attachments:

1. Proposed Rural General Zone Provisions and Amended Definitions;
2. Proposed Noise Provisions;
3. Management of Informal Airports Research Report April 2012;
4. Acoustic Advice from Stephen Chiles dated 15 September 2012.

Chiles Ltd

Private Bag 55037, Christchurch 8154

15 September 2012

Ref: 120502

Queenstown Lakes District Council
Private Bag 50072
Queenstown 9348

Attention: Blair Devlin

Dear Blair

Subject: Airport noise

This letter provides acoustics advice on:

- 1) A proposed 500 metre buffer/setback distance from helicopter landing areas on Public Conservation or Crown Pastoral Land, and
- 2) Limitations of the L_{dn} parameter for assessing noise effects of airports with low flight numbers.

500 metre buffer

Southern Planning Group prepared a report on the management of informal airports for the QLDC dated April 2012. Within that report it sets out how informal airports on Public Conservation or Crown Pastoral Land require formal approvals from the Department of Conservation or the Commissioner of Crown Lands respectively. The report suggests that those approvals should be appropriate to manage adverse noise effects on other users within that land. However, those approvals do not consider occupiers of neighbouring land.

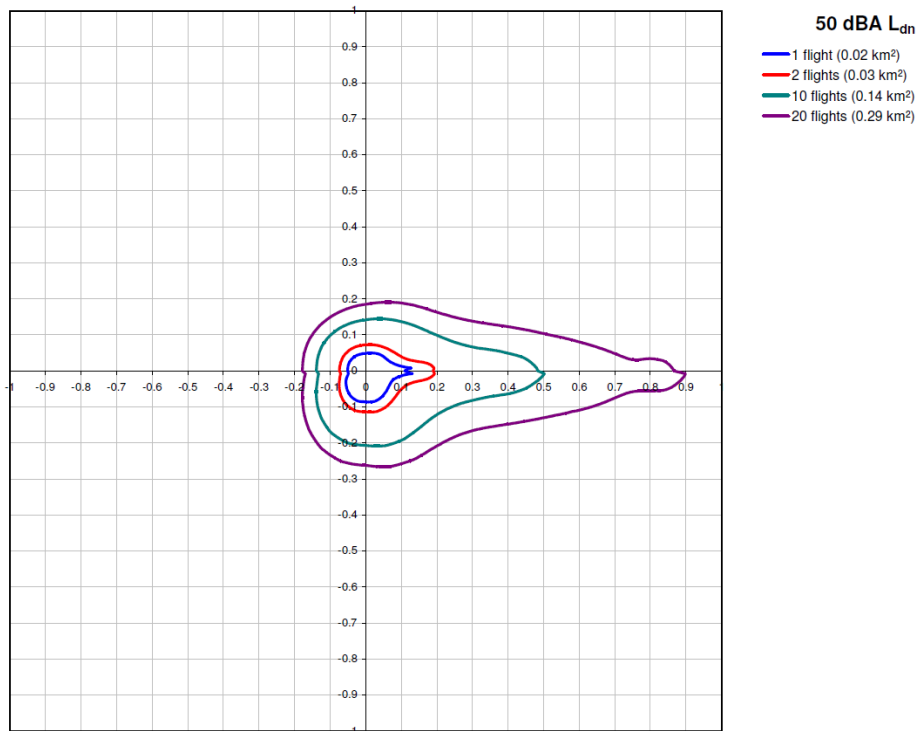
Southern Planning Group suggests that airports on Public Conservation or Crown Pastoral Land could be made permitted activities under the Queenstown Lakes District Plan, but proposes a 500 metre buffer/setback to control any noise effects on neighbouring land. This letter discusses that proposed setback.

Noise effects from helicopters are usually assessed using NZS 6807, which recommends a noise limit of 50 dB L_{dn} at the notional boundary of houses in rural areas (the notional boundary is 20 metres from a house). Experience from existing informal airports in the Queenstown Lakes District is that the 50 dB L_{dn} criterion is usually achieved within a few hundred metres. The actual distance depends on:

- aircraft types,
- aircraft flight paths,
- number and time of movements, and
- terrain.

