

ANCCG Meeting

Monitoring Period

May 2017 – July 2017

Meeting: 6 September 2017



Flight

Aircraft Operations

Figure 1: Number of Aircraft Operations per Month

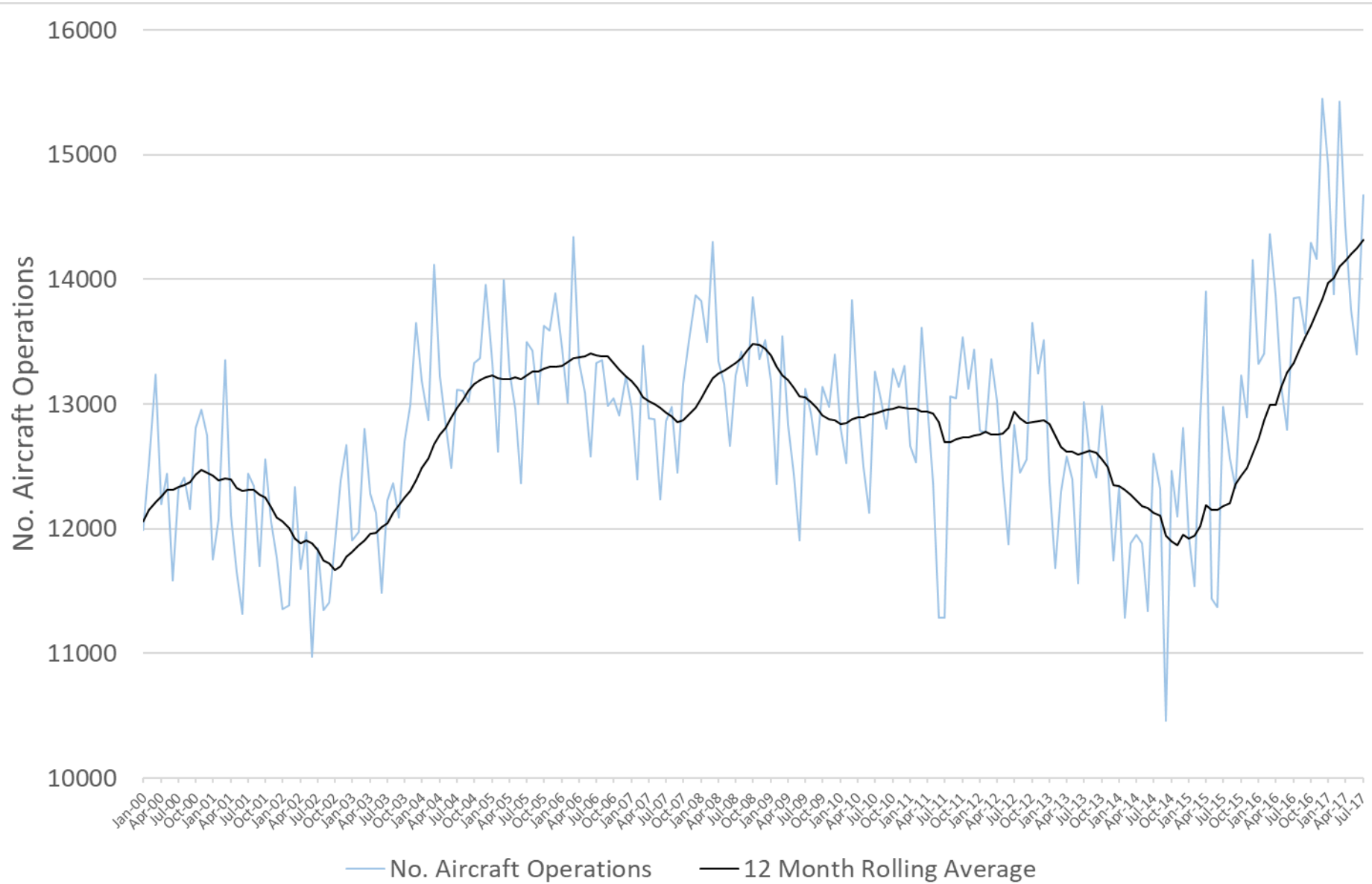


Table 1: Summary of Aircraft Operations

Operation	Total	Day	Night
Arrivals	20,883	17,786	3,097
Departures	20,887	19,142	1,745
Circuit	68	66	2
Total	41,838	36,994	4,844

Table 2: Average Daily Aircraft Operations

Total	Day	Night
455	402	53

Figure 2: Aircraft Operations by Time

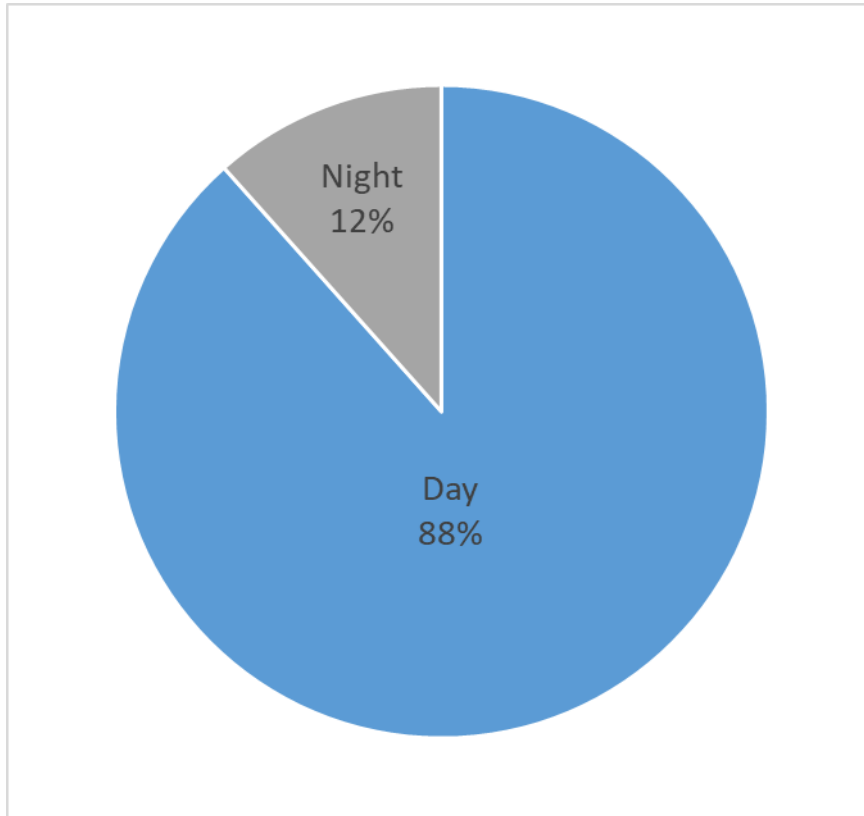


Figure 3: Aircraft Operations by Aircraft Type

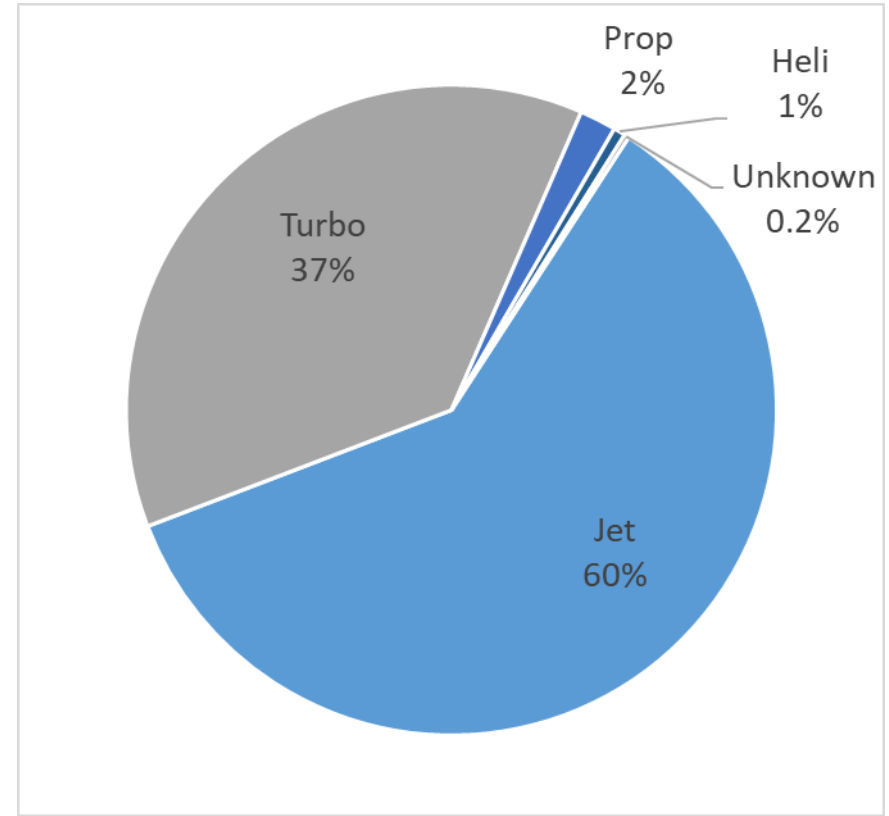
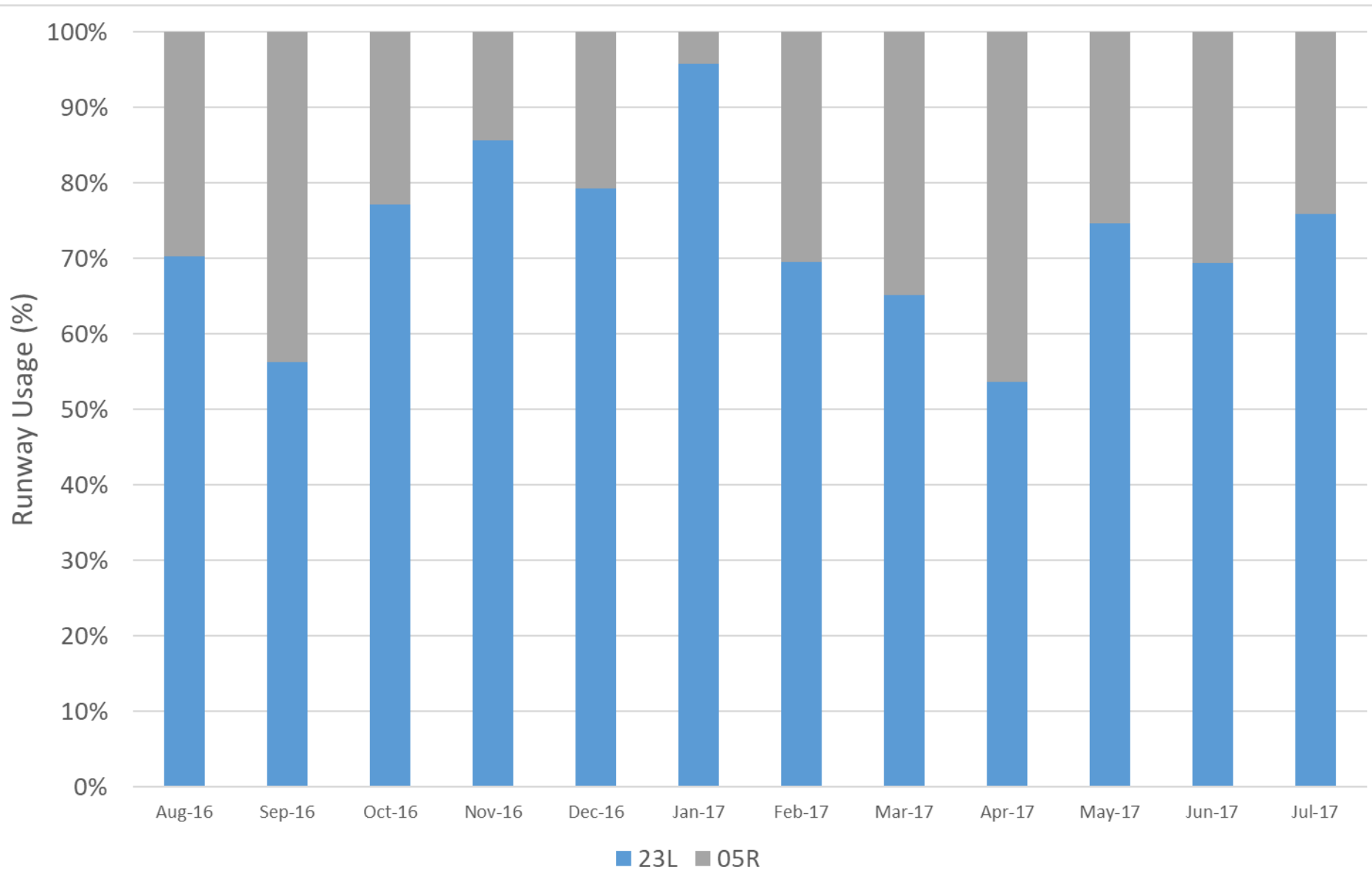


