ANCCG Meeting

Monitoring Period

August 2019 – October 2019

Meeting: 9 December 2019

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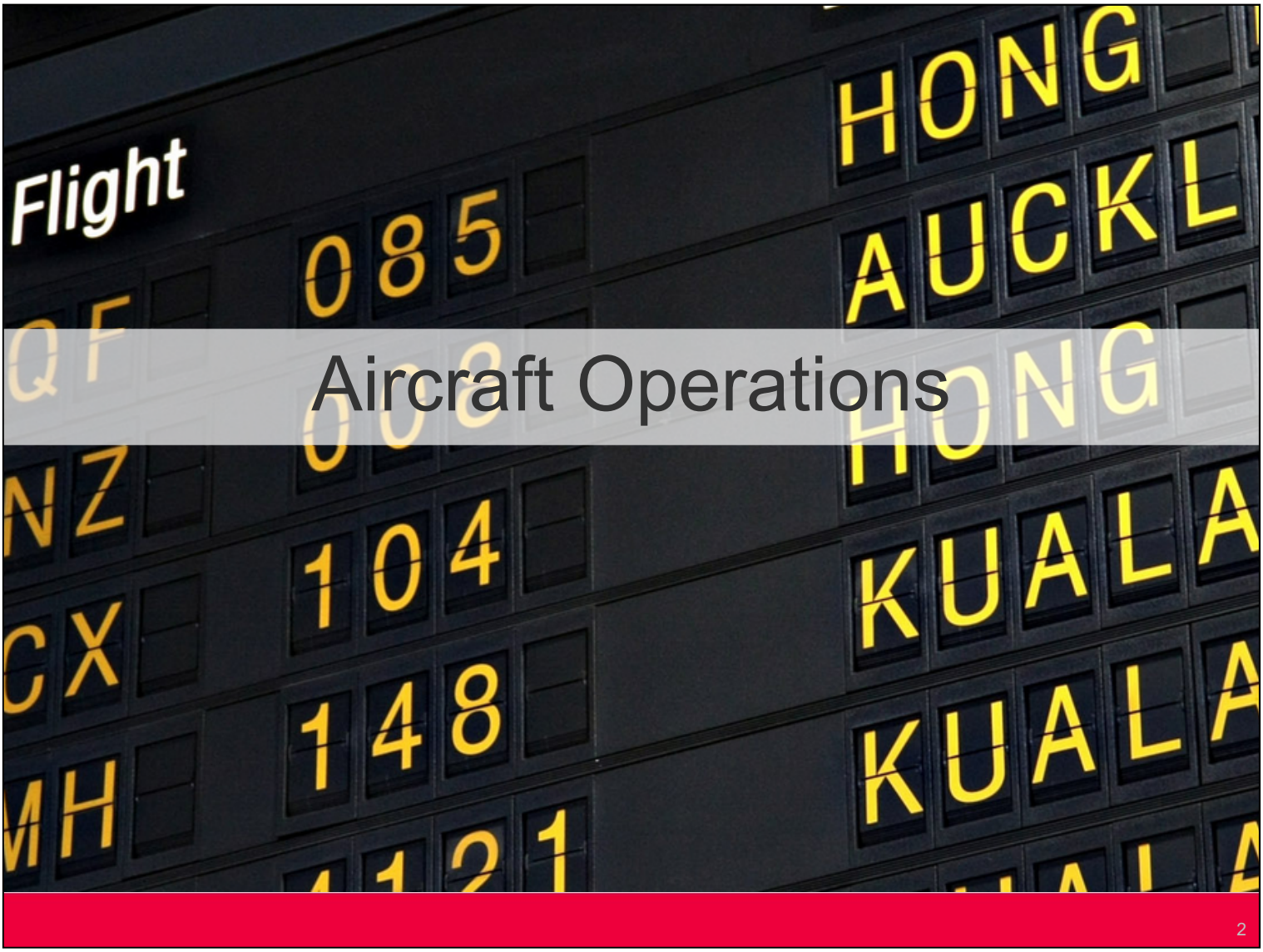
NB: Glossary of terminology given in Appendix A



