

AUCKLAND AIRPORT 2020 FINANCIAL YEAR ANNUAL NOISE MANAGEMENT REPORT 14 December 2020



EXECUTIVE SUMMARY

Designation 1100 requires Auckland International Airport Limited (AIAL) to report on its aircraft noise monitoring programme. The programme involves continuous 'on the ground' monitoring of aircraft noise levels at three sites, noise contour calculations for actual and projected aircraft activity, engine testing noise monitoring and noise complaint monitoring. This report has been prepared by Marshall Day Acoustics and provides an overview of the noise monitoring programme for FY20 (Jul 2019 – Jun 2020).

The COVID-19 pandemic had a significant impact on aircraft operations during FY20, and its effects look to be ongoing into FY21 and beyond. Compared with FY19, operations decreased by 23% when compared to FY19, with night-time movements down 18% and daytime movements down 24%.

For the last quarter of FY20 (Q4 April – June) flights decreased by 343% when compared to the same quarter in FY19. This period represents the period where COVID 19 lockdowns and border closures were strongest in New Zealand.

Night-time movements made up 12% of the total movements in FY20 with the remaining movements (88%) occurring in the daytime. The runway usage during FY20 was within 6% of the typical average runway split (70%/30% Runway 23/05) in favour of Runway 23L.

The Puhinui School and Velodrome noise monitors calibrated satisfactorily throughout FY20, with just the Prices Rd monitor experiencing some calibration problems. There were some monitor malfunctions in FY20 also. The Velodrome monitor was down for five months between November 2019 and April 2020 due to it being vandalised. The Puhinui School and Prices Rd monitors were down for a few days over the year due to a combination of power failures and software issues. Compared with FY19, the measured noise levels for FY20 have decreased by 1.2 dB at Puhinui School, 0.8 dB at the Velodrome, and by 0.1 dB at Prices Rd.

The three permanent noise monitors are located on the outer boundary of the High Aircraft Noise Area (HANA). The measurement results from all noise monitors demonstrate compliance with the 65 dB L_{dn} noise limit at the outer boundary of the HANA. The calculated noise contours based on actual FY20 aircraft operations show compliance with the 60 and 65 dB L_{dn} limits at all locations along the MANA and HANA boundaries respectively.

The projected Annual Aircraft Noise Contours (AANC) for FY21 (2021 AANC), which represents activity occurring in the coming year, shows an appreciable decrease (6.0-6.1 dB) in noise compared with the 2020 AANC. This is due to the projected effects of the pandemic. The Noise Mitigation Programme utilises this information to identify properties eligible for sound insulation offers. This year no new properties are eligible for offers as the 2021 AANC are significantly smaller than the 2020 AANC.

Noise from engine testing activities has been compliant with the relevant noise limits throughout FY20. The highest recorded L_{dn} at each of the three measurement locations was 43 dB, which is 12 decibels below the noise limit. We note that there is a gap in the data at the end of July 2019 due to AIAL upgrading equipment and reporting processes. We expect that a breach of the noise limit wouldn't have occurred during this time. This is based on historical engine testing activity in late June and from trends in the 2020 financial year in this time.

There were 261 complaints received in FY20 made by 65 complainants. We note that 118 (45%) of the complaints received in FY20 were from 2 people. The total number of complaints received in FY20 has decreased by 71% when compared to FY19. The total number of people complaining in FY20 has decreased by 48% when compared to FY19.

The complaint numbers for FY20 are much lower than the historical peak in FY14. There was a marked increase in the number of complaints in FY14 due to the trial of three new SMART approaches at the airport. The number of complaints and complainants has reduced appreciably since then but continues to be well above historical levels.

The complaints for FY20 were predominantly from the Central Suburbs, with the remainder coming mostly from South Auckland and East Auckland. Most people made less than 5 complaints with 7 people making more than 5 complaints during FY20.

There was a loose correlation between the number of complaints and usage of Runway 05 - departures to the east. A spike in complaints in January was due to an increase in complaints from one complainant.

The noise reduction initiatives in FY20 have been summarised in Section 9.0. Future initiatives for FY21 were summarised in a document presented to the ANCCG. In the document several areas were identified where noise reduction initiatives could be investigated and implemented. Industry members outlined their response in a document presented to the September 2019 ANCCG meeting. It sets out where activity is proposed over coming years and where more is planned.