In previous work for Lakes Environmental Ltd, the author examined a hypothetical airport on flat ground with an AS350 helicopter. The following figure shows the 50 dB L_{dn} contour for different flight numbers, predicted using INM v7.0 software, on a grid extending 1 km in each direction from a

landing site at the centre of the figure. The green contour shows that if there are 10 flights (10 landings and 10 take-offs, being 20 movements) in a day then in the direction of the arrival and departure flight path (to the right of the figure) the 50 dB L_{dn} contour extends to approximately 500 metres. In other directions the contour only extends to approximately 200 metres. If steeper arrival and departure flight paths were used then the extent of the contour could be reduced.



There has previously been debate with respect to resource consent applications in the Queenstown Lakes District as to whether NZS 6807 and the 50 dB L_{dn} criterion are appropriate controls for helicopter noise. In the case of Plan Change 27A, the NZS 6807 criteria were removed from the proposed district plan noise rules during mediation, and as a result there is not a specific helicopter noise limit in the district plan. Our opinion is that, subject to the discussion below on sites with low movement numbers, NZS 6807 and the 50 dB L_{dn} criterion do provide an appropriate control for helicopter noise.

The proposed permitted activity rules for informal airports on Public Conservation or Crown Pastoral Land do not explicitly limit the factors that determine the extent of the sound level contours detailed above. However, from our experience of informal helicopter landing areas in the Queenstown Lakes District it would be unusual to have as many as 10 flights a day. Therefore, the proposed 500 metre setback would generally result in a noise level at neighbouring land within the NZS 6807 criterion of 50 dB L_{dn} , which we consider acceptable.

If greater certainty is desired then the rules could be extended to specify:

- A maximum of 10 flights (20 movements) a day, and
- No flights at night (2200h to 0700h).

The disadvantage of specifying a limit on flights is that airports that are significantly further from neighbouring land would be unnecessarily constrained, or would be unable to take advantage of the permitted activity status.

Low flight numbers

Subjective response to aircraft (fixed wing and helicopter) noise depends on a range of factors. The main factors are the:

- noise level of each aircraft movement,
- number of aircraft movements, and
- time of day of aircraft movements.

The L_{dn} criteria in NZS 6805 (airports) and NZS 6807 (heliports), provide a method to combine these factors in a way that has been shown to correlate to subjective response. The L_{dn} is an average noise level over 24 hours and is sometimes described as a 'noise bucket'. The bucket is filled quicker by noisier aircraft movements and hence the number of flights and their noise levels can be traded-off to some extent. The L_{dn} also includes a penalty for any flights at night, which fill the noise bucket ten times more than the same flights during the day. For informal airports there generally are no night flights.

The L_{dn} provides an effective framework for managing noise effects from airports. However, NZS 6805 is not designed for informal airports and NZS 6807 is only intended to apply to helicopter landing areas with more than ten movements in a month. Regardless of the stated scope of the Standards, it is considered that the L_{dn} criteria do provide a useful reference point for assessment of informal airports. For busier informal airports, such as sky-diving operations for example, it is recommended that the L_{dn} criteria should still be applied, with additional controls if necessary.

An issue with informal airports having low flight numbers is that the L_{dn} criteria could allow excessively noisy individual events. The report by Southern Planning Group suggests that the QLDC could devise specific criteria for informal airports, and indicates that this may be in terms of a sound exposure level (SEL), L_{AE} , which would control individual events.

The L_{AE} is the total sound energy of a single aircraft movement. The L_{dn} 'spreads' sound from all movements over 24 hours, whereas the L_{AE} represents all sound from a single movement effectively in 1 second, hence values of L_{AE} are higher than values of L_{dn} . For example, if a movement has a L_{AE} value of 95 dB, and there are 20 such movements in a day the resulting L_{dn} (59 dB) can be calculated as follows (assuming none of the movements are at night):

$L_{dn} =$	L_{AE}	$+10 \times \log(\text{number of movements})$	$- 10 \times \log(\text{time in seconds})$
$L_{dn} =$	95 dB L_{AE}	$+10 \times \log(20 \text{ movements})$	$- 10 \times \log(24 \times 60 \times 60 \text{ seconds})$
$L_{dn} =$	95 dB L_{AE}	+13 dB	- 49 dB
$L_{dn} =$	59 dB		

In NZS 6805 the primary L_{dn} criterion is 55 dB and in NZS 6807 it is 50 dB (this is more stringent to account for the particular characteristics of helicopter sound). The following table shows the maximum

L_{AE} for a given number of flights (two movements each) that would result in compliance with these L_{dn} criteria.