Figure 5: Aircraft Operations by Runway





Flight Path Diagrams

Figure 6: Jet Flight Paths for a Busy Runway 23L Day
100% Westerly Winds/Runway 23L

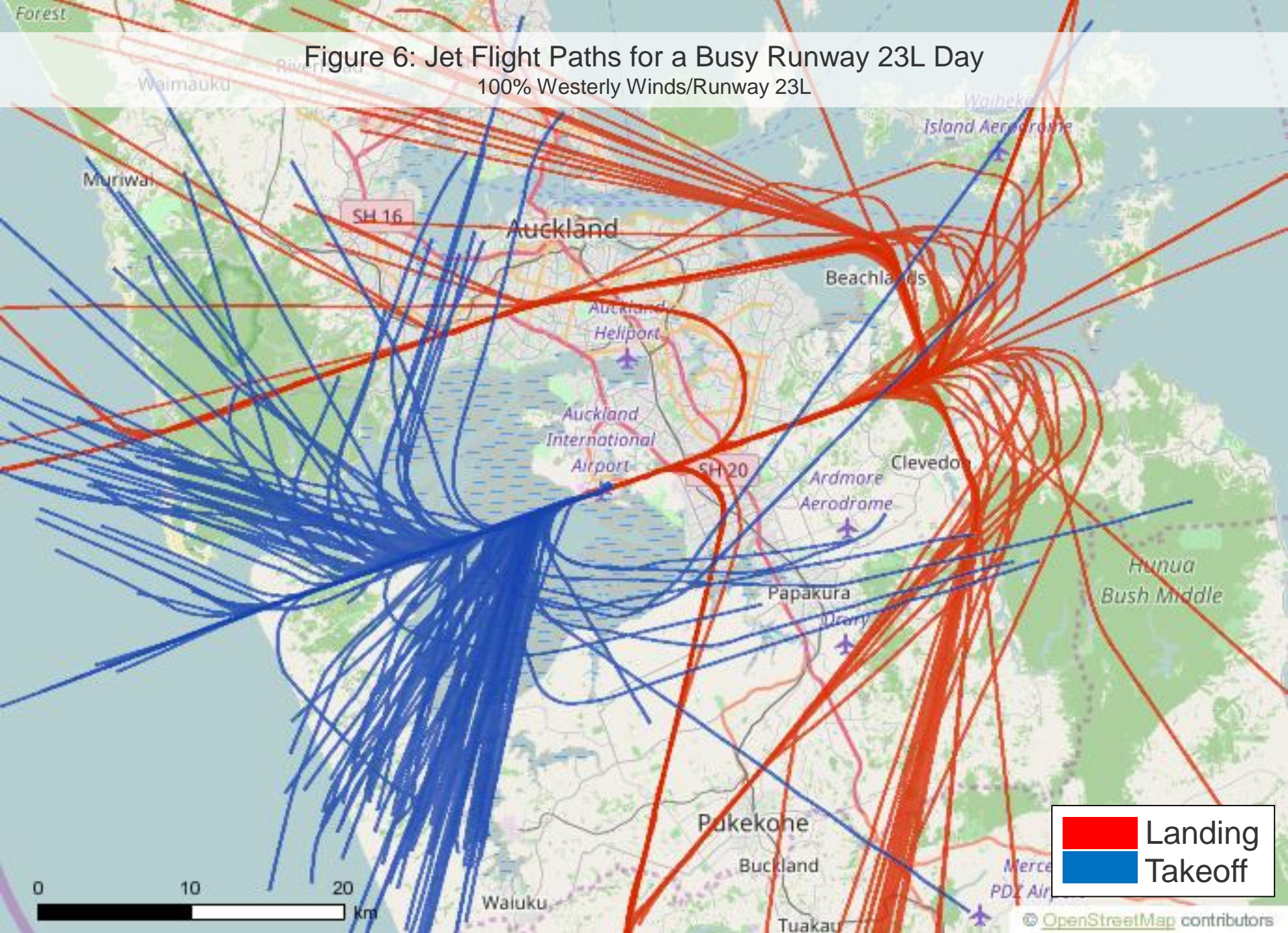


Figure 7: Turboprop Flight Paths for a Busy Runway 23L Day
100% Westerly Winds/Runway 23L