Aircraft Operations

Figure 1: Number of Aircraft Operations per Month

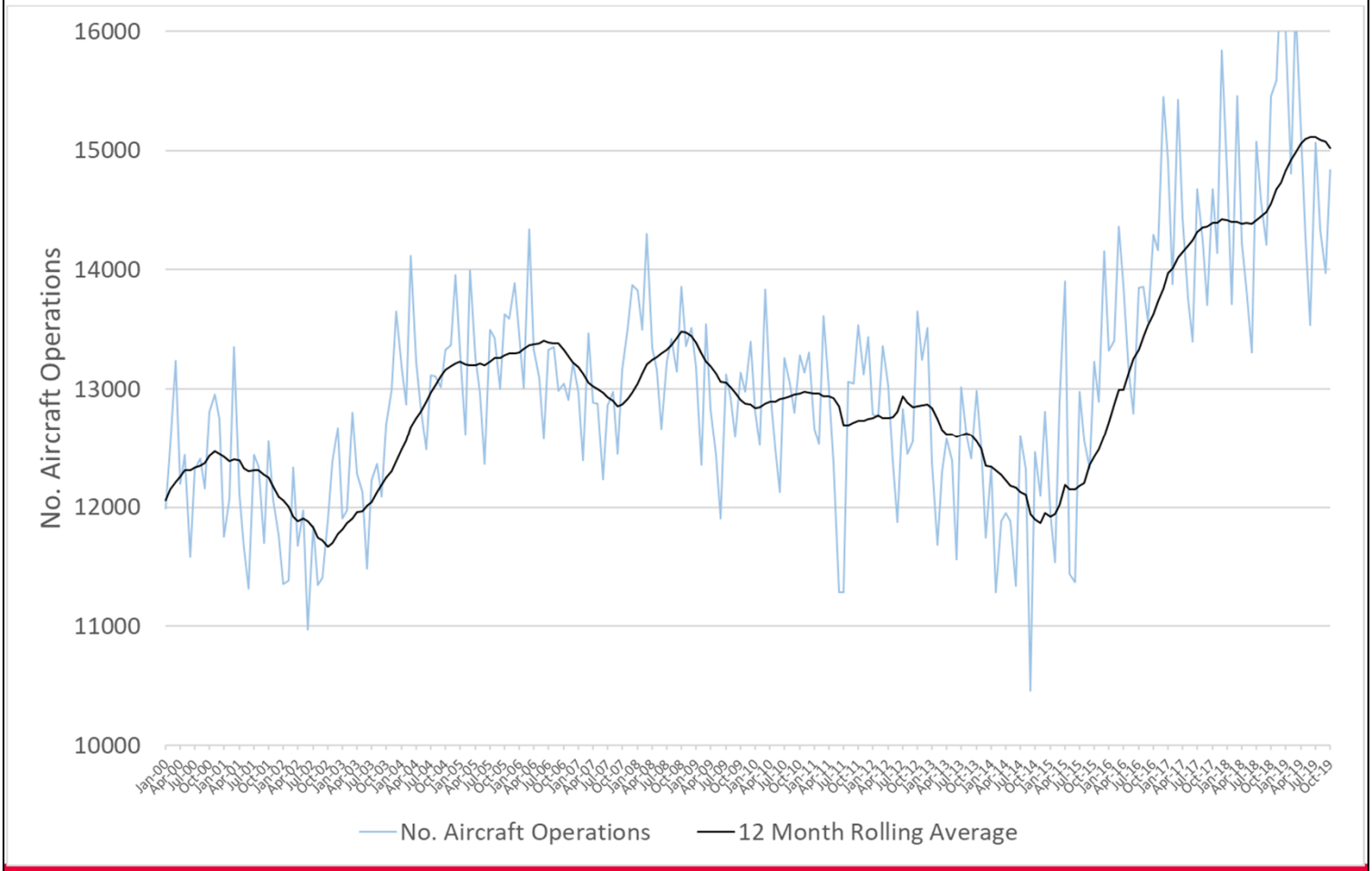


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Figure 1 shows the number of aircraft operations per month since the year 2000 (blue line) and the 12 month rolling average (black line).

Aircraft operations have fluctuated over the years with a dip in 2002 and 2014.

Since 2015 aircraft operations have increased steadily.

The number of aircraft operations in the three month period August 2019 to October 2019 has decreased by 3% when compared to the same period last year.

Daytime operations have decreased by 3% and night-time operations have decreased by 3% when compared to the same period last year.

Table 1: Summary of Aircraft Operations

Operation	Total	Day	Night
Arrivals	21,574	18,494	3,080
Departures	21,522	19,661	1,861
Circuit	57	51	6
Total	**43,153**	**38,206**	**4,947**

Table 2: Average Daily Aircraft Operations

Total	Day	Night
469	415	54

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Table 1 shows a breakdown of aircraft operations in the three month period August 2019 to October 2019.

Table 2 shows that there were on average 469 aircraft operations that occurred per day (24 hour period), 54 of these were at night-time.

Figure 2: Aircraft Operations by Time

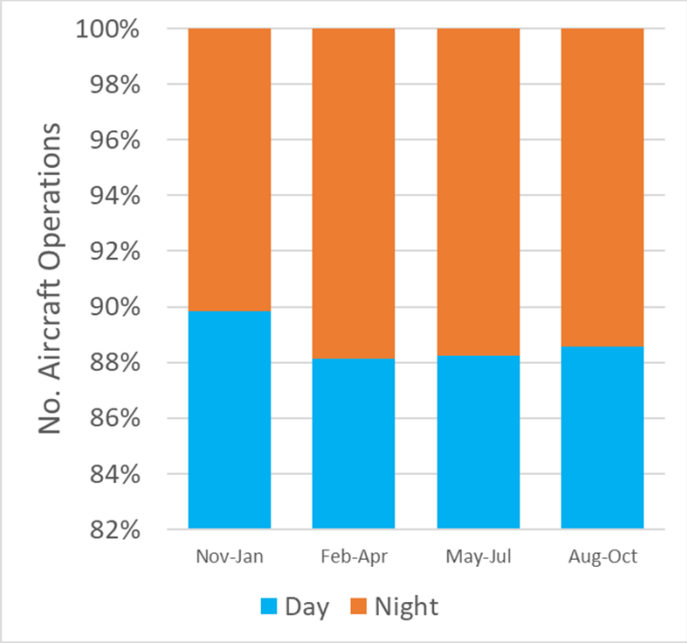

Figure 3: Aircraft Operations by Aircraft Type

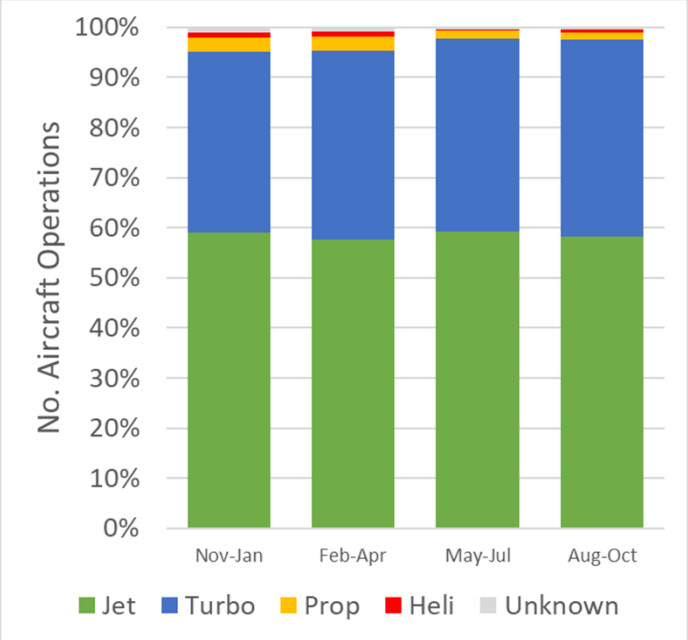

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Figure 2 shows the breakdown of aircraft operations by time of day for the three month period August 2019 to October 2019 and the three quarters preceding.

For the three month period August 2019 to October 2019 the majority (89%) of aircraft operations occurred in the daytime between 7am and 10pm and the remainder (11%) occurred at night-time.

This was similar to previous quarters.

Figure 3 shows the breakdown of aircraft operations by aircraft type in the three month period August 2019 to October 2019 and the three quarters preceding.

For the three month period August 2019 to October 2019 the majority (59%) of aircraft operations were jets with 40% being turboprops.

Propeller and helicopter aircraft made up less than 2% of the total aircraft operations during this period.

This was similar to previous quarters.

