

21 January 2019

Rotorua Regional Airport Limited
PO Box 7221
Te Ngae
Rotorua 3042

Attention: Mr Mark Gibb

Dear Mark

2018 ACTUAL NOISE CONTOURS AND 2019 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 2018 financial year (1 July 2017 - 30 June 2018) as per rule A7.2.1(d)(iii) and A7.4.1 of the Rotorua District Plan (District Plan).

The 'Actual Noise Contours' (ANC) uses aircraft movements during the busiest three months of the 2018 financial year as these contours represent the actual noise emissions from aircraft operations in FY18 ('2018 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 2018 financial year, with the projected growth over the next year added to produce the '2019 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 (Appendix A7.4).

Noise Rules

The noise rules that apply to the airport are contained in Appendix 7 of the District Plan.

Rule 7.2.1(d) sets a 65 dB L_{dn} noise limit on airport operations outside the Air Noise Area.

Rule 7.2.1(d)(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.

Rule A7.4.1 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 2018 ANC and 2019 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 FY18 was provided by the Airport Company. The busiest three consecutive months were November and December 2017 and January 2018 and the aircraft movements from these three months were used to calculate the 2018 ANC.

To calculate the 2019 AANC, projected growth for the next 12 months has been applied to the data used to calculate the 2018 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 2018 ANC

Figure 1 shows the calculated noise contours for the 2018 ANC compared with the District Plan noise boundaries. This figure shows that the model predicts a minor exceedance where the solid red 65 dB L_{dn} contours extends beyond the dashed red Air Noise Area boundary. Otherwise the 2018 65 dB L_{dn} contour lies comfortably within the Air Noise Area.

The area of exceedance is due to the predicted noise from aircraft taxiing on and off the apron and helicopter take-offs and landings in this area. The model does not include the acoustic screening provided by the terminal and other airport buildings and therefore in practice it is likely that noise level where the exceedance is shown is lower than predicted. On-site sound level measurements would assist in calibrating the model and establishing whether there is a non-compliance at this point. Rule A7.2.1(d)(iv) 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 predicted contours show that this threshold may have been reached and thus we recommend 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 2019 AANC

Figures 2 and 3 show the predicted 2019 AANC 60 and 65 dB L_{dn} contours respectively compared with previous years. The shape of the contours has varied over the years and the 2019 AANC is generally larger than previous years except for some areas where the 2011 AANC was larger. These figures help to identify whether any new houses are eligible for an offer for acoustic treatment under the 2019 AANC. A digital copy of the 2019 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.

