

15 September 2014

Rotorua Regional Airport Limited
PO Box 7221
Te Ngae
Rotorua 3042

Attention: Alastair Rhodes

Dear Alastair

ROTORUA REGIONAL AIRPORT 2013 COMPLIANCE CONTOURS & 2014 ANNUAL AIRCRAFT NOISE CONTOURS

Introduction

Marshall Day Acoustics (MDA) has been engaged to prepare actual noise contours for 2013 and projected Annual Aircraft Noise Contours (AANC) for 2014 as per rules 12.2.5.2 and 12.2.5.3 of the Rotorua District Plan (District Plan).

The 2013 actual noise contours are based on actual aircraft movements that occurred during the busiest three months of the 2013 financial year (1 July 2012 to 30 June 2013). The purpose of these contours is to assess compliance with the airport noise limits defined in the District Plan.

Generally the AANC's for the following year (2014) are calculated by adding a projected growth to the actual movements in 2013. However, as the 2014 financial year has already finished, we have used actual movement data for the busiest three months in 2014 (FY) to produce these contours. The purpose of the AANC 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).

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 for the purpose of offering acoustic treatment to eligible dwellings.

Noise Model Input and Assumptions

The 2013 ANC and 2014 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 2013 financial year (July 2012 - June 2013) was obtained from Airways Corporation New Zealand. The busiest three consecutive months were January, February and March 2013 and the aircraft movements from these three months were used to calculate the 2013 ANC.

Instead of applying a projected growth to the 2013 data to calculate the 2014 AANC, we were able to use the actual aircraft activity in the 2014 financial year due to the timing of this work. The busiest three consecutive months in 2014 (FY) were January, February and March 2014. When compared to 2013 (FY), jet movements and general aviation movements decreased by 60% and 18% in 2014, respectively. Whereas helicopter movements increased by 53% in 2014.

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 movements have also been included in the model and use different flight tracks to fixed wing aircraft.

Calculated 2013 ANC

Figure 1 shows the calculated noise contours for the 2013 ANC compared with the District Plan noise boundaries. This figure shows that noise from aircraft operations in 2013 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 2014 AANC

Figure 2 shows the calculated 2014 AANC 55, 60 and 65 dB L_{dn} contours. To date the largest AANC was in 2011. Since 2011, no further acoustic treatment offers have been made because the subsequent AANC's have all been smaller therefore no new houses have been eligible for an offer.

To identify whether any new houses are eligible for an offer under the 2014 AANC Figures 3 and 4 have been prepared to compare the 2014 AANC with the 2011 AANC. The 2014 AANC is larger than the 2011 AANC in some areas which means that some additional dwellings will be eligible for acoustic treatment offers in 2014.