Figure 4: Aircraft Operations by Runway

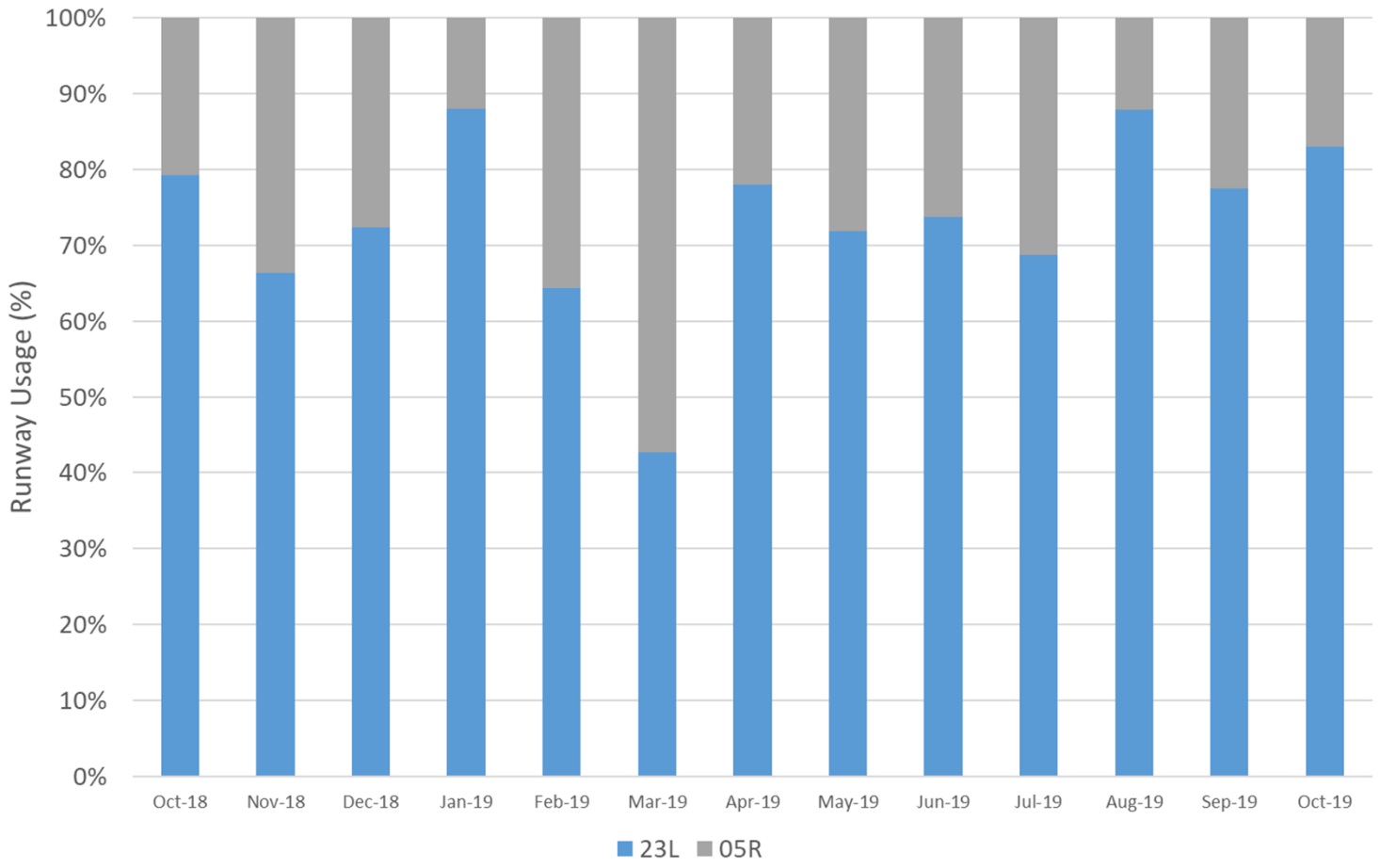

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Figure 4 shows the percentage of aircraft operations that used each runway (23L and 05R) over the past 13 months.

Runway 23L is used when westerly winds prevail and Runway 05R is used when easterly winds prevail (refer glossary for explanation)

The historical average runway usage is RW23L 70%/RW05R 30%

The runway usage in the three month period August 2019 to October 2019 was RW23L 83%/RW05R 17%.