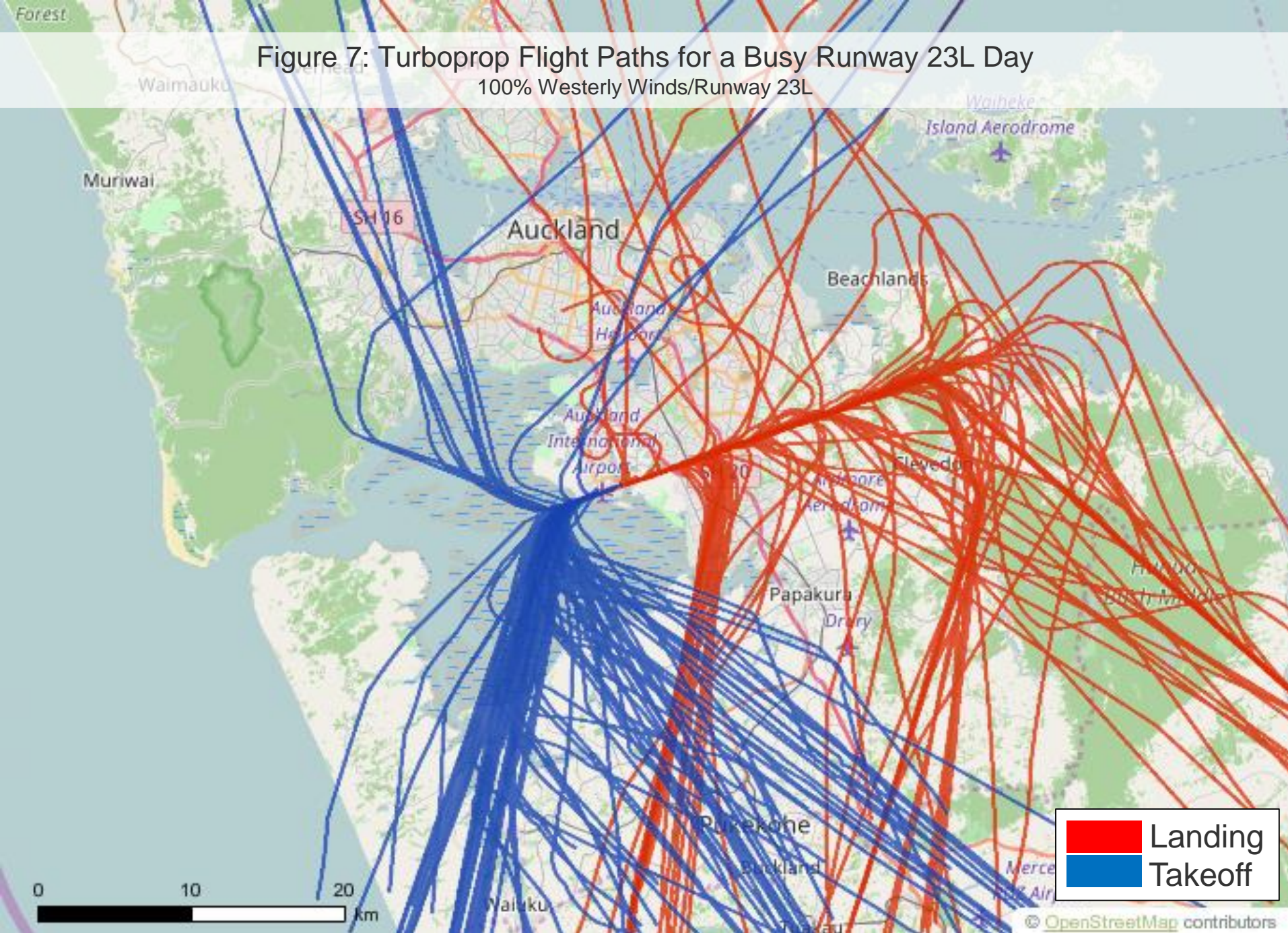
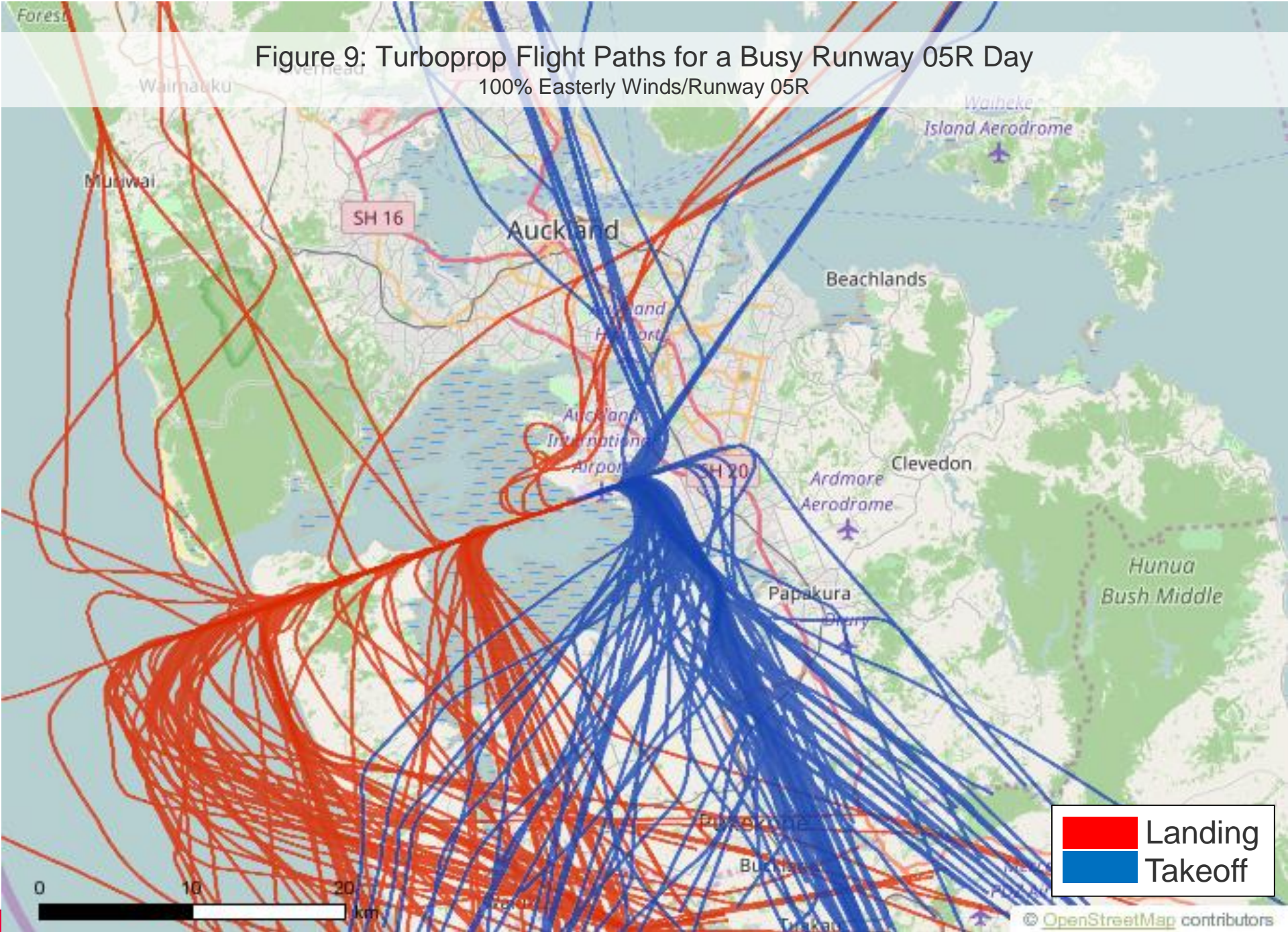


Figure 8: Jet Flight Paths for A Busy Runway 05R Day
100% Easterly Winds/Runway 05R



Figure 9: Turboprop Flight Paths for a Busy Runway 05R Day
100% Easterly Winds/Runway 05R



Noise Enquiries



Figure 10: Number of Aircraft Noise Enquiries per Month

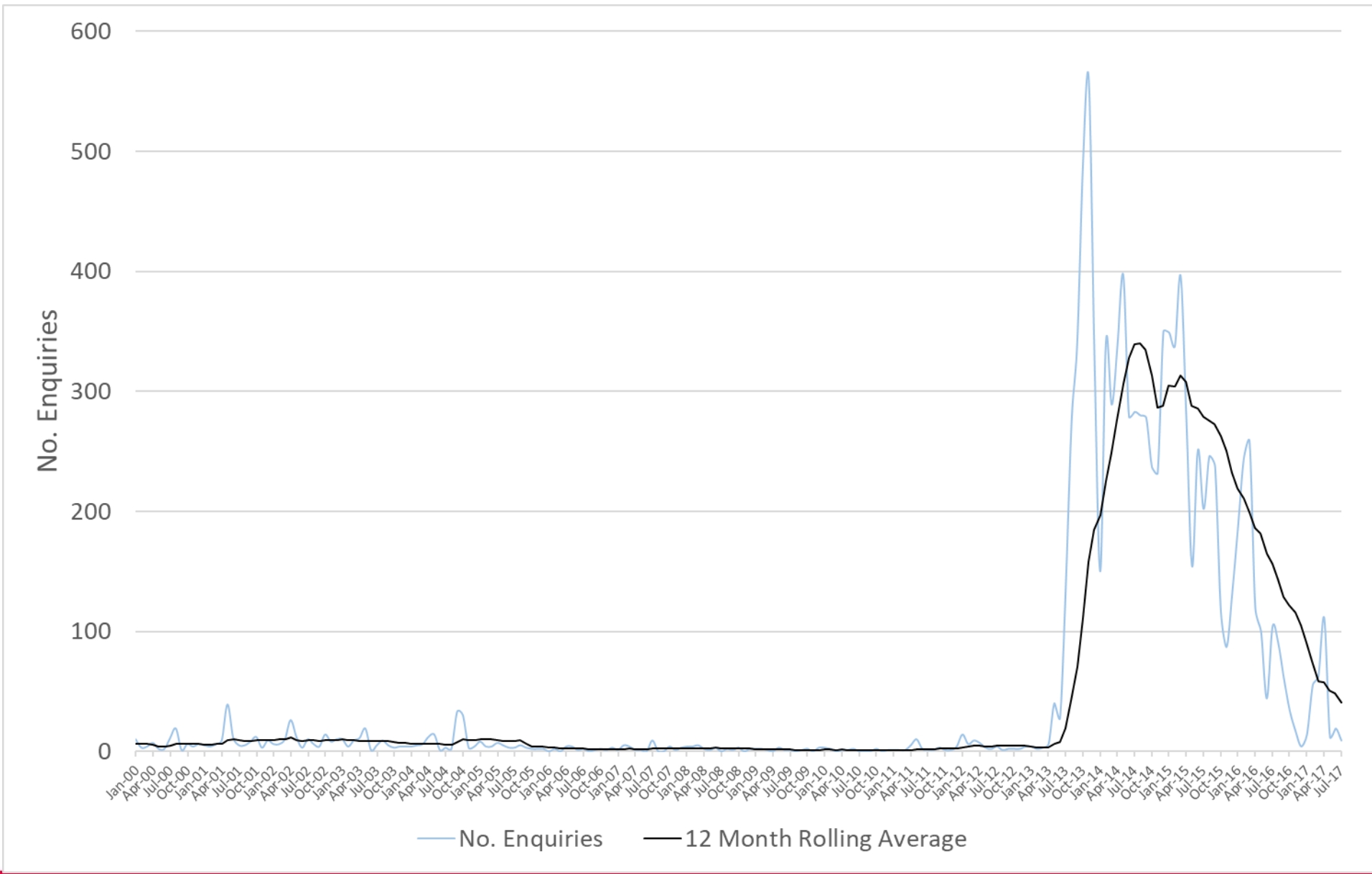


Table 3: Summary of Noise Enquiries

	Total	May	June	July
Number of Enquiries	40	12	19	9
<i>Specific</i>	27	9	14	4
<i>Generic</i>	5	0	2	3
<i>Question</i>	8	3	3	2
Number of People Enquiring	20	6	11	12

Note: One person in Onehunga made 53% (21) of the total number of noise enquiries for the three month period.