Yours faithfully

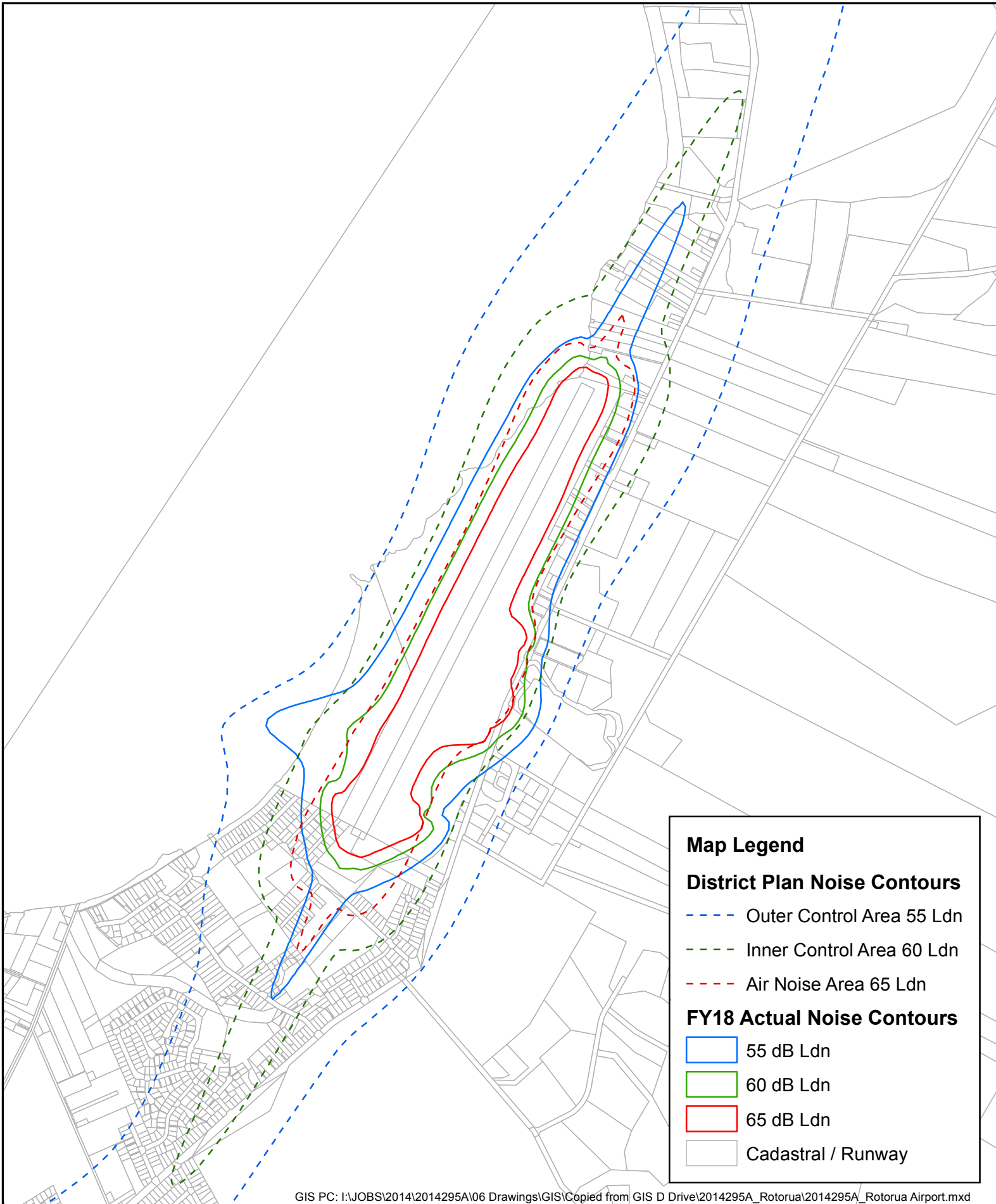
MARSHALL DAY ACOUSTICS LTD



Laurel Smith

Acoustician

Enclosed: Figure 1 2018 Actual Noise Contours
 Figure 2 AANC Comparison of 60 dB L_{dn} Since 2011
 Figure 3 AANC Comparison of 65 dB L_{dn} Since 2011



Map Legend

District Plan Noise Contours

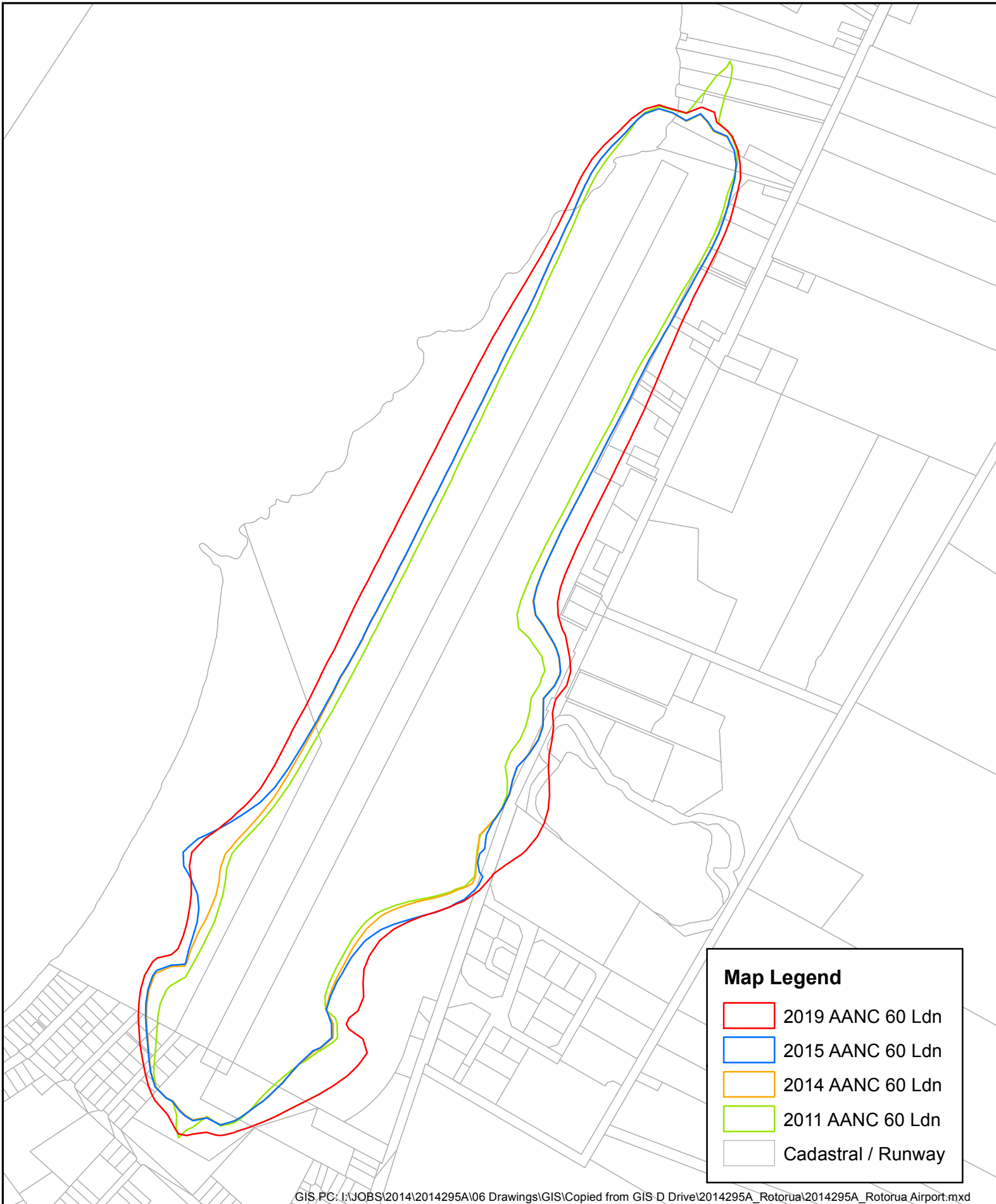
- Outer Control Area 55 Ldn
- Inner Control Area 60 Ldn
- Air Noise Area 65 Ldn