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1.0 INTRODUCTION

Designation 1100 requires AIAL to report on its statutory aircraft noise monitoring programme. The programme involves continuous 'in-field' monitoring of aircraft noise levels at three sites, noise contour calculations for actual and projected aircraft activity, engine testing noise monitoring and monitoring of public noise complaints.

The Notice of Requirement Lodged in August 2017 to alter conditions in the Designation was approved by Council in late 2019. The updated Conditions have been used for this report along with the updated Aircraft Noise Areas in the Designation.

Designation 1100 is the framework within which the Airport operates. The designation sets out noise performance criteria and noise management obligations for the Airport to comply with. Condition 5(d) of Designation 1100 requires AIAL to undertake the following:

- Monitor noise from aircraft operations near the boundary of the High Aircraft Noise Area (HANA) to demonstrate that the Day/Night level of 65 dB L_{dn} is not exceeded outside the HANA
- Use recognised noise modelling software and noise monitoring data to calculate whether the noise from aircraft operations exceeds 60 dB L_{dn} anywhere outside the Moderate Aircraft Noise Area (MANA)
- Calculate noise levels to ensure compliance with Condition 10 of the Designation relating to the Noise Mitigation Programme

Condition 13(b) of Designation 1100 requires the airport to calculate and report on the noise level from engine testing activities and Condition 9(c) requires the airport to report on the noise complaints it receives.

AIAL is required to prepare an Annual Noise Management Report each year under Condition 9(b) which summarises the measurements and modelling required by Condition 5(d) and identifies past and future initiatives for noise reduction.

This report has been prepared by Marshall Day Acoustics and provides an overview of the noise monitoring programme for the 2020 financial year (Jul 19 – Jun 20) including:

- A review of the noise monitoring system, calibration and results
- Calculation of noise contours for actual aircraft activity (ANC) to determine compliance
- Calculation of the Annual Aircraft Noise Contours (AANC) for projected aircraft activity to determine offers for the sound insulation programme;
- Summary of past and future initiatives to reduce noise in the community

A summary of the air traffic records for the 2020 financial year has also been included in this report along with flight path diagrams, calculation of noise from engine testing activities and a summary of noise complaints received.

A glossary of terminology is given in Appendix A.

2.0 AIR TRAFFIC RECORDS

Table 1 shows a summary of aircraft movement numbers at Auckland Airport during FY20 (Jul-19 to Jun-20) with FY19 data (Jul-18 to Jun-19) included for reference.

Table 1: Aircraft Movements Numbers

	FY19	FY20	Difference	% Change
Total Movements	181,356	139,609	-41,747	-23%
Daytime Movements (7am to 10pm)	161,018	122,989	-38,029	-24%
Night-time Movements (10pm to 7am)	20,338	16,620	-3,718	-18%

This data was retrieved from the Airport's noise m Airways Corporation NZ.

We note that aircraft movement numbers from the monitoring system are slightly different than those reported on the Airport's website. There was a discrepancy of 472 movements for FY20 which is about 0.3% difference. This discrepancy is likely due to aircraft flying into the airport that are not captured by the airports reporting but are picked up by Casper. This could include things such as helicopters and small aircraft. This discrepancy would have a negligible impact on noise levels reported from the monitoring system.

Overall, aircraft activity during FY20 decreased by 23% when compared to the previous year. Night-time movements decreased by 18% and movements in the daytime decreased by 24%. Night-time movements made up 12% of the total movements in FY20 with the remaining 88% of movements occurring in the daytime.

For the last quarter of FY20 (Q4 Apr - Jun) flights decreased by 343% (42,942 FY19 \rightarrow 9,696 FY20) when compared to the same quarter in FY19. This period represents the period where COVID 19 lockdowns and border closures were strongest in New Zealand.

Figure 1 shows the aircraft movements broken down by broad aircraft type. 59% of flights were jet aircraft with turboprops making up 38% of the total flights.

Figure 1: Aircraft Movements by Aircraft Type



Table 2 below shows the runway usage for FY20. The typical average runway split is 70% Runway 23 (arrivals from the east, departures to the west) and 30% Runway 05 (arrivals from the west, departures to the east). The runway usage for FY20 was slightly different to the long run average runway split with 76% Runway 23 usage and 23% Runway 05 usage. A small number of movements were helicopters and thus were not associated with a runway.