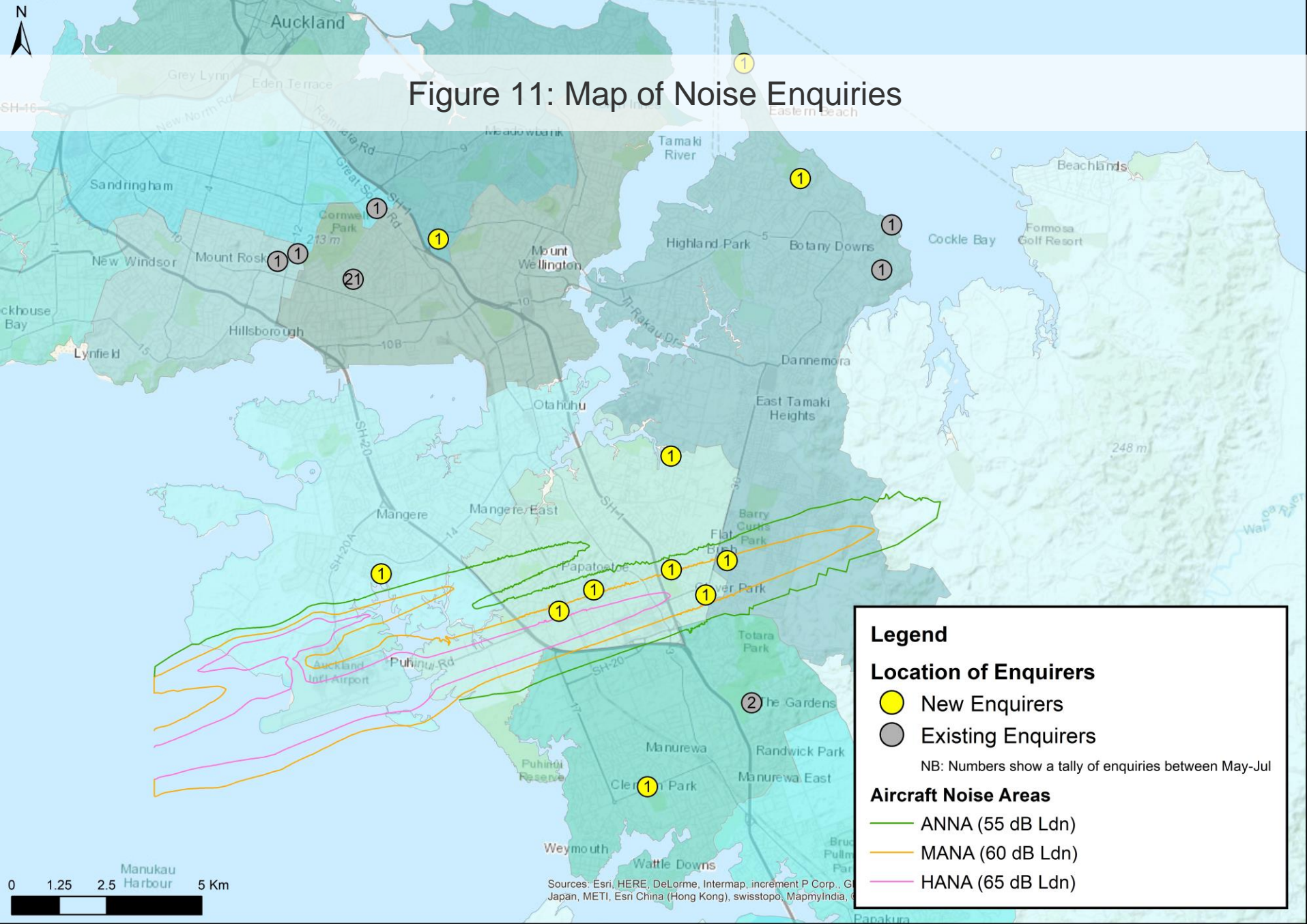
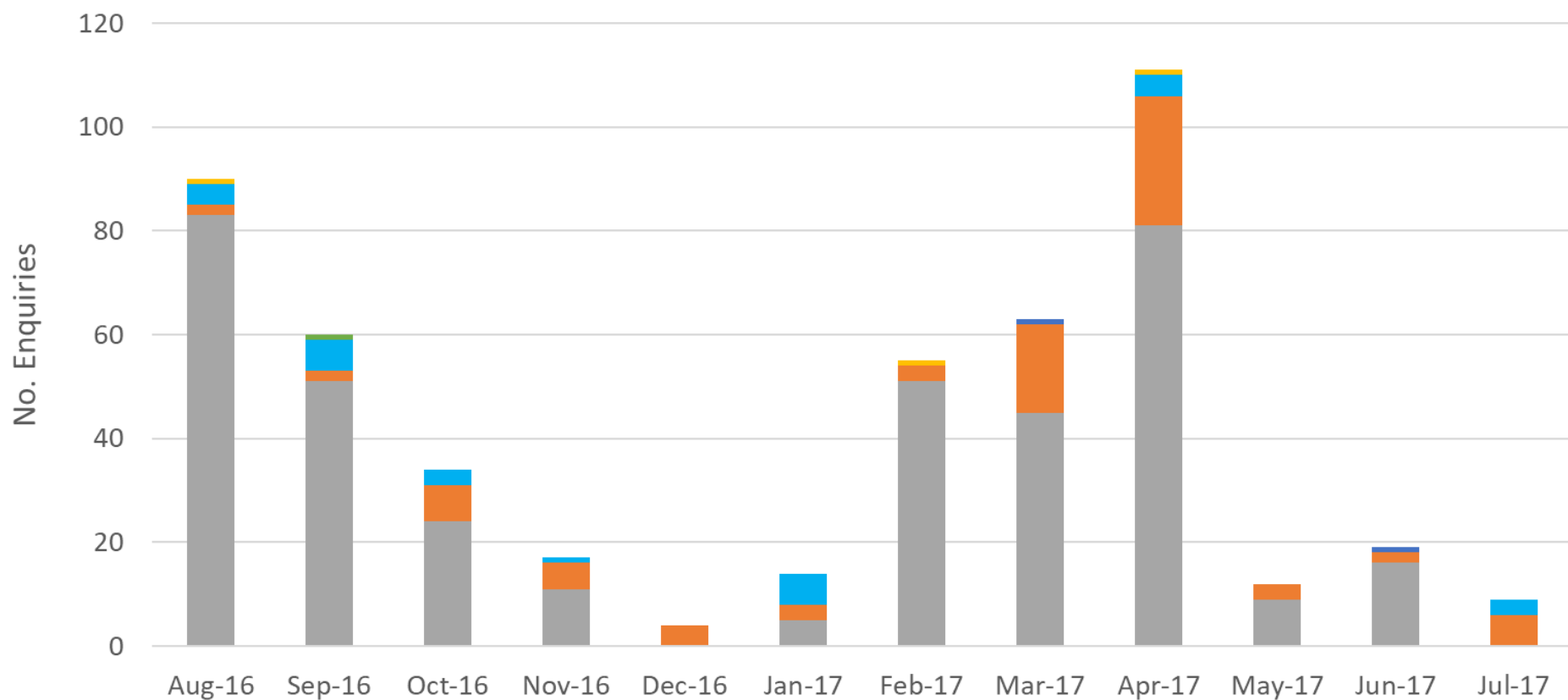


Figure 12: Number of Noise Enquiries by Area



	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17
Not in Auckland	0	1	0	0	0	0	0	0	0	0	0	0
North Shore	0	0	0	0	0	0	0	1	0	0	1	0
West Auckland	1	0	0	0	0	0	1	0	1	0	0	0
East Auckland	4	6	3	1	0	6	0	0	4	0	0	3
South Auckland	2	2	7	5	4	3	3	17	25	3	2	6
Central Suburbs	83	51	24	11	0	5	51	45	81	9	16	0

Central Suburbs
 South Auckland
 East Auckland
 West Auckland
 North Shore
 Not in Auckland