The runway use in the same quarter last year was RW23L 75%/RW05R 25%

Figure 5: Number of SMART Approaches per week

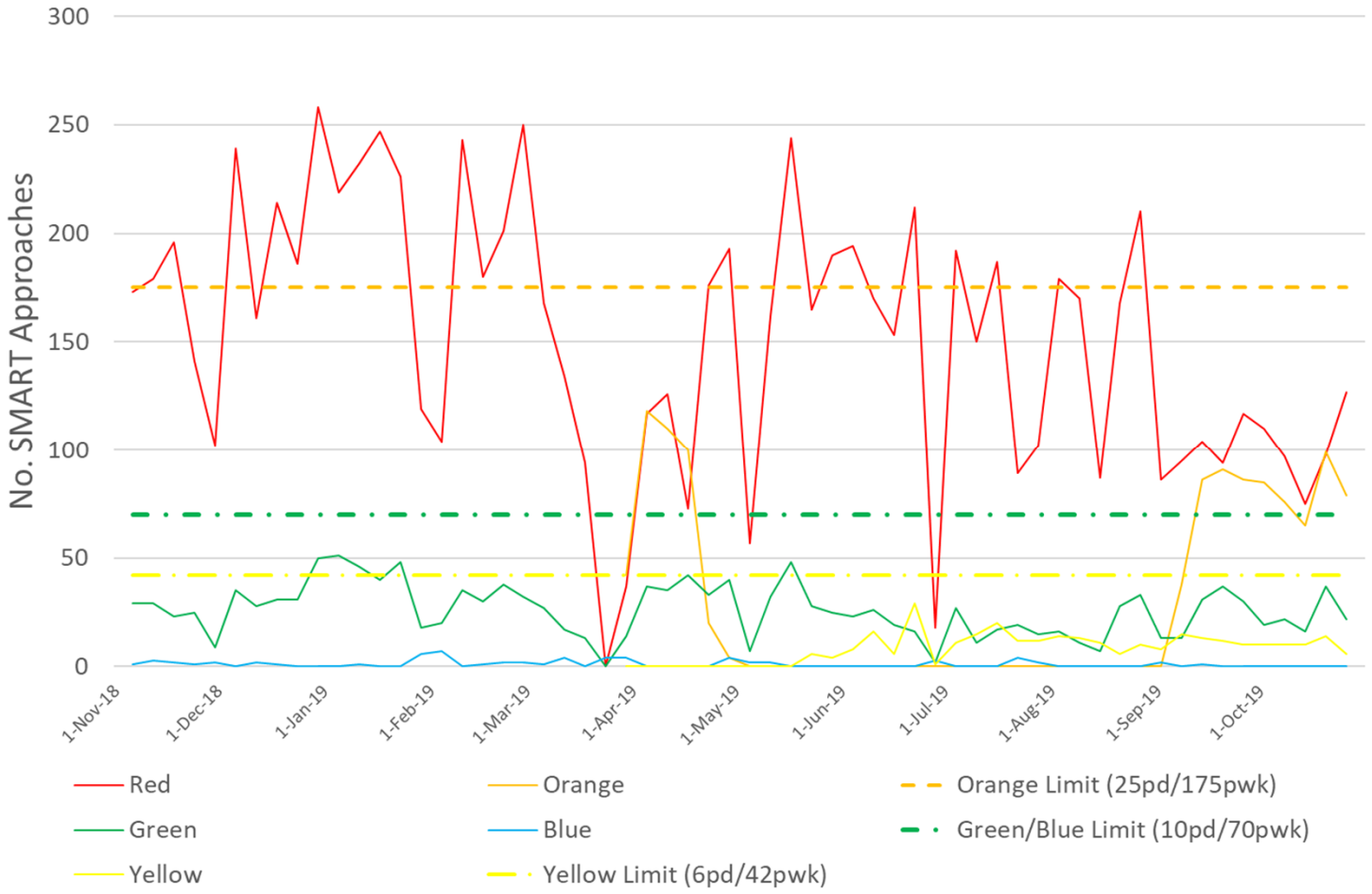

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Figure 5 shows the number of SMART flights flown in the past 12 months.

The SMART Approaches are named as follows:

- Blue X05A – International arrivals from the north on Runway 05R overflying Lynfield
- Green X23A - International arrivals from the north on Runway 23L overflying Highbrook
- Yellow U23 - International arrivals from the north on Runway 23L overflying Whitford
- Red – Domestic arrivals from the south on Runway 23L overflying Wattle Downs
- Orange S23 – Domestic arrivals from the south on Runway 23L overflying Clevedon

There is a limit of:

- 10 SMART approaches per day on the Green and Blue SMART approaches
- 6 per day on the Yellow SMART approach
- 25 per day on the Orange SMART approach

This limit has been complied with over the past 12 months.

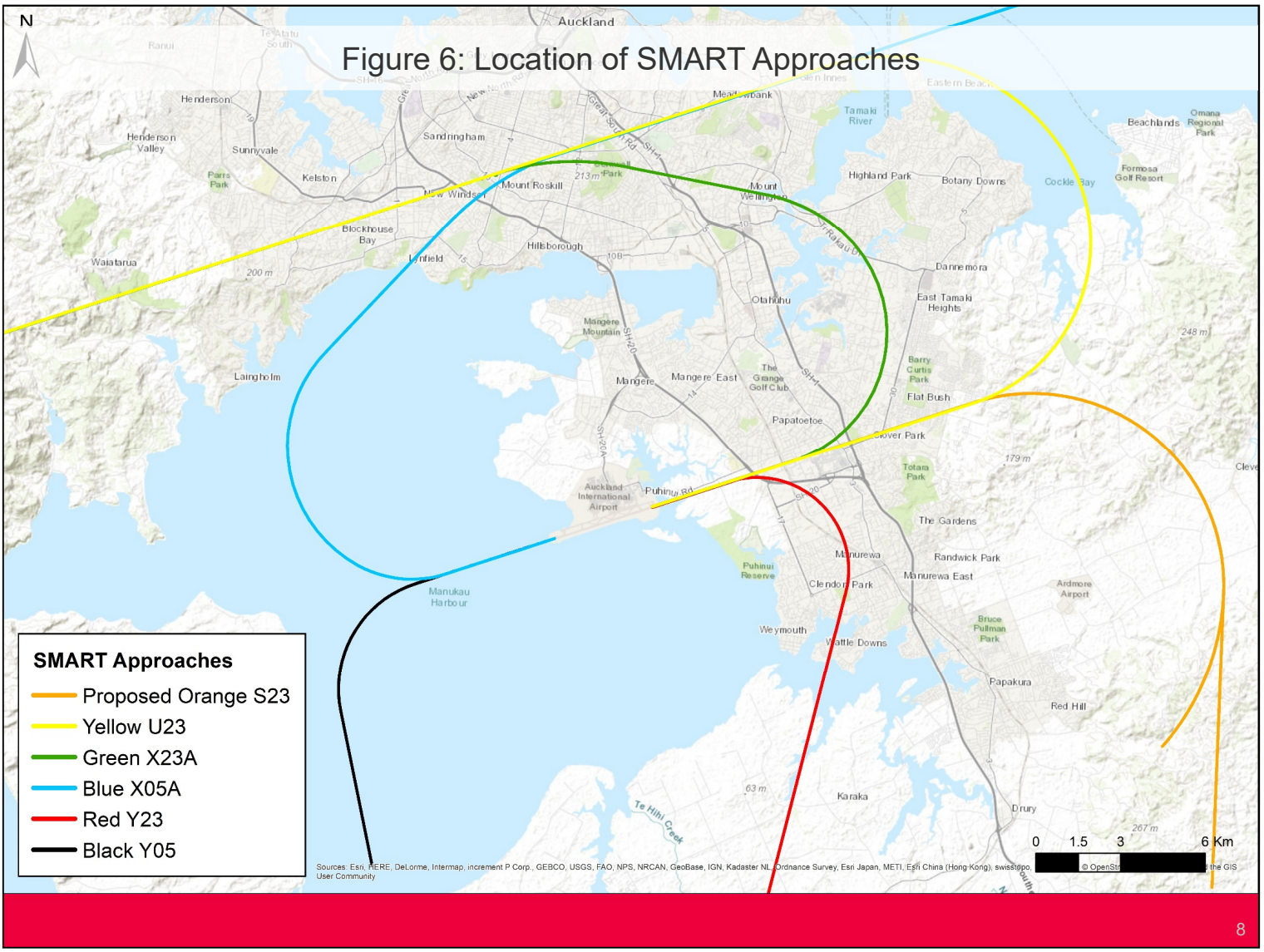

Figure 6 shows the location of the SMART approach flight paths.