FY18 Actual Noise Contours

- 55 dB Ldn
- 60 dB Ldn
- 65 dB Ldn
- Cadastral / Runway

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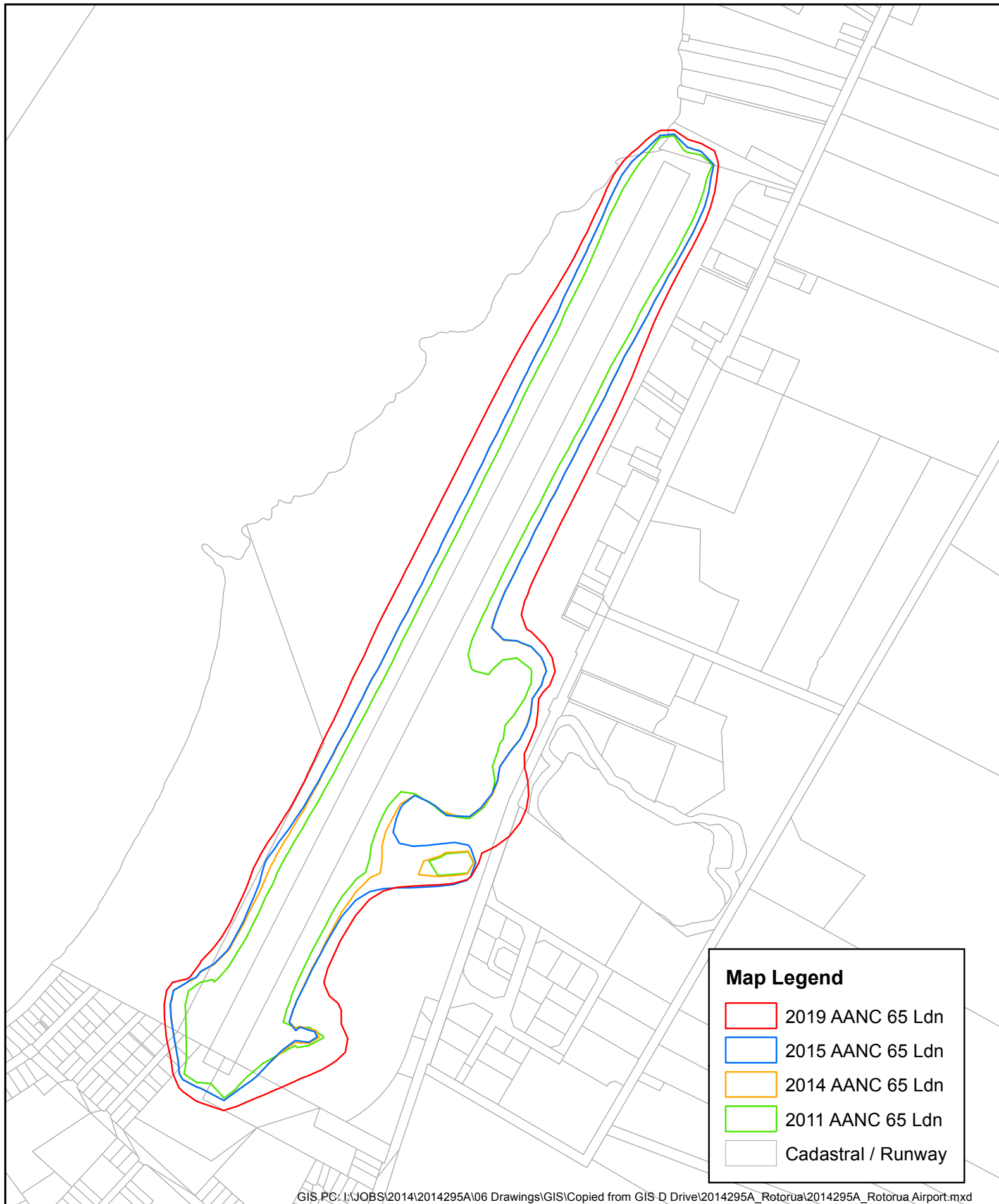


Map Legend

- 2019 AANC 60 Ldn
- 2015 AANC 60 Ldn
- 2014 AANC 60 Ldn
- 2011 AANC 60 Ldn
- Cadastral / Runway

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Map Legend

- 2019 AANC 65 Ldn
- 2015 AANC 65 Ldn
- 2014 AANC 65 Ldn
- 2011 AANC 65 Ldn
- Cadastral / Runway

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