Figure 13: Noise Enquiries by Time

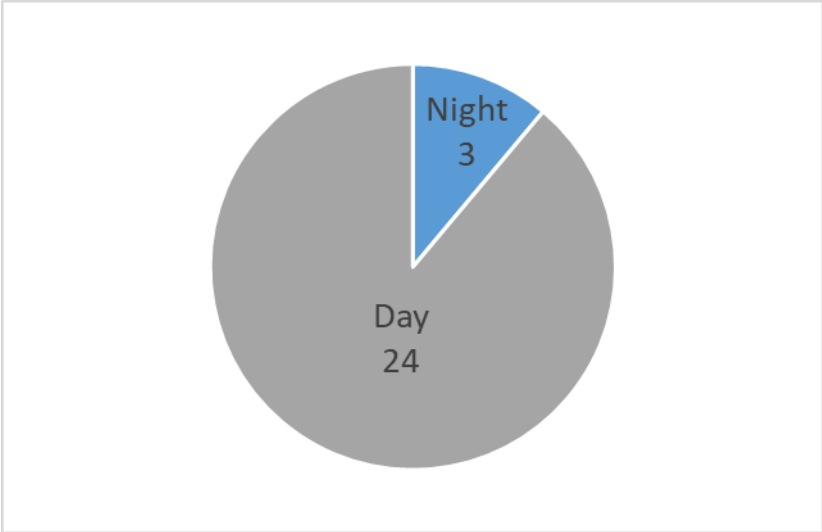


Figure 14: Noise Enquiries by Runway

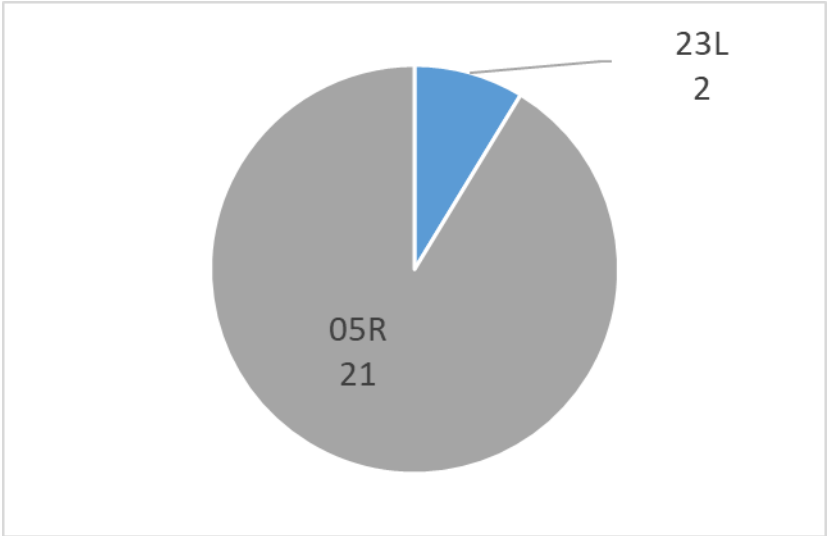


Figure 15: Noise Enquiries by Aircraft

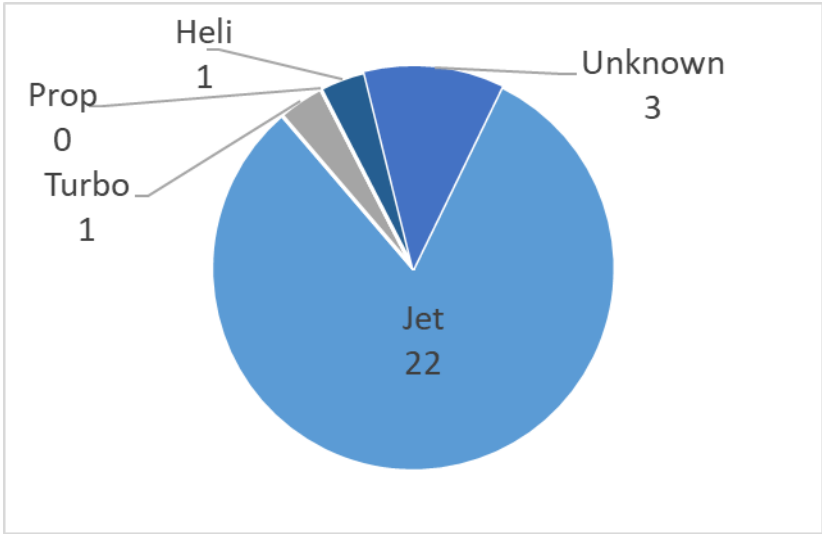


Figure 16: Noise Enquiries by Operation

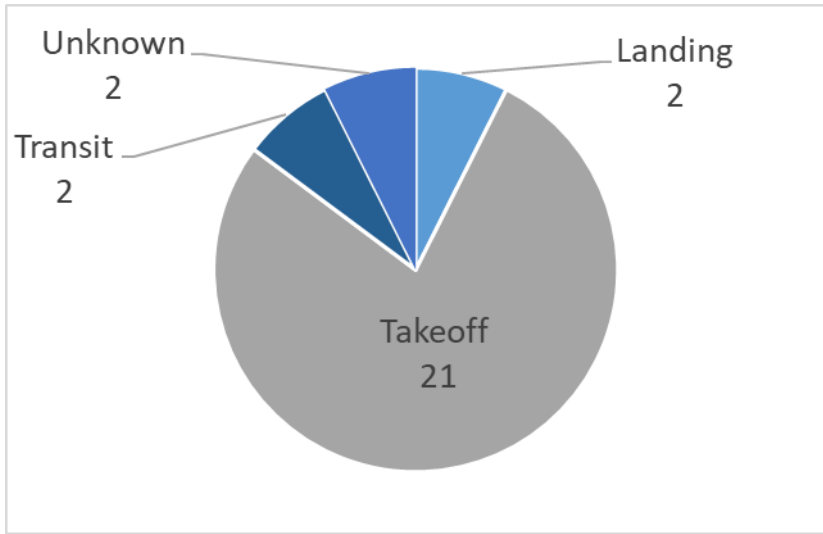


Figure 17: Noise Enquiries vs Usage of Runway 05R

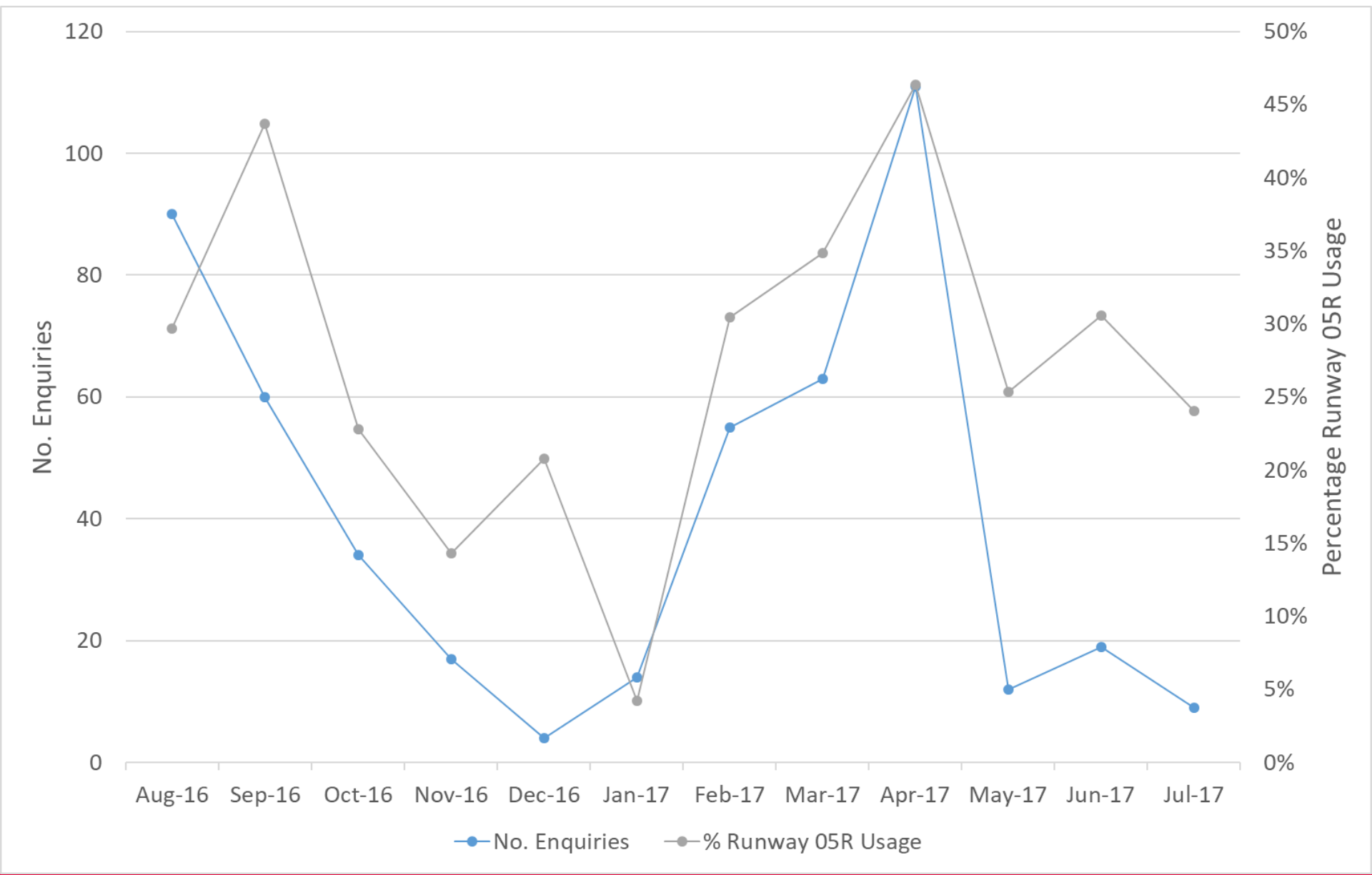


