

15 September 2014

Rotorua Regional Airport Limited
PO Box 7221
Te Ngae
Rotorua 3042

Attention: Alastair Rhodes

Dear Alastair

ROTORUA REGIONAL AIRPORT 2014 COMPLIANCE CONTOURS & 2015 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 2014 financial year (1 July 2013 - 30 June 2014) as per rules 12.2.5.2 and 12.2.5.3 of the Rotorua District Plan (District Plan).

The projected contours are termed the 'Annual Aircraft Noise Contours' (AANC) and use the busiest three months of the 2014 financial year, with the projected growth over the next year added to produce the '2015 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 (rule 12.2.5.2).

The 'Actual Noise Contours' (ANC) also use the busiest three months of the 2014 financial year but no growth is added as these contours represent the actual noise emissions from aircraft operations in the 2014 financial year ('2014 ANC'). The purpose of these contours is to assess compliance with the noise boundaries in the District Plan.

Noise Rules

The noise rules that apply to the airport are contained in sections 12.2.5.2 and 12.2.5.3 of the District Plan.

Rule 12.2.5.2(a) sets a 65 dB L_{dn} noise limit on airport operations outside the Air Noise Area.

Rule 12.2.5.2(d) requires the Airport 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.

Rule 12.2.5.3(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 2014 ANC and 2015 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 the 2014 financial year (FY) was obtained from Airways Corporation New Zealand. The busiest three consecutive months were January, February and March 2014 and the aircraft movements from these three months were used to calculate the 2014 ANC.

To calculate the 2015 AANC, projected growth for the next 12 months has been applied to the data used to calculate the 2014 ANC. The growth estimate is provided by the airport authority.

The data obtained from Airways 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 over flights have also been included in the model and use different flight tracks to fixed wing aircraft.

Calculated 2014 ANC

Figure 1 shows the calculated noise contours for the 2014 ANC compared with the District Plan noise boundaries. This figure shows that noise from aircraft operations in 2014 complied with the noise limits.

Rule 12.2.5.2(e) requires noise measurements be undertaken once the noise level at the boundary between the Air Noise Area and the Inner Control Area reaches 64 dB L_{dn} . The predictions show that this threshold has been reached near the helipad area and thus we suggest that noise monitoring be undertaken in this area to verify the predictions and identify whether any noise mitigation measures will be required in the future.

Calculated 2015 AANC

Figure 2 shows the calculated 2015 AANC 55, 60 and 65 dB L_{dn} contours. To date the largest AANC's have been in 2014. To identify whether any new houses are eligible for an offer under the 2015 AANC Figures 3 and 4 have been prepared to compare the 2015 AANC with the 2014 AANCs. The 2015 AANC is larger than the 2014 AANC in some areas which means that some additional dwellings will be eligible for acoustic treatment offers in 2015.

A digital copy of the 2015 AANC will be provided to Rotorua District Council to prepare a list of properties in these areas that will now be eligible for acoustic treatment offers.

We trust this information is satisfactory. If you have any further questions please do not hesitate to contact us.