Flight Path Diagrams

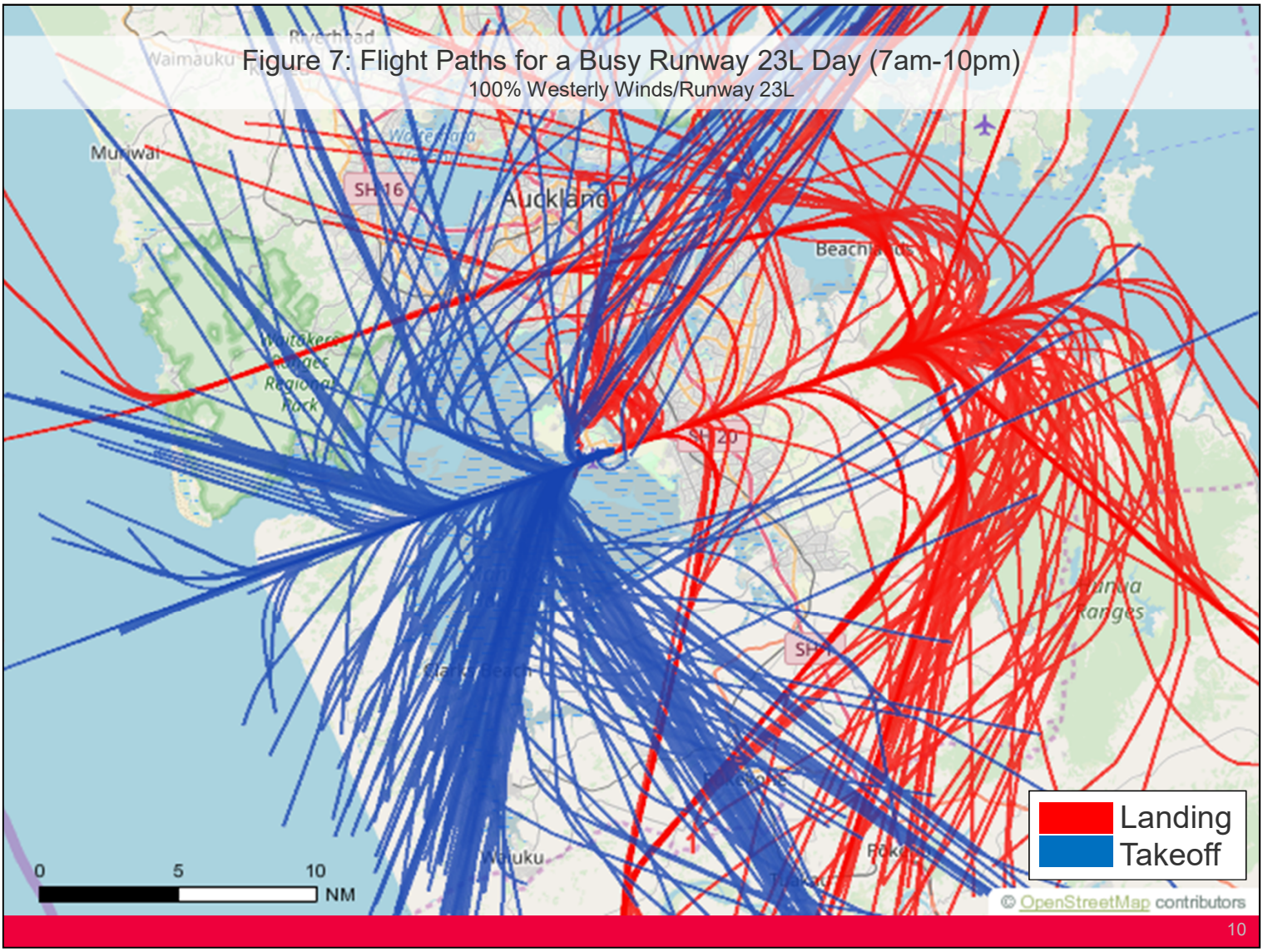

Figure 7 shows the daytime (7am-10pm) flight paths for Friday 25 October 2019, the busiest day in the three month period August 2019 to October 2019 when Runway 23L was primarily in use.

The red lines indicate arrivals and the blue lines indicate departures.

The runway usage during this day was Runway 23L (westerly) 100%.

There were 491 daytime flights on this day.