A digital copy of the 2014 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

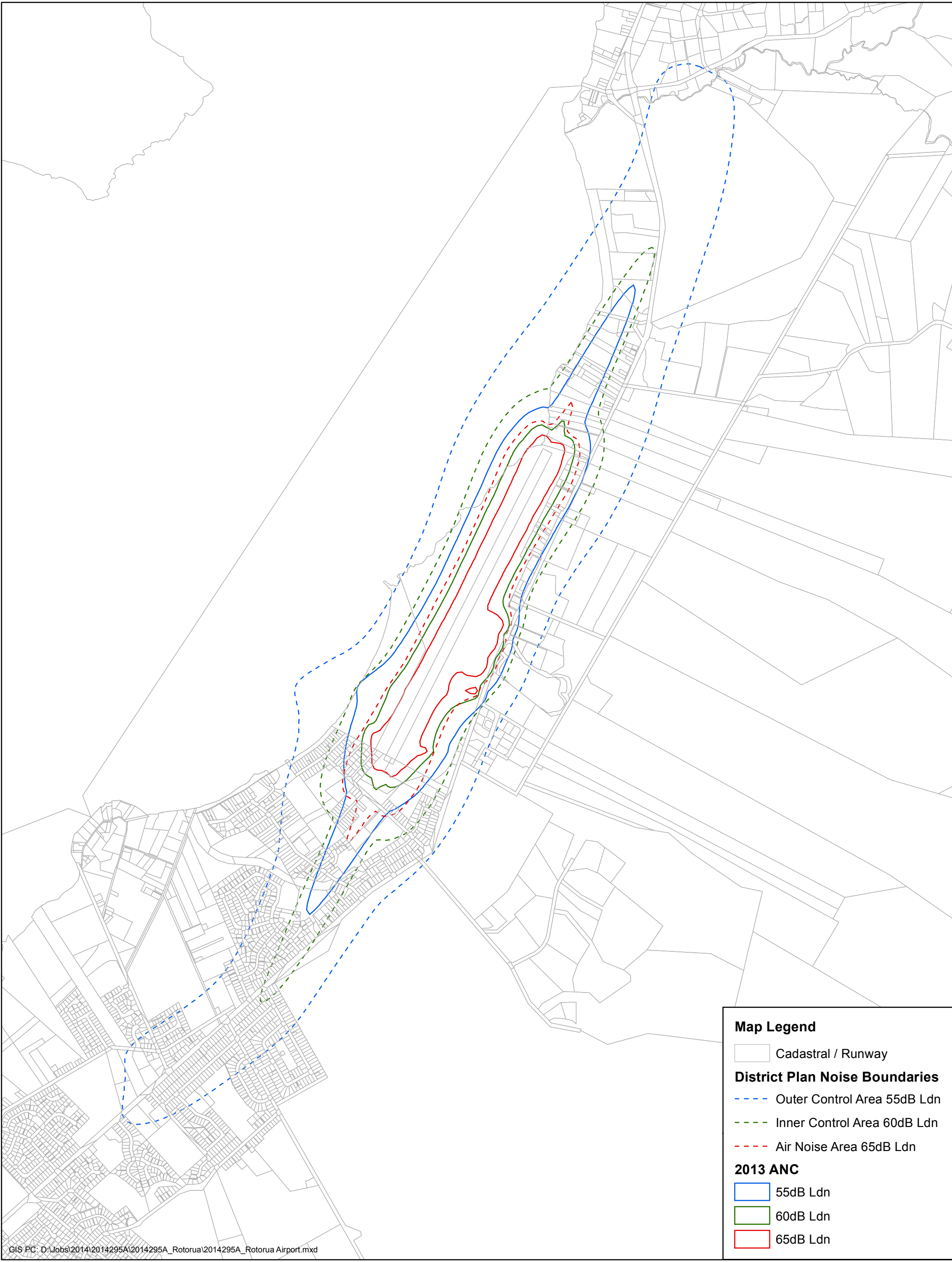
MARSHALL DAY ACOUSTICS LTD



Laura McNeill


Consultant

Enclosed:	Figure 1	2013 Actual Noise Contours
	Figure 2	2014 Annual Aircraft Noise Contours
	Figure 3	Comparison of 2011 and 2014 AANC 65 dB L _{dn}
	Figure 4	Comparison of 2011 and 2014 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

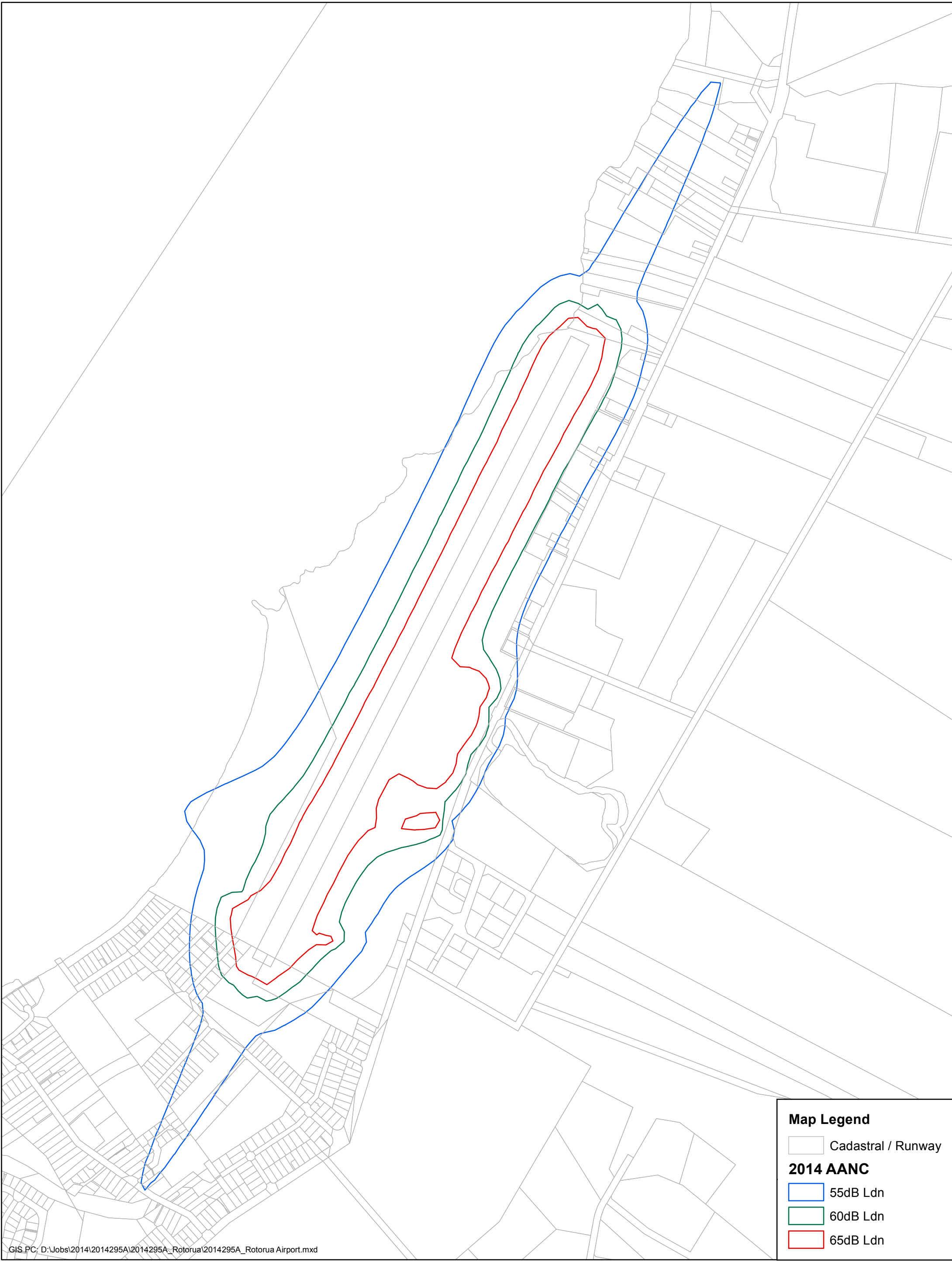
 Air Noise Area 65dB Ldn

2013 ANC

 55dB Ldn


 60dB Ldn

 65dB Ldn





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Map Legend

 Cadastral / Runway

2014 AANC

 55dB Ldn

 60dB Ldn

 65dB Ldn