Yours faithfully

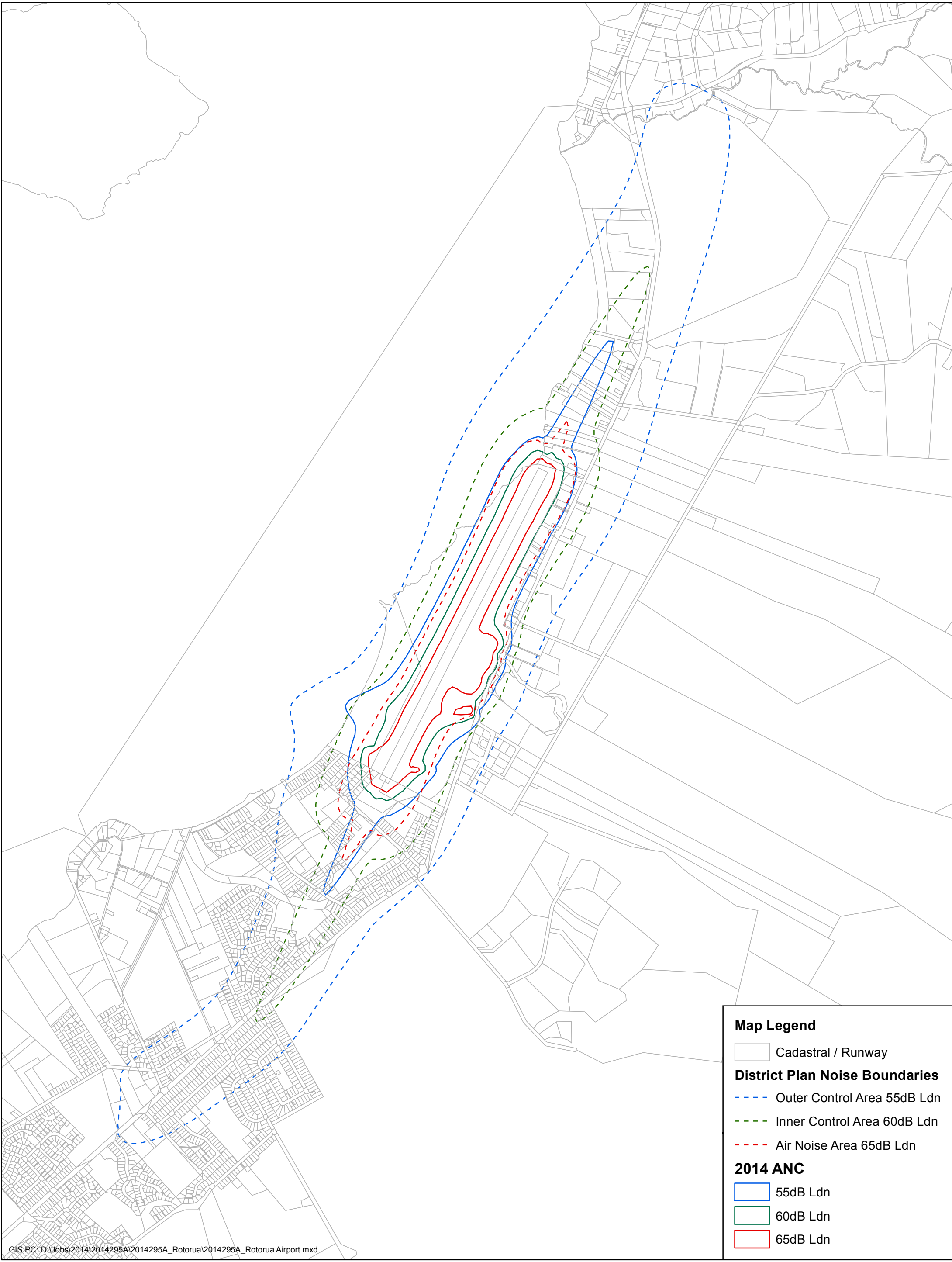
MARSHALL DAY ACOUSTICS LTD



Laura McNeill

Consultant

Enclosed:	Figure 1	2014 Actual Noise Contours
	Figure 2	2015 Annual Aircraft Noise Contours
	Figure 3	Comparison of 2014 and 2015 AANC 65 dB L _{dn}
	Figure 4	Comparison of 2014 and 2015 AANC 60 dB L _{dn}