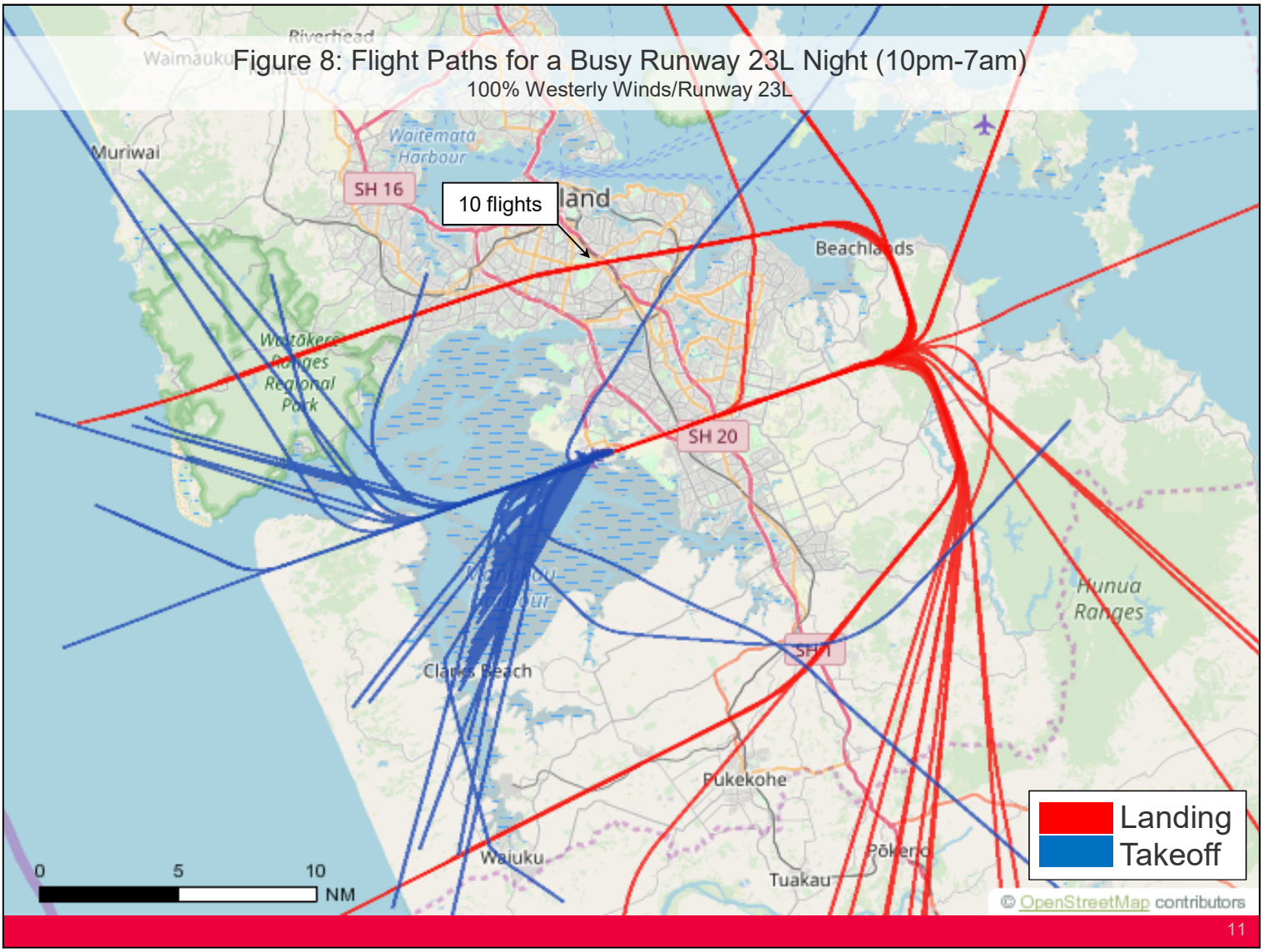

Figure 8 shows the night-time (10pm-7am) flight paths for Friday 25 October 2019, the busiest night in the three month period August 2019 to October 2019 when Runway 23L was primarily in use.

The red lines indicate arrivals and the blue lines indicate departures.

The runway usage during this night was Runway 23L (westerly) 100%.

There were 67 night-time flights on this night.

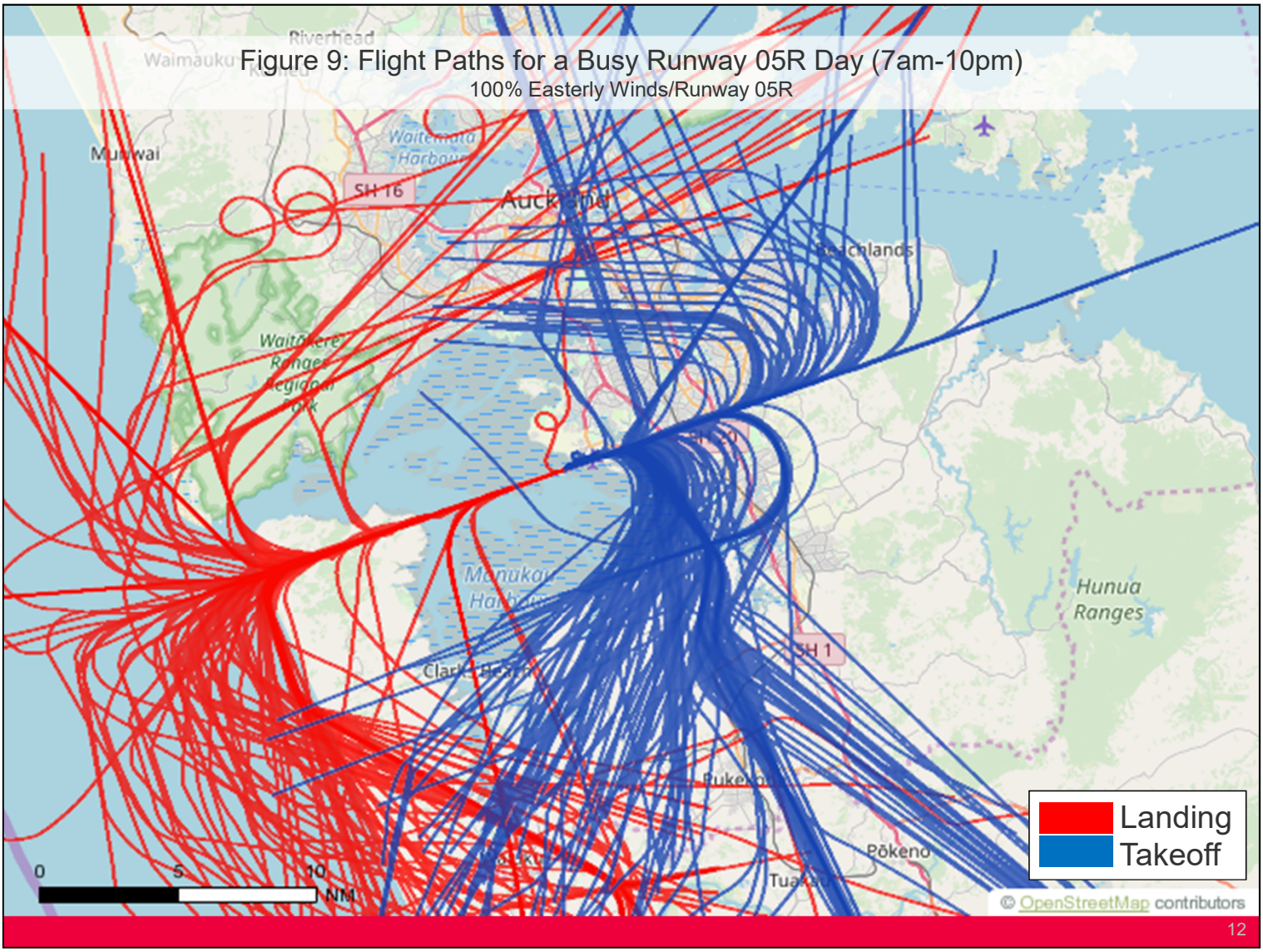

Figure 9 shows the daytime (7am-10pm) flight paths for Friday 10 October 2019, the busiest day in the three month period August 2019 to October 2019 when Runway 05R was primarily in use.

The red lines indicate arrivals and the blue lines indicate departures.

The runway usage during this day was Runway 05R (easterly) 100%.

There were 422 daytime flights on this day.

