

22 February 2022

Rotorua Regional Airport Limited
PO Box 7221
Te Ngae
Rotorua 3042

Attention: Ms Jayne Marsh

Dear Jayne

2021 ACTUAL NOISE CONTOURS AND 2022 ANNUAL AIRCRAFT NOISE CONTOURS

Introduction

Marshall Day Acoustics (MDA) has been engaged to prepare projected and actual noise contours based on movements that occurred in the 2021 financial year (1 July 2020 - 30 June 2021) as per rule Noise-S3.1.a.iii¹ and Noise-S4.1.a² of the Reformatted Rotorua District Plan (District Plan).

The 'Actual Noise Contours' (ANC) uses aircraft movements during the busiest three months of the 2021 financial year as these contours represent the actual noise emissions from aircraft operations in FY21 ('2021 ANC'). The purpose of these contours is to assess compliance with the noise boundaries in the District Plan.

The projected contours are termed the 'Annual Aircraft Noise Contours' (AANC) and use the busiest three months of the 2021 financial year, with the projected growth over the next year added to produce the '2022 AANC'. The purpose of these contours is to identify which properties are eligible for acoustic treatment offers under the Noise Mitigation Programme detailed in the District Plan (Noise-S4).

Noise Rules

The noise rules that apply to the airport are contained in Part 2 General District Wide Matters of the Reformatted District Plan (February 2022).

Performance Standard Noise-S3.1.a sets a 65 dB L_{dn} noise limit on airport operations outside the Air Noise Area.

Performance Standard Noise-S3.1.a.iii requires the Airport Operator to provide a report detailing the calculated noise levels at the boundary of the Air Noise Area on an annual basis. The noise contours calculated for this rule are based on the actual aircraft activity over the previous twelve months and the purpose of the contours is to assess compliance with the Airport's noise limits.

Performance Standard Noise-S4.1.a requires the preparation of an AANC plan indicating which properties are predicted to lie within the 60 and 65 dB L_{dn} contours at a date twelve months from the date of preparation. The contours are based on the busiest three months of the preceding year with the projected growth over the next year added for the purpose of offering acoustic treatment to eligible dwellings.

Noise Model Input and Assumptions

The 2021 ANC and 2022 AANC have been prepared using the Integrated Noise Model (INM) version 6.1 which is the same software used to produce the airport noise boundaries in the District Plan.

¹ Previously A7.2.1(d)(iii)

² Previously A7.4.1

Aircraft movement data for FY21 was provided by the Airport Company. The busiest three consecutive months were July, August and September 2020 and the aircraft movements from these three months were used to calculate the 2021 ANC.

To calculate the 2022 AANC, projected growth for the next 12 months has been applied to the data used to calculate the 2021 ANC. The growth estimate is provided by the Airport Company.

The aircraft movement data only includes details of aircraft arrivals to the airport, so it has been assumed that for every arrival a corresponding departure took place.

Runway usage has been estimated based on typical wind patterns resulting in 60% of movements on Runway 18 (on a southerly heading) and 40% on Runway 36 (on a northerly heading). Helicopter movements have also been included in the model and use different flight tracks to fixed wing aircraft.

Calculated 2021 ANC

Figure 1 shows the calculated 65 dB L_{dn} noise contour for the 2021 ANC compared with the District Plan Air Noise Area. This figure shows that the 2021 65 dB L_{dn} contour lies comfortably within the Air Noise Area and therefore aircraft noise complied with the limit.

Calculated 2022 AANC

Figure 2 shows the predicted 2022 AANC 60 and 65 dB L_{dn} contours compared with the previous years (2021 AANC). The 2022 AANC are slightly smaller than the 2021 AANC.

The purpose of the AANC is to identify whether any new houses are eligible for an offer for acoustic treatment under the 2022 AANC. Aircraft operations and the corresponding noise have decreased over the last two years due to the Covid19 pandemic. Therefore, it is likely that no new properties are eligible for acoustic mitigation that have not previously received offers.

A digital copy of the 2022 AANC will be provided to Rotorua District Council to identify which properties are eligible that have not previously received an offer.

Yours faithfully

MARSHALL DAY ACOUSTICS LTD



Laurel Smith

Acoustician

Enclosed: Figure 1 2021 Actual Noise Contours
 Figure 2 2022 AANC & 2021 AANC 60 & 65 dB L_{dn}



District Plan Air Noise Area
 - - -
 2021 ANC
 [Blue Line] 65 dB Ldn
 Cadastral Boundaries
 [White Line]

Figure 1 - Rotorua Airport 2021 Actual Noise Contour 65 dB Ldn



District Plan Air Noise Area
 - - -
 2022 AANC
 60 dB Ldn
 65 dB Ldn
 2021 AANC
 60 dB Ldn
 65 dB Ldn
 Cadastral Boundaries
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Prepared by: LJS
 Date: 22/02/2022
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Figure 2 - Rotorua Airport 2022 Annual Aircraft Noise Contours 60 & 65 dB Ldn