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Map Legend

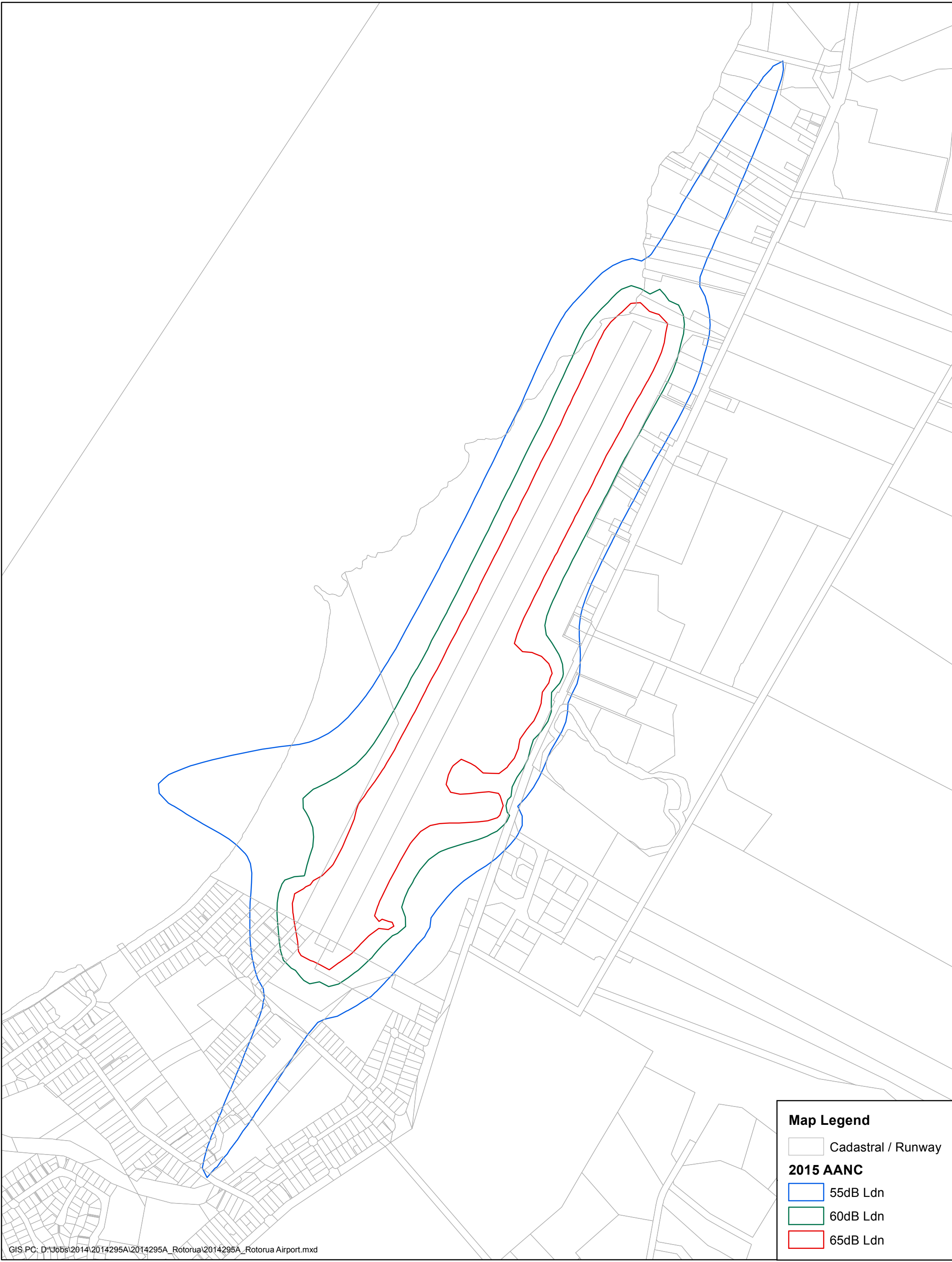
□ Cadastral / Runway

District Plan Noise Boundaries

- Outer Control Area 55dB Ldn
- Inner Control Area 60dB Ldn
- Air Noise Area 65dB Ldn