Table 2: Runway Usage

	Historical Runway Split	FY20 Runway Split	Deviation
Runway Mode 23	70%	76%	6%
Runway Mode 05	30%	23%	070

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This data was retrieved from the Airport's noise monitoring system which uses air-traffic data provided by



3.0 FLIGHT PATHS

The flight paths that aircraft utilise are variable and depend on the aircraft type, aircraft weight, destination/origin, the weather at the time, other air traffic in the area, and other factors. One major factor that influences flight paths is the wind direction. In Auckland, the prevailing wind is from the southwest and under these conditions aircraft use Runway Mode 23 where departing aircraft take off towards the west over the Manukau Harbour and arriving aircraft land on the eastern end of the runway, overflying Papatoetoe.

Figure 2 shows the flight paths for the busiest day (7am – 10pm) in FY20 when westerly winds were prevailing (20-Dec-19) and Figure 3 shows the flight paths for the busiest night (10pm – 7am) in FY20 when westerly winds were prevailing (20-Dec-19). Each flight path is coloured by altitude. Larger versions of these figures are shown in Appendix B along with figures for the busiest easterly wind day/night (29-Nov-19).

Figure 2: Individual Flight Paths for the Busiest RW23L Day (7am - 10pm) in the FY20



Figure 3: Individual Flight Paths for the Busiest RW23L Night (10pm - 7am) in the FY20



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MONITORED NOISE LEVELS 4.0

AIAL has three permanent noise monitors located on the boundary of the HANA at; Puhinui School, the Velodrome and Prices Road. The location of the monitors is shown in Figure 4 along with a summary of the monitoring results for FY20 and the HANA and MANA. The noise limit at the boundary of the HANA is 65 dB L_{dn} (365-day average).

Figure 4: Noise Monitor Summary



The Puhinui School and Velodrome noise monitors calibrated satisfactorily throughout FY20, with just the Prices Rd monitor experiencing some calibration problems in August 2018 and May 2019. There also were some monitor malfunctions throughout the year:

- The Puhinui Monitor was down for 26 days due to a combination of power failures and software issues
- The Velodrome Monitor was down for approximately five months due to it being vandalised
- The Prices Road Monitor was down for three days due to a software issue

Table 3 compares the measured noise levels for FY19 with FY20. Noise levels in FY20 decreased by 1.2 dB at Puhinui School, 0.8 dB at the Velodrome, and 0.1 dB at Prices Rd. A change in noise level of 0.1-1.2 decibels is small and would generally not be perceptible to those living and working inside the Aircraft Noise Areas.

Table 3: Measured Noise Levels

Monitor Location	FY19	FY20	Difference
	dB L _{dn}	dB L _{dn}	(dB)
Puhinui School	61.2	60.0	-1.2
Velodrome	62.0	61.2	-0.8
Prices Road	61.9	61.8	-0.1

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2020 ACTUAL NOISE CONTOUR (ACTUAL ACTIVITY) - ANC 5.0

The ANC noise contours represent the actual aircraft activity occurring in FY20. The purpose of these noise contours is to assess compliance with the MANA and HANA each year. The noise contours have been calculated in the INM version 7.0d using aircraft movement data obtained from the noise monitoring system.

Figure 5 shows the calculated 60 and 65 dB L_{dn} contours for FY20. The HANA and MANA boundaries are also shown in Figure 5. Noise from aircraft operations must not exceed 65 and 60 dB L_{dn} at the HANA and MANA Boundaries respectively.

Figure 5: 2020 Actual Noise Contour (ANC)



The calculated noise contours show that noise from aircraft operations in FY20 complied with the noise contours in the Auckland Unitary Plan (AUP). It is important to verify the noise model against the measured levels to ensure an acceptable tolerance. Table 4 lists the calculated noise level at each monitoring site compared with the actual measured noise level for FY20. In this case the model is within 1 dB of the measured levels at the three monitoring locations. This is a reasonable representation for a compliance assessment.

Table 4: Calculated and Measured Noise Levels (Actual Activity FY20)

Monitor Location	Measured Noise Level L _{dn} (dB)	Calculated Noise Level L _{dn} (dB)	Difference (dB)
Puhinui School	60.0	61.1	+1.1
Velodrome	61.2	61.3	+0.1
Prices Road	61.8	62.8	+1.0

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6.0 2021 ANNUAL AIRCRAFT NOISE CONTOUR (PROJECTED ACTIVITY) - AANC

The Annual Aircraft Noise Contours (2021 AANC) will be published in October 2020 and represent noise from aircraft activity predicted to occur in the coming year. The purpose of these noise contours is to identify which properties are eligible to receive an offer for noise mitigation treatment. Figure 6 shows the 2021 AANC contours compared to the HANA and MANA.