Figure 18: Noise Enquiries by Hour vs Aircraft Operations by Hour

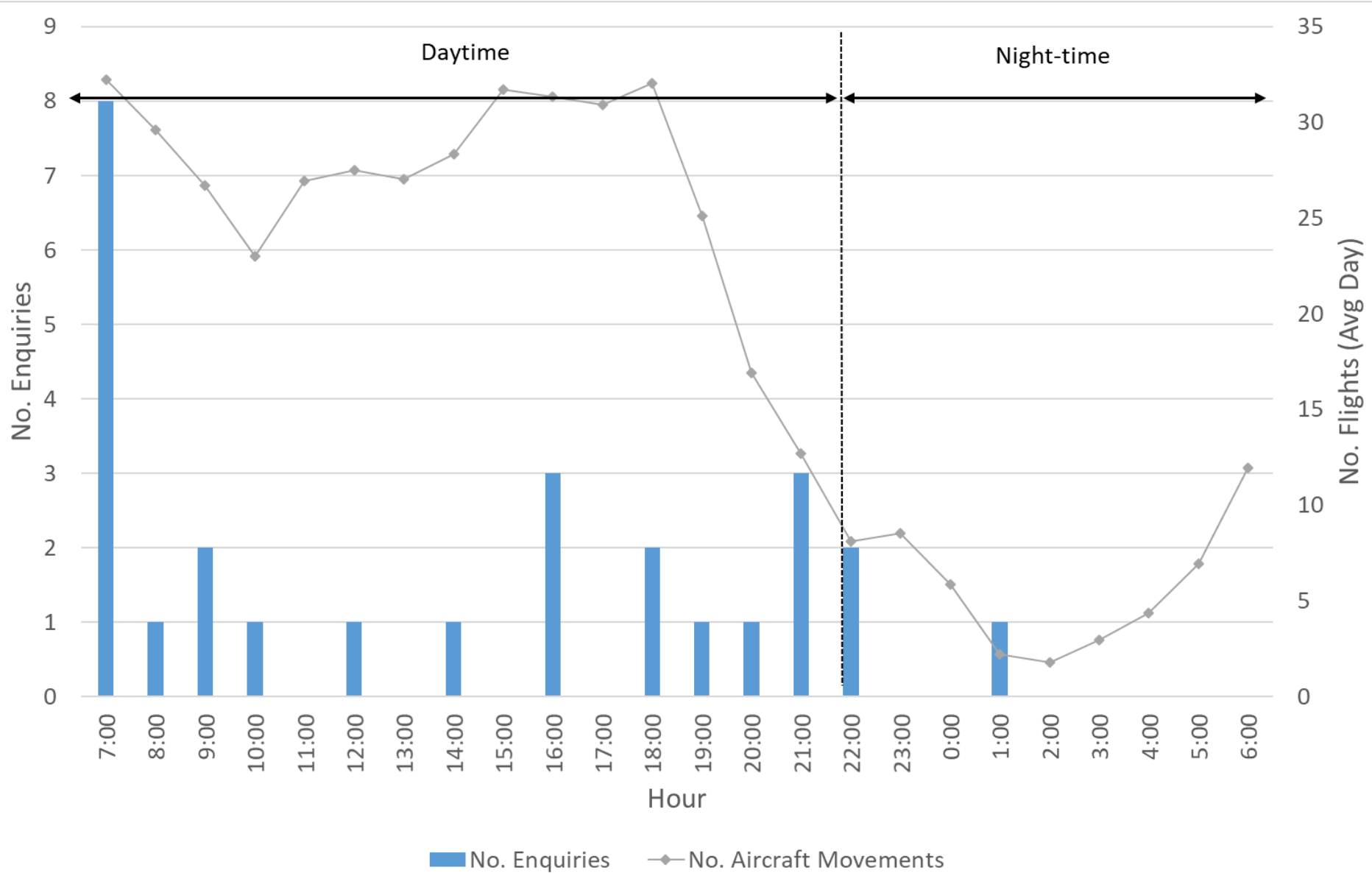
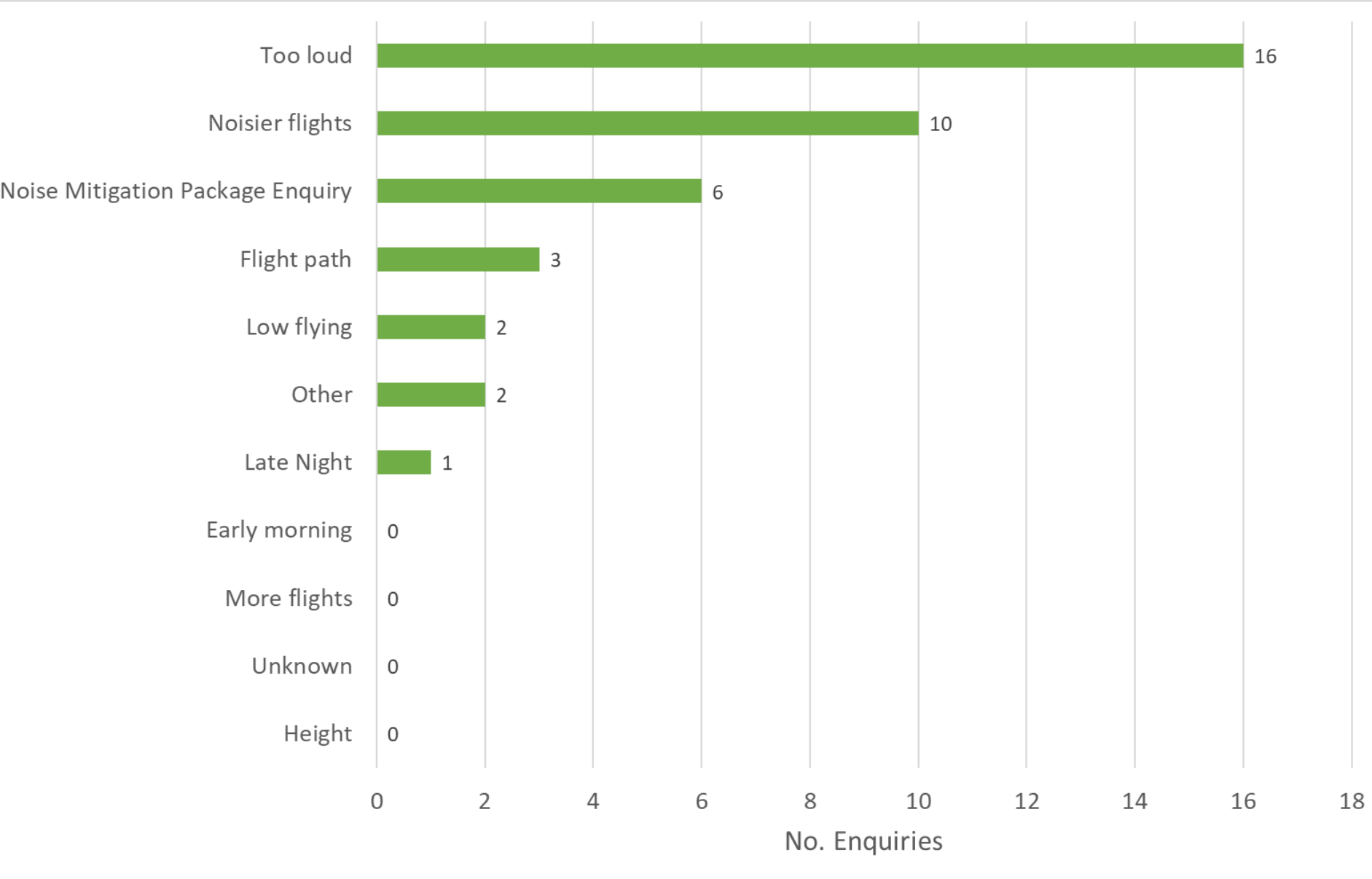


Figure 19: Noise Enquiries by Type





Noise Monitoring

Figure 21: Measured 365 Day Rolling Noise Exposure (L_{dn}) – Permanent Monitors

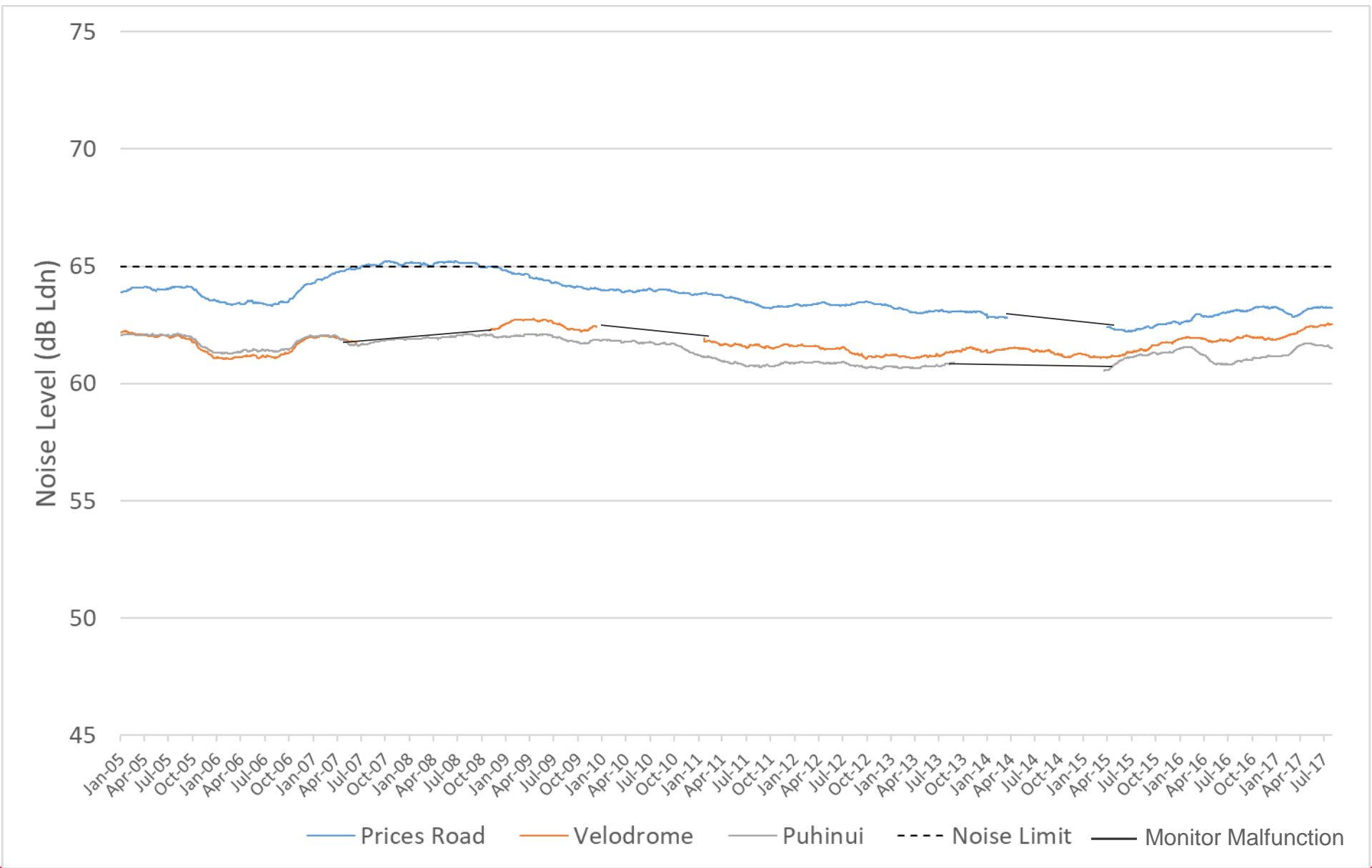


Figure 22: Number of Aircraft Noise Events in Each Noise Band - Permanent Monitors
(L_{Amax} – Maximum Noise Level)