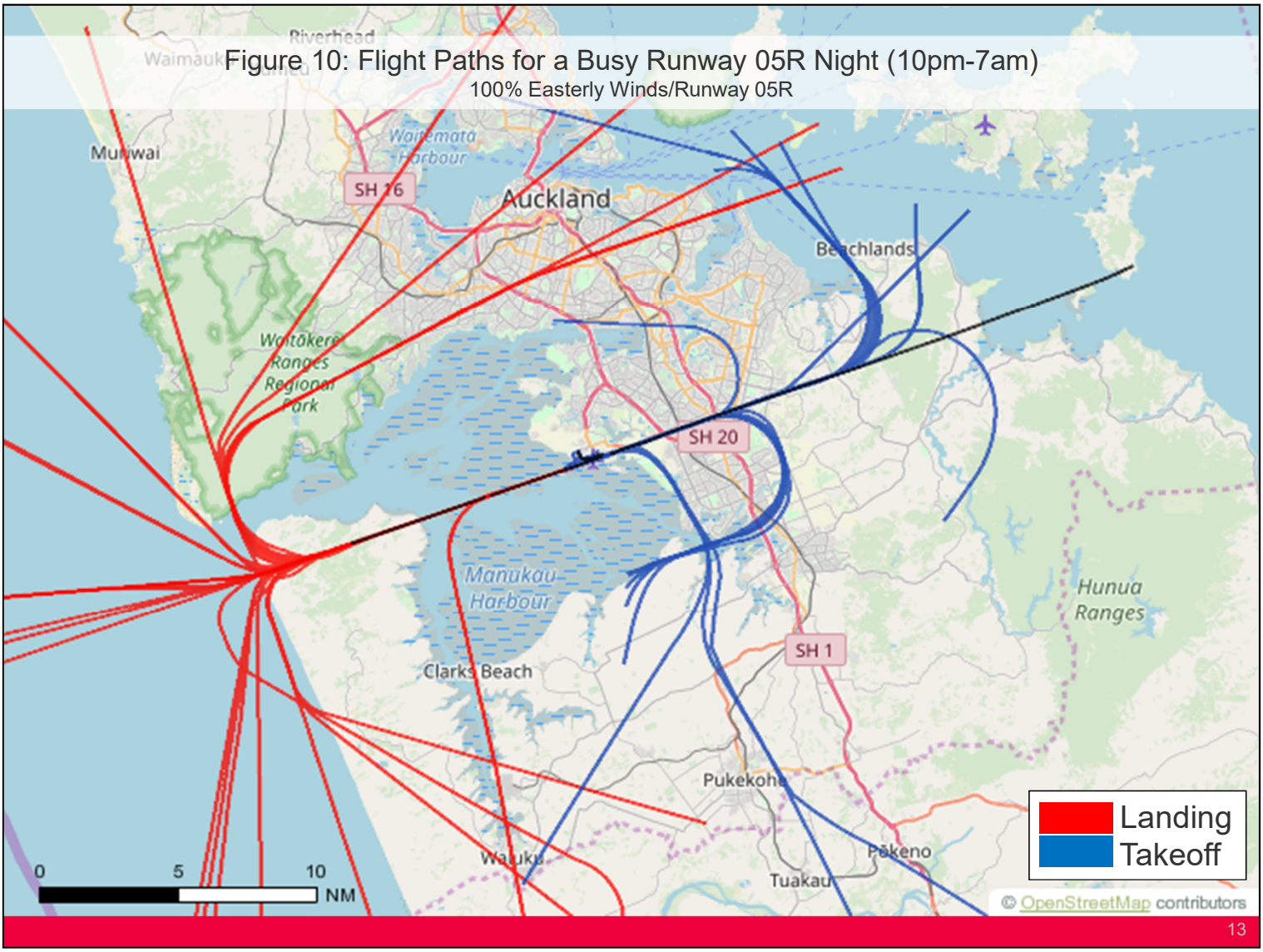

Figure 10 shows the night-time (10pm-7am) flight paths for Friday 10 October 2019, the busiest night in the three month period August 2019 to October 2019 when Runway 05R was primarily in use.

The red lines indicate arrivals and the blue lines indicate departures.

The runway usage during this night was Runway 05R (easterly) 100%.

There were 63 night-time flights on this night.

Noise Complaints

Figure 11: Number of Aircraft Noise Complaints per Month

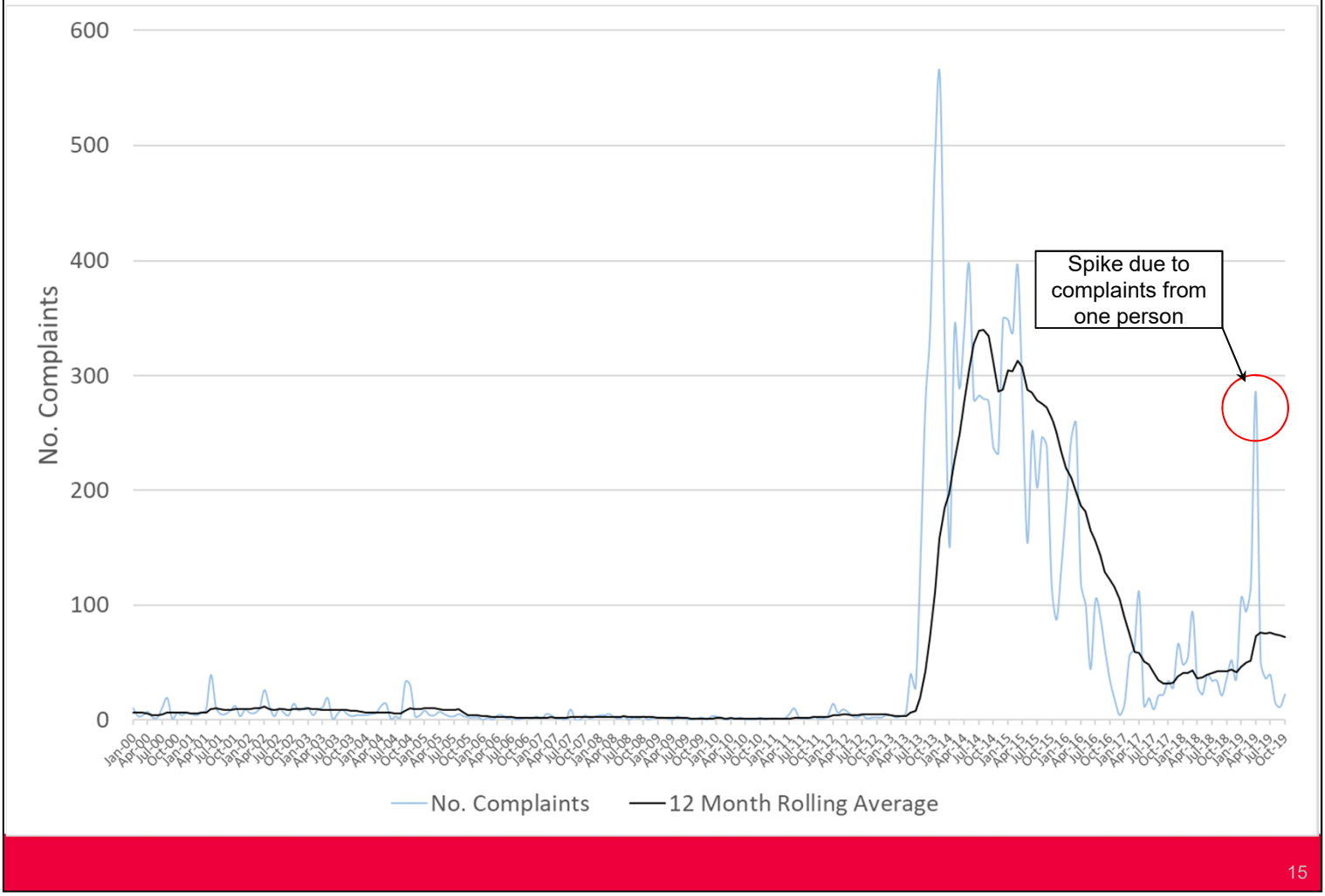

Figure 11 shows the total number of aircraft noise complaints made per month since the year 2000 (blue line) and the 12 month rolling average (black line).