2014 ANC

- 55dB Ldn
- 60dB Ldn
- 65dB Ldn



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Map Legend

 Cadastral / Runway

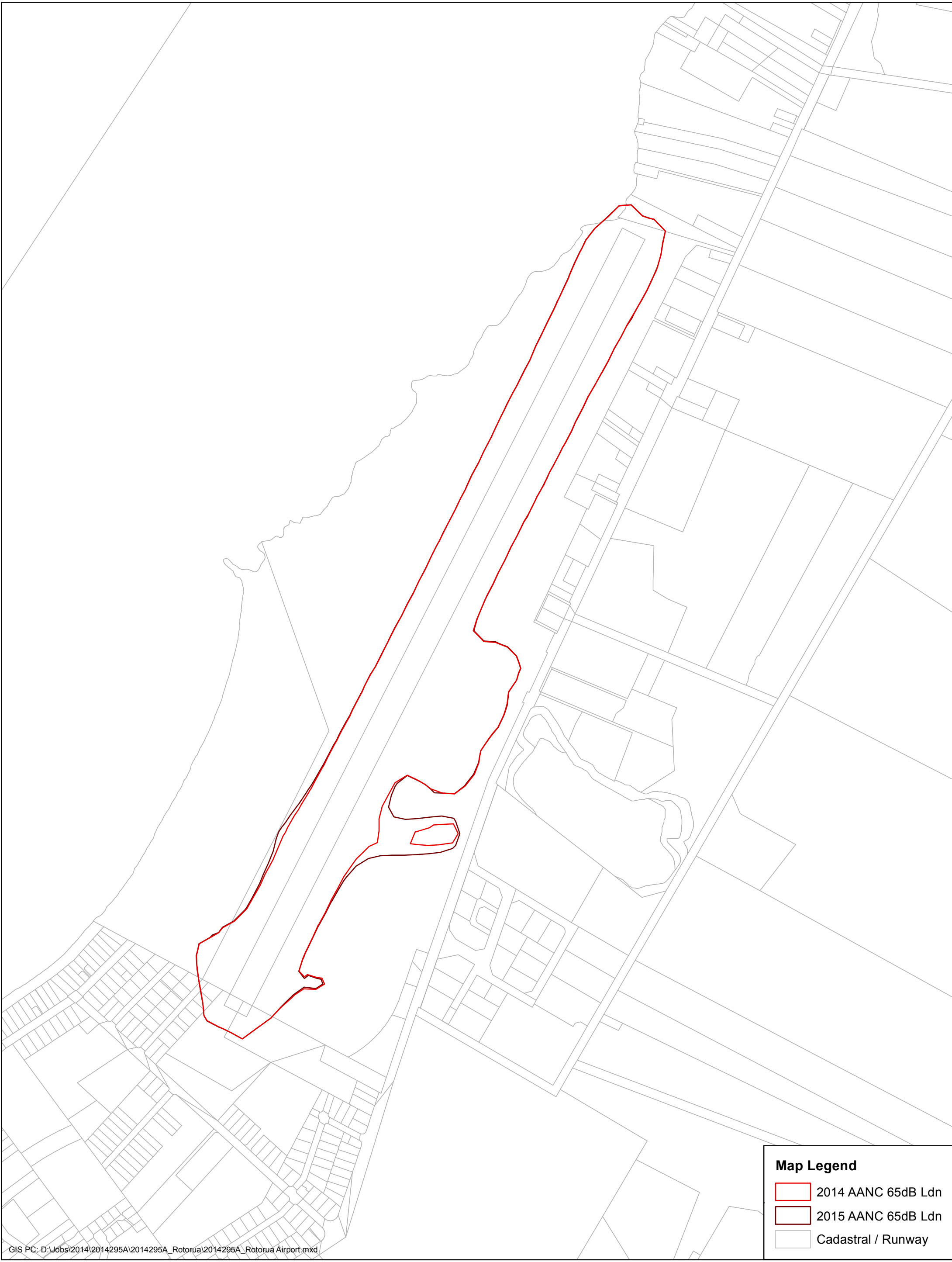
2015 AANC

 55dB Ldn

 60dB Ldn

 65dB Ldn





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Map Legend

- 2014 AANC 65dB Ldn
- 2015 AANC 65dB Ldn
- Cadastral / Runway

