MARSHALL DAY Acoustics

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7 March 2025

Rotorua Regional Airport Limited
PO Box 7221
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Rotorua 3042

Attention: Jayne Marsh

2024 ACTUAL NOISE CONTOURS AND 2025 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 2024 financial year (1 July 2023 - 30 June 2024) as per rule Noise-S3.1.a.iii[1] and Noise-S4.1.a[2] of the Reformatted Rotorua District Plan (District Plan).

The 'Actual Noise Contours' (ANC) uses aircraft movements during the busiest three months of the 2024 financial year as these contours represent the actual noise emissions from aircraft operations in FY24 ('2024 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 2024 financial year, with the projected growth over the next year added to produce the '2025 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 2024).

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.

[1] Previously A7.2.1(d)(iii)

[2] Previously A7.4.1

Noise Model Input and Assumptions

The 2024 ANC and 2025 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.

Aircraft movement data for FY24 was provided by the Airport Company. The busiest three consecutive months were January, February and March 2024 and the aircraft movements from these three months were used to calculate the 2024 ANC.

To calculate the 2025 AANC, the FY24 projected growth has been applied to the 2024 ANC data. To calculate the projected growth for FY25, we used a combination of actual aircraft movements numbers for the first 5 months (up to November 2024) and projected movements for the following 7 months. These movement numbers were 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 2024 ANC

Figure 1 shows the calculated 65 dB L_{dn} noise contour for the 2024 ANC compared with the District Plan Air Noise Area. This figure shows that the 2024 65 dB L_{dn} contour lies comfortably within the Air Noise Area and therefore aircraft noise complied with the limit.

Calculated 2025 AANC

Figure 2 shows the predicted 2025 AANC 60 and 65 dB L_{dn} contours compared with the previous year (2024). Figure 3 shows 2025 AANC compared with the busiest pre-pandemic year (2019). The 2025 AANC are slightly smaller than the 2024 AANC and are smaller than the 2019 AANC.

The purpose of the 2025 AANC is to identify whether any new houses are eligible for an offer for acoustic treatment. Aircraft operations and the corresponding noise are gradually returning to pre-pandemic levels. When compared to AANC from pre-pandemic years, the 2025 AANC do not contain any new properties. Therefore, it is likely that no new properties are eligible for acoustic mitigation that have not previously received offers.

A digital copy of the 2025 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

Stephanie King

Acoustic Engineer

Enclosed:	Figure 1	2024 Actual Noise Contours
	Figure 2	2025 AANC & 2024 AANC 60 & 65 dB L_{dn}
	Figure 3	2025 AANC & 2019 AANC 60 & 65 dB L_{dn}

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Figure 1 - Rotorua Airport 2024 Actual Noise Contour 65 dB Ldn

Prepared by: SRK
Date: 28/02/2025
0 0.05 0.1 0.2
km

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Figure 2 - Rotorua Airport 2024 and 2025 Annual Aircraft Noise Contours

Prepared by: SRK
Date: 28/02/2025
0 0.05 0.1 0.2
km

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District Plan Air Noise Area

2025 AANC

60 dB Ldn

65 dB Ldn

2019 AANC

60 dB Ldn

65 dB Ldn

Cadastral Boundaries

Classic Basemap Server - Deprecated Basemap - Eagle Technology, Land Information New Zealand, GEBCO,

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Figure 3 - Rotorua Airport 2024 and 2019 Annual Aircraft Noise Contours

Prepared by: SRK
Date: 3/03/2025

0 0.05 0.1 0.2 km

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