Figure 6: 2021 Annual Aircraft Noise Contour (AANC)



The AANC are calculated using the latest version of the FAA Integrated Noise Model (INM version 7.0d). The projected aircraft activity has been based on actual aircraft movements for the 12 months ending 30 June 2020. A predicted growth factor provided by Auckland Airport has been applied to this data to represent movement numbers for the forthcoming year.

Appendix C shows the 2020 AANC compared to the 2021 AANC. The 2021 AANC are significantly smaller than the 2020 AANC, and well within the HANA and MANA contours. This is a result of the large reduction in flights projected for the FY21 due to the COVID-19 pandemic. As such, no new noise mitigation treatment offers are required this year.

Table 5 lists the predicted noise levels at the monitoring sites for the 2020 AANC and 2021 AANC. The noise levels in the 2021 AANC are appreciably lower than the 2020 AANC, due to the COVID-19 pandemic.

Table 5: 2020 AANC Calculated Noise Levels	(Projected	Activity)
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Monitor Location	2020 AANC L _{dn} (dBA)	2021 AANC L _{dn} (dBA)	Difference
Puhinui School	61.6	55.5	-6.1
Velodrome	61.8	55.8	-6.0
Prices Road	63.6	57.6	-6.0

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7.0 ENGINE TESTING

Engine testing noise emissions are limited to 55 dB L_{dn} (7 day rolling average) and 75 dB L_{max} (10pm – 7am) received in the "Identified Area" shown in Figure 1 of Designation 1100. Noise emissions from engine testing activities are calculated and assessed for compliance monthly at three key locations in the Identified Area (Res1, Res2, Res3). The calculations are based on records of engine testing activity provided by the airport users and established noise levels relating to each type of test.

Figure 7 shows the lowest, highest and average 7 day rolling L_{dn} noise level at each of the three measurement locations for FY20. The highest L_{dn} calculated at each of the three measurement locations was 43 dB, which is 12 decibels below the noise limit.

Figure 7: FY20 Engine Testing Monitoring Summary



Figure 8 shows a graph of the 7-day rolling L_{dn} noise level at the three measurement locations for each day. Generally, the noise levels were below 40 dB L_{dn} . We note that there is a gap in the data at the end of July 2019 due to AIAL upgrading equipment and reporting processes. We expect, from historical engine testing activity in late July and from trends in the 2020 financial year, that the noise limit would not have been breached in this time.

The purpose of the L_{Amax} limit is to control the maximum noise level during engine testing at night to protect against sleep disturbance. The L_{Amax} level during a test depends on the aircraft type, power setting and propagation conditions but is not affected by the duration of testing. It has been previously ascertained that aircraft undergoing engine testing at Auckland Airport comply with the 75 dB L_{Amax} limit at the three assessment locations for all power settings.

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Figure 8: Engine Testing Noise Emissions (Rolling 7 Day Ldn)



8.0 NOISE COMPLAINTS

People may make multiple complaints during the year and each complaint could relate to either a specific aircraft overflight or a more general issue such as increased overflights at night. Therefore, the terminology used in this report when summarising the statistics is as follows:

- The number of 'complainants' (no. of people who complain),
- The number of 'generic' noise complaints (e.g. "there was more aircraft noise last night") and
- The number of 'specific' event complaints (e.g. "the flight at 6:25pm last night was particularly noisy")
- The number of 'question' noise enquiries (e.g. "can you tell me more about how noise is managed at the airport")

During FY20 the airport received 261 noise complaints from 65 people, 224 (86%) of these were specific complaints, 29 (11%) were generic complaints, and 8 (3%) were question enquiries.

The complaints for FY20 came predominantly from the Central Suburbs, with the remainder coming mostly from South Auckland and East Auckland

Table 6 shows the noise complaints and number of people complaining over the past 5 years.

Table 6: Summary of Complaints since 2015

	FY16	FY17	FY18	FY19	FY20
No. Complaints	1,980	581	467	905	261
No. People Complaining	123	72	155	132	65

We note that 118 (45%) of the complaints received in FY20 were from 2 people and one person made 70 (27%) of the complaints. The total number of complaints received in FY20 has decreased by 71% when compared to FY19. There was a marked increase in complaints in FY14 and FY15 due to the trial of three new SMART approaches at the airport. The number of complaints since FY15 has reduced by 87% since then but continues to be well above historical levels seen prior.