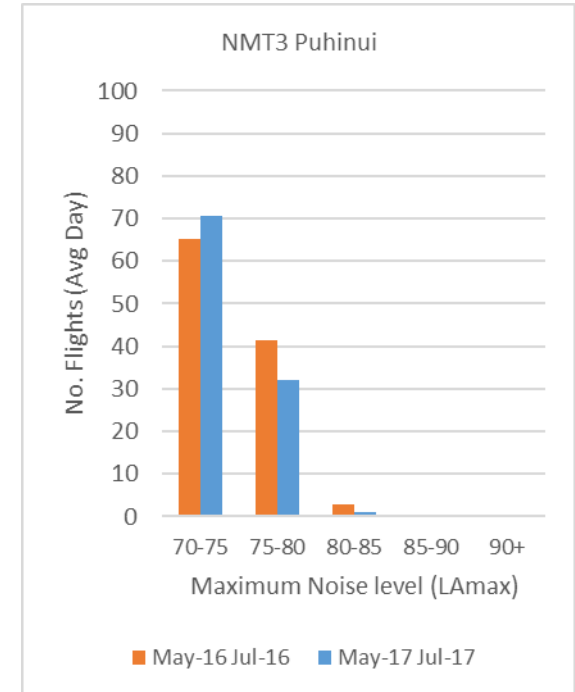
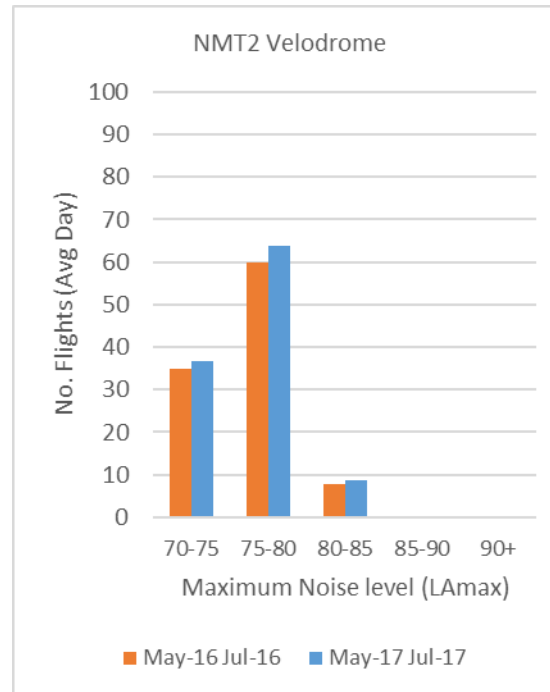
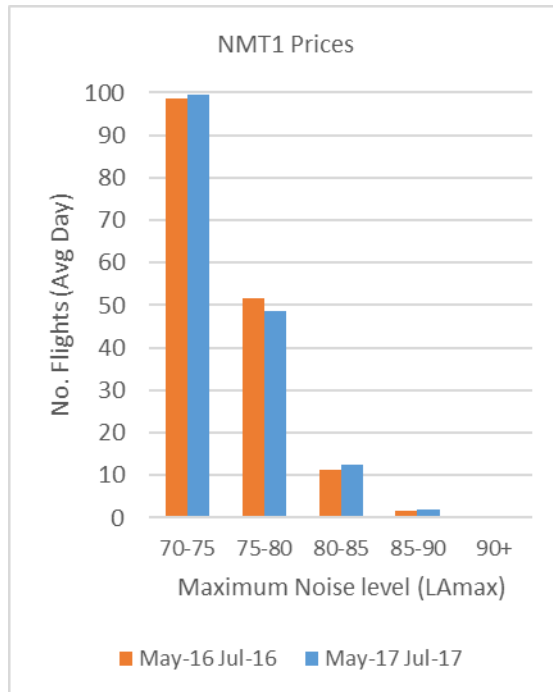


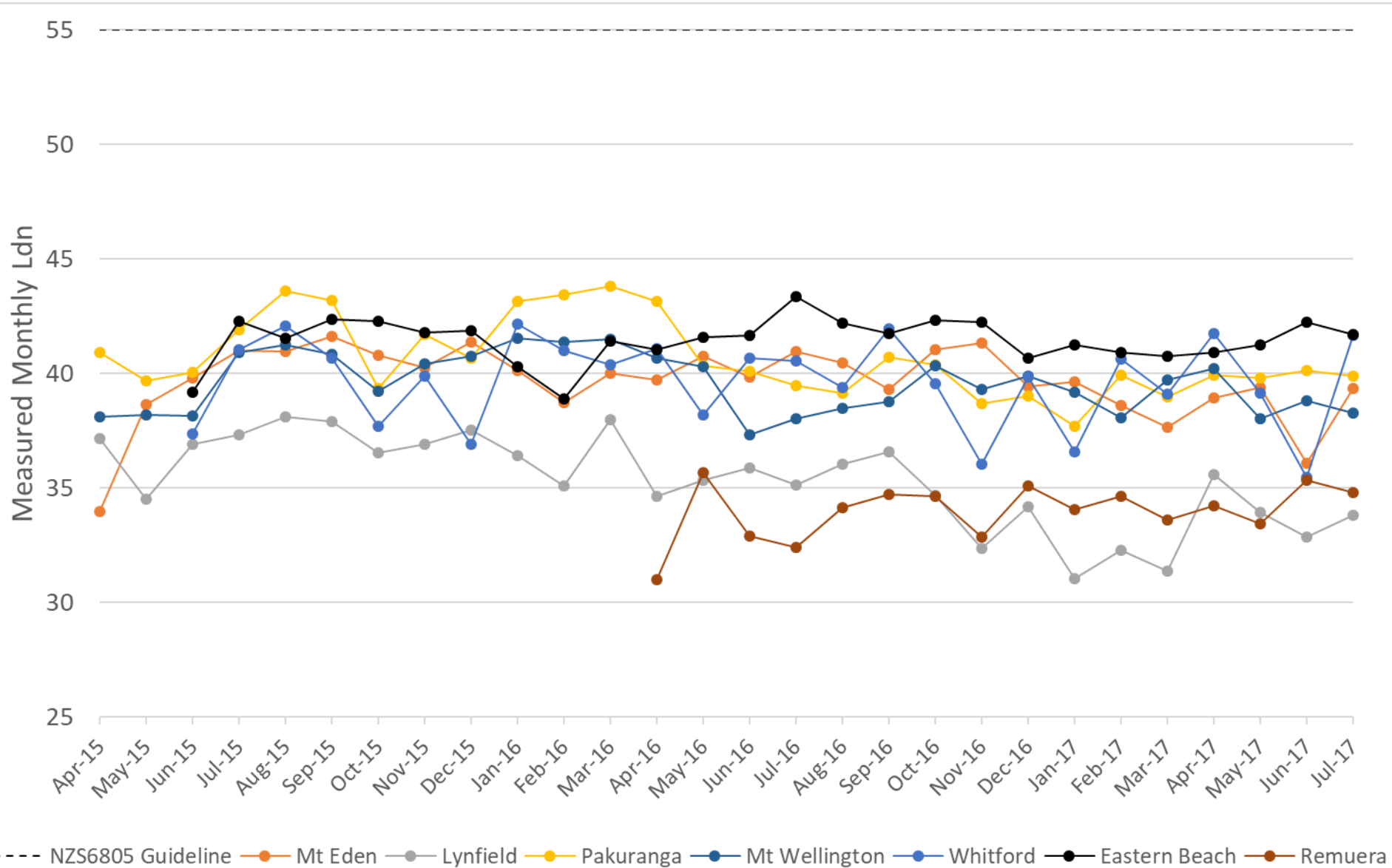
Table 4: Correlation of Aircraft Operations with Noise Events – Permanent Monitors

	NMT1 Prices	NMT2 Velodrome	NMT3 Puhinui
No. Aircraft Operations	19,206	12,400	13,768
No. Noise Events	17,642	10,189	13,408
Correlation	92%	82%	97%

Table 5: Temporary Noise Monitor Summary of Measured Aircraft Events

	Date Deployed	Days in Field	Measured L_{dn}	Average L_{Amax}
Mt Eden	1-Apr-15	852	40	62
Lynfield	2-Apr-15	851	36	59
Pakuranga	9-Apr-15	844	41	66
Mt Wellington	17-Apr-15	836	40	65
Whitford	10-Jun-15	782	40	60
Eastern Beach	11-Jun-15	781	42	61
Remuera	19-Apr-16	468	34	59

Figure 23: Measured Monthly Noise Exposure (L_{dn}) – Temporary Monitors



A close-up, low-angle shot looking into the core of a jet engine. The image shows several concentric rings of dark, curved compressor blades. The central hub is visible, and the lighting creates a strong sense of depth and mechanical complexity. A semi-transparent grey banner is overlaid across the middle of the image.