Number of flights (2 movements)	Maximum L_{AE} to meet 55 dB L_{dn} (NZS 6805)	Maximum L_{AE} to meet 50 dB L_{dn} (NZS 6807)
1	101 dB L_{AE}	96 dB L_{AE}
2	98 dB L_{AE}	93 dB L_{AE}
5	94 dB L_{AE}	89 dB L_{AE}
10	91 dB L_{AE}	86 dB L_{AE}
20	88 dB L_{AE}	83 dB L_{AE}

It can be seen from the table that for low daily flight numbers high values of L_{AE} would be possible for individual flights/movements. The resulting adverse effects might not being well represented by the daily average L_{dn} . This could be avoided by also setting a L_{AE} criterion as suggested by Southern Planning Group.

Within New Zealand we are not aware of a precedent that links subjective responses to a particular L_{AE} criterion. If this issue is pursued, a search could be conducted of international literature to seek further guidance/research. For major airports in New Zealand, 95 dB L_{AE} is often proposed for night-time noise on the basis of sleep disturbance. This established use of a 95 dB L_{AE} criterion for night-time noise might indicate that it would also result in reasonable daytime aircraft noise effects. However, as shown in the table above, this would be achieved in most cases regardless, and potentially a lower L_{AE} criterion could be considered for informal airports.

A 95 dB L_{AE} criterion would have an influence on fixed wing airports with very low flight numbers. For example, if there was a noise limit of 55 dB L_{dn} (NZS 6805), but an airport only had one flight a day, then as shown in the table, the L_{AE} of each movement could be as high as 101 dB L_{AE} . In this instance the imposition of a 95 dB L_{AE} criterion would limit the potential noise effects. This criterion could be achieved with a relatively short setback distance, generally within 100 m if not on the flight path.

An additional issue for informal airports with low flight numbers is that anecdotally the relationship between subjective response to aircraft noise and the L_{dn} appears to be weaker. For low movement numbers subjective responses may be related to the number of movements more so than the noise level (L_{AE}) of each movement. Consequently, in consent RM060820 for example, a maximum number of flights (4/day) was imposed in addition to a L_{dn} limit.

In summary, possible controls for noise from informal airports include:

- L_{dn} criteria,
- L_{AE} criteria,
- Maximum numbers of flights, and
- Setback distances.

For informal airports with low movement numbers we are not aware of robust precedents in New Zealand that could be used to accurately combine these factors to relate to subjective response. For the Rural General Zone, Southern Planning Group proposes permitted activity rules for informal airports as a maximum number of flights (3/day) and a setback (500 m). This is a relatively

conservative approach that has the advantage of being straightforward to monitor and avoids the need for an acoustics specialist.

In other zones a conservative 500 m setback generally cannot be accommodated, and it may be more appropriate to set criteria in terms of L_{dn} and/or L_{AE} . While this adds complexity to the assessment and compliance monitoring, it allows the conservatism to be removed. L_{dn} criteria can be taken from NZS 6805 (55 dB L_{dn}) and NZS 6807 (50 dB L_{dn}), but these should be augmented with a L_{AE} criterion or setback distance, and a limit on the number of flights.

There is not a simple standard currently available for informal airports. A number of potential controls are discussed above, but broader judgement may be required to determine appropriate values for some parameters.

Yours sincerely

Chiles Ltd

A handwritten signature in black ink, appearing to read 'Stephen Chiles', is written over a light blue horizontal line. The signature is fluid and cursive.

Dr Stephen Chiles