The number of people complaining also increased in FY14 and FY15 due to the SMART trial. In FY20 the number of people complaining decreased by 44% when compared to FY15. The total number of people complaining in FY20 decreased by 48% when compared to FY19.

Figure 9 shows the number of complaints made in each month of FY19 and FY20. The number of complaints received per month ranged between 2 and 70 in FY20. The complaints received each month in FY20 was lower than in FY19 for all months apart from July. The spike in the number of complaints in April FY19 was due to a significant number of complaints made by one person, and the very small number of complaints in April FY20 was due to the COVID-19 pandemic. There are usually more complaints in the months of January, February and March.

Figure 9: Aircraft Noise Complaints in FY19 and FY20



Figure 10 shows the number of people that complained in each month of FY19 and FY20. Each month the number of people making the complaints ranged between 2 and 12 during FY20. Figure 11 shows the specific complaints at night-time (10pm-7am) compared with daytime for each month in FY20.





Figure 10: Number of People Complaining about Aircraft Noise in FY19 and FY20



Figure 11: Number of Specific Complaints (by time of day)



Daytime flights made up 32% of the aircraft overflights complained about in FY20 with the remaining 68% relating to aircraft events at night-time. There is little correlation between complaints and frequency of aircraft movements.

Figure 12 shows the percentage usage of Runway 05 compared to the number of specific complaints. There is a loose correlation between runway use and the number of complaints received. The spike in complaints in January was due to many complaints made by one complainant.

Historically it has been found that the airport receives a higher number of complaints when Runway 05 is used (departures over East Auckland). The increased disturbance caused when Runway 05 is in use is most likely because departures overfly the Central and Eastern suburbs under these conditions. Departure flight tracks are more dispersed and therefore overfly a larger area of the central and eastern suburbs than arrivals. This is demonstrated by comparing the flight tracks in Appendix B. Departures also have a different noise character and can be louder than arrivals as the aircraft are climbing under power.

Figure 12: Number of Aircraft Noise Complaints vs. Usage of Runway 05



Figure 13 shows the number of complaints received by area. Appendix D gives more detail on the number of complaints received from each suburb. Greenlane and Mt Eden residents made the largest number of complaints (46%) with the remaining complainants spread over 38 suburbs. All but one of the complaints in Greenlane were made by 1 person, and similarly all but one of the complaints in Mt Eden were also made by one person.

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Figure 13: Complaints by Area



Figure 14 shows the locations of people complaining in FY20 coloured to represent the number of complaints made by that person, the local board outlines are shown behind.

The map shows that the location of complainants is mostly spread over Central and South Auckland, with some in East Auckland, and a small number in West Auckland and North Shore. Most people made 5 or less complaints (blue dots), with two people making more than 5 (green dots), four people making more than 10 (orange dots), and one person making more than 50 (red dot) during FY20.

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Figure 14: Number of Complaints per Person in FY20



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9.0 NOISE REDUCTION INITIATIVES

Condition 9(b) requires AIAL to report on any initiatives to reduce aircraft noise in the community for both the financial year being reported on and the forthcoming financial year. AIAL is required to detail the outcomes of initiatives investigated in the financial year being reported on. This section gives details of these initiatives.

Past Initiatives

0800 Complaints Number

In March 2020 Auckland Airport upgraded the complaints hotline from an '09' to an '0800' number to provide better access for people wishing to lodge complaints. The 0800 number is currently operational and enables people to lodge complaints free of charge 24 hours a day.

Noise Management Web Page Improvements

In December 2019 Auckland Airport in collaboration with the Aircraft Noise Community Consultative Group (ANCCG) made several changes to their 'Managing Aircraft Noise' web pages. These changes resulted in better visibility of key information such as how to make a complaint and information relating to the ANCCG and how noise is managed at Auckland Airport. These changes resulted in positive feedback from ANCCG members and stakeholders.

Orange SMART Track

A new SMART track called 'Orange' was implemented in September 2019 on a trial basis (see Figure 15). This track was implemented to provide an additional option to the 'Red' SMART track which has been in operation since 2012 and overflies the populated areas of Wattle Downs and Manurewa.

Figure 15: SMART approaches



In early 2020 usage of the Orange track ceased after several months of the 12-month trial to recalibrate the arrival profile slightly. The track will commence usage again in September 2020, but the usage of the track is expected to be significantly reduced due to the COVID-19 pandemic, and so the trial will occur for a further full 12-month period and end in September 2021.