Engine Testing

Figure 24: Engine Testing Monitoring Locations

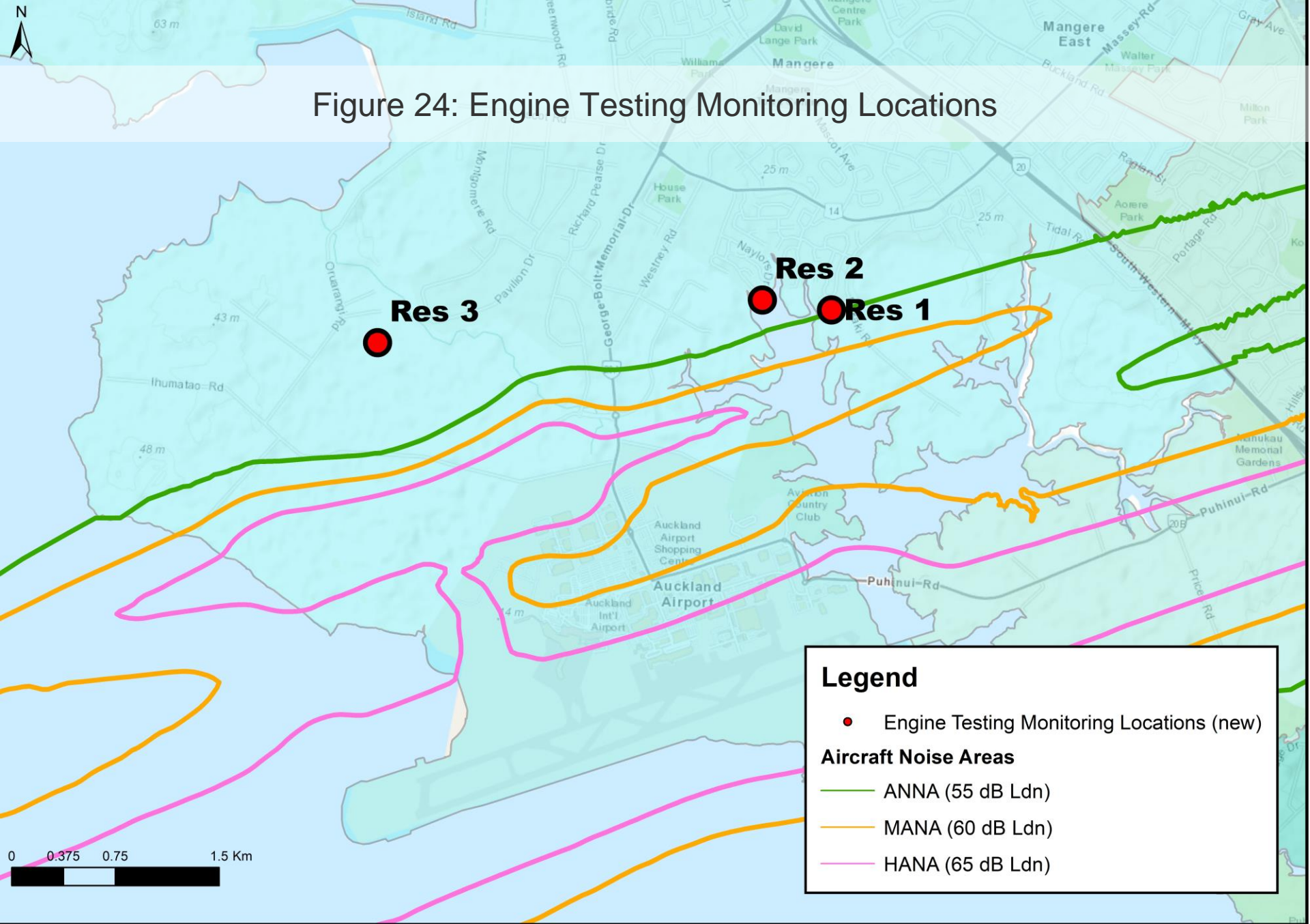
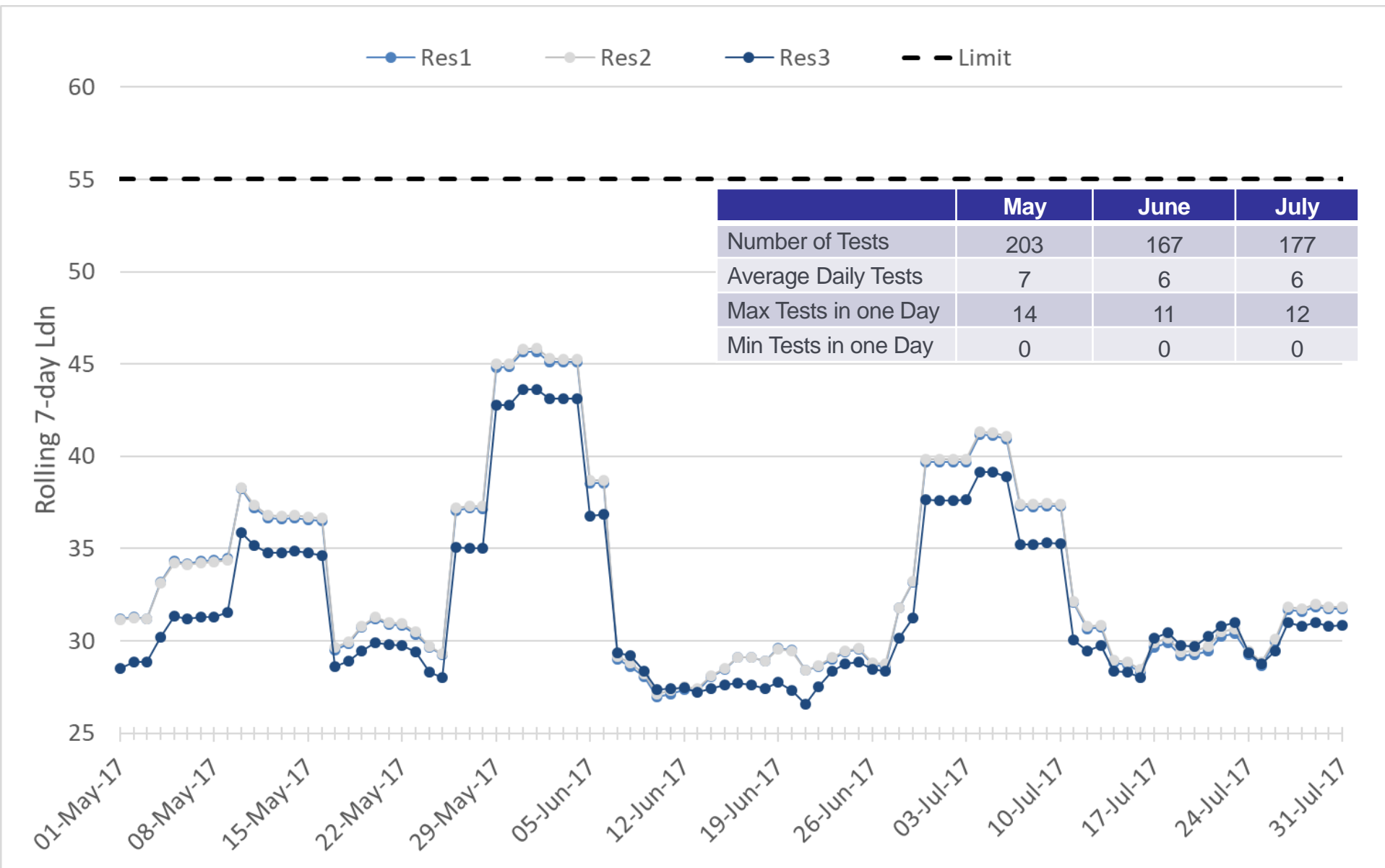
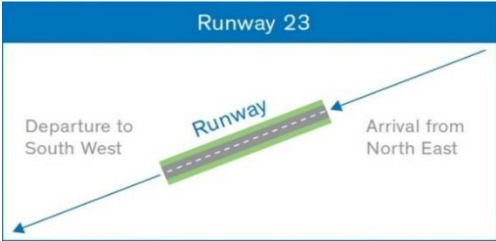
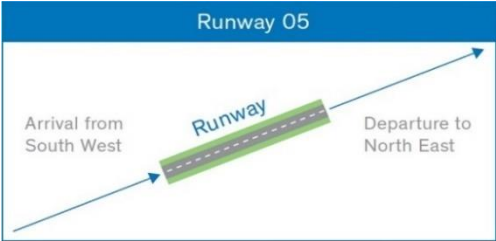


Figure 25: Engine Testing Summary



Appendix A: Glossary of Terminology

Term	Definition
Daytime	The period from 7:00am to 10:00pm
Night-time	The Period from 10:00pm to 7:00am
Runway 23L/Runway 05R	<div>Occurs in Westerly Wind Conditions</div> <div>Occurs in Easterly Wind Conditions</div>
	<div>  </div> <div>  </div>
Enquiry Type	
“Specific” enquiry	Enquiries relating to a specific aircraft operation.
“Generic” enquiry	Enquiries that don’t relate to a specific aircraft operation but relate to noise in general.
“Question” enquiry	An enquiry to find out more information about noise related topics.
“Aircraft” Noise	Noise that is from aircraft operations only.
“Ambient” Noise	Noise that is from general ambient noise sources (cars, wind etc.).
	Excludes noise from aircraft operations.
A-weighting	The process by which noise levels are corrected to account for the non-linear frequency response of the human ear.
L_{dn} – Noise Exposure	The average A-weighted noise level over a day/month/year with a 10 dB penalty applied to the night-time (10pm – 7am).
L_{Amax} – Maximum Noise Level	The highest A-weighted noise level which occurs during an aircraft operation.
ANNA	Aircraft Noise Notification Area – Set at 55 dB L_{dn}
MANA	Moderate Aircraft Noise Area – Set at 60 dB L_{dn}
HANA	High Aircraft Noise Area – Set at 65 dB L_{dn}

Appendix B: Noise Enquiry Type

Cause	Description
Low flying	Aircraft flying at a low altitude
Too loud	Aircraft making too much noise
Early morning	Aircraft flying in the early morning
Late night	Aircraft flying late at night or overnight
Height	Aircraft flying higher or lower than usual
More flights	More aircraft operations than usual
Noisier flights	Aircraft are noisier than usual
Flight path	Aircraft flying on a different flight path than usual
Other	The disturbance is different from those listed
Unknown	Cause not stated
Noise Mitigation Package Enquiry	Enquiry relating to the Noise Mitigation Packages

Appendix C: Suburbs by Area

Suburb	Area	Suburb	Area	Suburb	Area
Alfriston	South Auckland	Manurewa	South Auckland	Saint Heliers	Central Suburbs
Anawhata	West Auckland	Meadowbank	Central Suburbs	Sandringham	Central Suburbs
Beachlands	East Auckland	Mellons Bay	East Auckland	Shelly Park	South Auckland
Bucklands Beach	East Auckland	Milford	North Shore	Somerville	South Auckland
Clover Park	South Auckland	Mount Eden	Central Suburbs	Takanini	West Auckland
Cockle Bay	East Auckland	Mount Roskill	Central Suburbs	Te Atatu South	West Auckland
Cornwallis	West Auckland	Mount Wellington	Central Suburbs	The Gardens	South Auckland
East Tamaki Heights	East Auckland	Muriwai	West Auckland	Titirangi	West Auckland
Ellerslie	Central Suburbs	Northpark	South Auckland	Totara Heights	South Auckland
Epsom	Central Suburbs	One Tree Hill	Central Suburbs	Totara Vale	South Auckland
Flat Bush	East Auckland	Onehunga	Central Suburbs	Waitakere	West Auckland
Glendowie	Central Suburbs	Onewhero	South Auckland	Waiuku	South Auckland
Greenlane	Central Suburbs	Otahuhu	South Auckland	Wattle Downs	South Auckland
Grey Lynn	Central Suburbs	Otara	South Auckland	Westmere	Central Suburbs
Half Moon Bay	East Auckland	Pakuranga Heights	East Auckland	Weymouth	South Auckland
Herne Bay	Central Suburbs	Panmure	Central Suburbs	Whanganui	Not in Auckland
Howick	East Auckland	Papatoetoe	South Auckland	Whangaparaoa	Not in Auckland
Karaka	South Auckland	Point Chevalier	Central Suburbs		
Mangere	South Auckland	Randwick Park	South Auckland		
Mangere Bridge	South Auckland	Remuera	Central Suburbs		
Manukau	South Auckland				