A report of the trial will be produced including information about noise measurements and complaints throughout the trial.

In addition to the above, improvements to the Noise Mitigation Programme have been made, including:

- they found the process and whether there are any areas for improvement;
- for the equipment;
- Another issue found was that many homeowners were apprehensive to enter a covenant with Auckland Airport as part of the Noise Mitigation Programme. In response, Auckland Airport has answers common questions;
- ٠ Packages are compliant and effective in reducing the internal noise environment.

Future Initiatives

The Independent chair of the ANCCG prepared a document in May 2019 summarising potential focus areas for coming years. In the document a number of areas were identified where noise reduction initiatives could be investigated and implemented. Industry members outlined their response in a document presented to the September 2019 ANCCG meeting. It sets out where activity is proposed over coming years and where more is planned.

Many of these initiatives are currently on hold due to the COVID-19 pandemic and the fact that the effectiveness of any new initiatives would be hard to measure given the unprecedented low number of flights. However, the ANCCG continue to meet and discuss these initiatives and where they may be able to be implemented in the future.

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Homeowners who have received a noise mitigation package are now surveyed for feedback on how

A common trend found was that homeowners were unsure of who to contact should the have any questions or issues about the equipment. As a result, Auckland Airport developed a 'Post-Installation Folder' which is given to homeowners and tenants once installation is complete. The folder contains important contact details and information about the package and also includes the operation manuals

developed a one-page covenant fact sheet which clearly explains the purpose of the covenant and

Lastly, to continually confirm the noise mitigation packages are compliant, Auckland Airport has begun to measure internal noise environment of 4 properties (two MANA and two HANA) which have had a Noise Mitigation Package installed in the last 12 months. One MANA property (which had a Noise Mitigation package installed on 15 October 2018) has been measured and the results reported show the internal noise level of the property with the window closed is 37 dBA Ldn (which is below the noise level required by Designation 1100 of 40 dBA Ldn). One HANA property has been measured and the results show an internal noise level of 38 dBA Ldn. This shows that Auckland Airport's Noise Mitigation



APPENDIX A GLOSSARY OF TERMINOLOGY

dBA	A measurement of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
L _{eq}	The time averaged sound level (on a logarithmic/energy basis) over the measurement period (normally A-weighted).
L _{dn}	The day-night sound level which is calculated from the 24-hour L_{eq} with a 10 dBA penalty applied to the night-time (2200-0700 hours) L_{eq} (normally A-weighted).
L _{max}	The maximum sound level recorded during the measurement period (normally A-weighted).
Noise	A sound that is unwanted by, or distracting to, the receiver.
Ambient Noise	Ambient Noise is the all-encompassing noise associated with any given environment and is usually a composite of sounds from many sources near and far.
NZS 6805:1992	New Zealand Standard NZS 6805:1992 "Airport Noise Management and Land Use Planning"

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APPENDIX B FLIGHT TRACK DIAGRAMS

Individual Flight Paths for the Busiest RW23L Day (7am - 10pm) in FY20 **B1**









B2 Individual Flight Paths for the Busiest RW23L Night (10pm - 7am) in FY20











Individual Flight Paths for the Busiest RW05R Day (7am - 10pm) in FY20 **B3**









B4 Individual Flight Paths for the Busiest RW05R Night (10pm - 7am) in FY20







APPENDIX C 2020 & 2021 AANC COMPARISON



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APPENDIX D NOISE COMPLAINTS BY SUBURB

Suburb	No. Complaints	
Beach Haven	1	
Beachlands	18	
Bucklands Beach	2	
Clendon Park	3	
Clevedon	1	
Clover Park	1	
Cockle Bay	1	
Drury	2	
East Tamaki Heights	7	
Epsom	9	
Farm Cove	3	
Flat Bush	13	
Greenhithe	2	
Greenlane	71	
Grey Lynn	1	
Gulf Harbour	1	

Suburb	No. Complaints		
Henderson	1		
Mangere	2		
Manukau Heads	20		
Manurewa	1		
Mount Eden	49		
Mount Roskill	2		
Northpark	1		
One Tree Hill	13		
Onehunga	5		
Oneroa	1		
Pakuranga	1		
Papatoetoe	7		
Ranui	5		
Remuera	7		
Saint Andrews	1		
Shelly Park	3		

Suburb	No. Complaints
Sunnyhills	1
The Gardens	1
Titirangi	1
Waiheke Island	1
Weymouth	1
Wiri	1

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