Aircraft noise complaints were low up until 2013 when the number of complaints increased from about 2 per month to a peak of 560 in November 2013 and have decreased steadily since then.

This increase in complaints coincided with the 2012/13 SMART trials where community awareness to noise was heightened.

The number of noise complaints in the three month period August 2019 to October 2019 has decreased from 91 to 48 when compared to the same period last year.

Table 3: Summary of Noise Complaints

	Aug	Sep	Oct	Aug-Oct	May-Jul	Feb-Apr	Nov-Jan
Number of Complaints	15	11	22	48	126	498	194
Specific	*12*	*8*	*19*	*39*	*100*	*440*	*169*
Generic	*3*	*3*	*3*	*9*	*23*	*53*	*23*
Question	*0*	*0*	*0*	*0*	*3*	*5*	*2*
Number of People Complaining	7	6	9	18	33	51	33

Note: Two people made 52% (25) of the complaints for the three month period. These people were located in Greenlane & Mt Eden.

Note: The high number of complaints in Aug-Oct was mainly due to complaints made by one person.

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Table 3 shows a breakdown of the noise complaints in the three month period August 2019 to October 2019 with the previous three quarters shown for reference.

A particular person, may have made several complaints over time. These individual complaints could have been regarding one specific aircraft operation or a more general complaint which does not reference a specific aircraft operation.

There are two types of general complaints, 'generic' and 'question'. The first relates to people lodging a general complaint about aircraft noise rather than a specific event, the second relates to people enquiring to ask for information about aircraft noise or management of noise. We therefore refer to:

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

There were a total of 48 complaints in the three month period August 2019 to October 2019, 81% related to specific aircraft events, 19% were generic complaints and 0% were question enquiries. Two people made 52% (25) of the complaints for the three month period.

The number of complaints between August 2019 to October 2019 was lower than the complaints

received in the previous quarter (May to July).

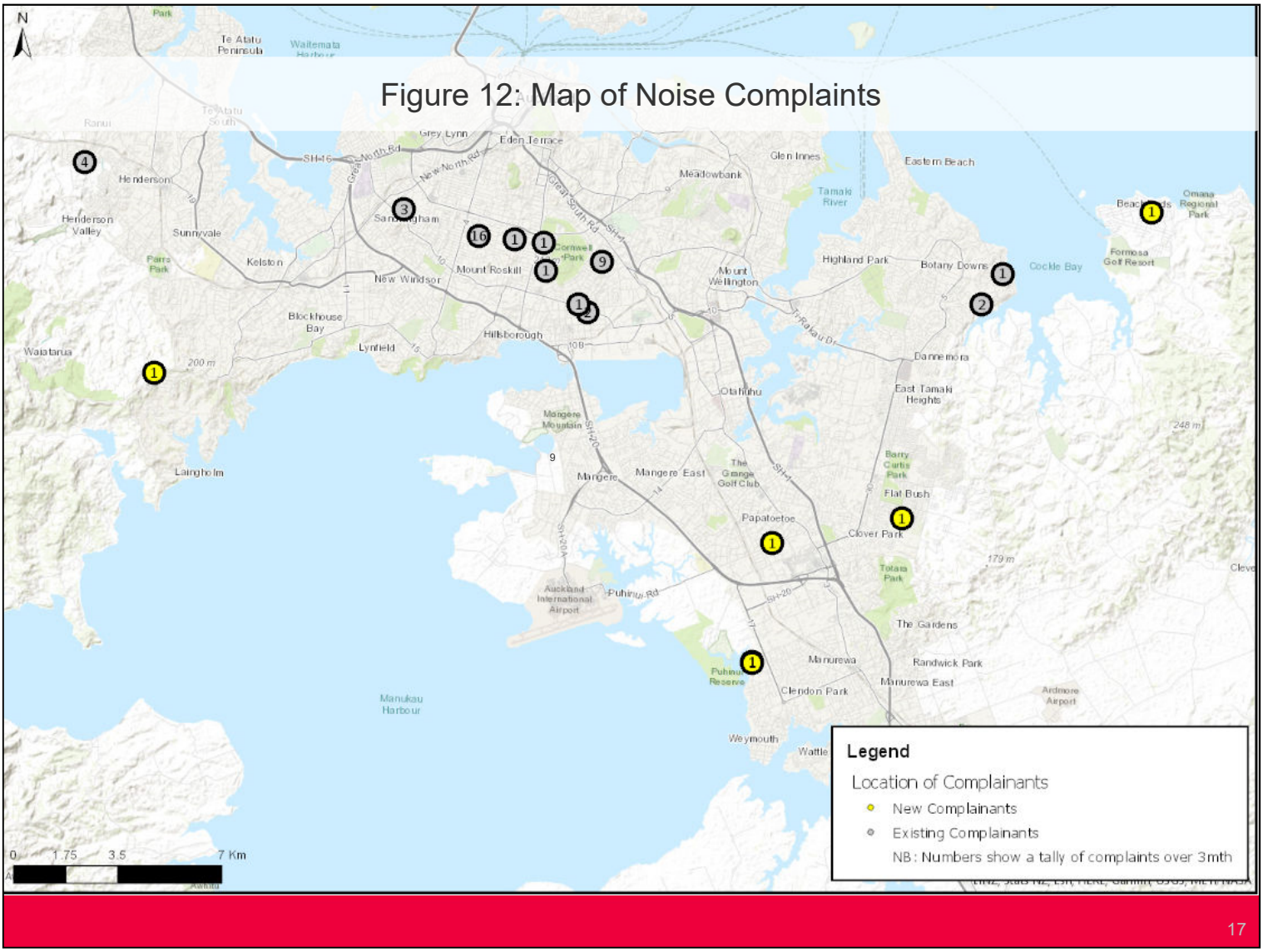


Figure 12 shows a map with the location of each complainant.

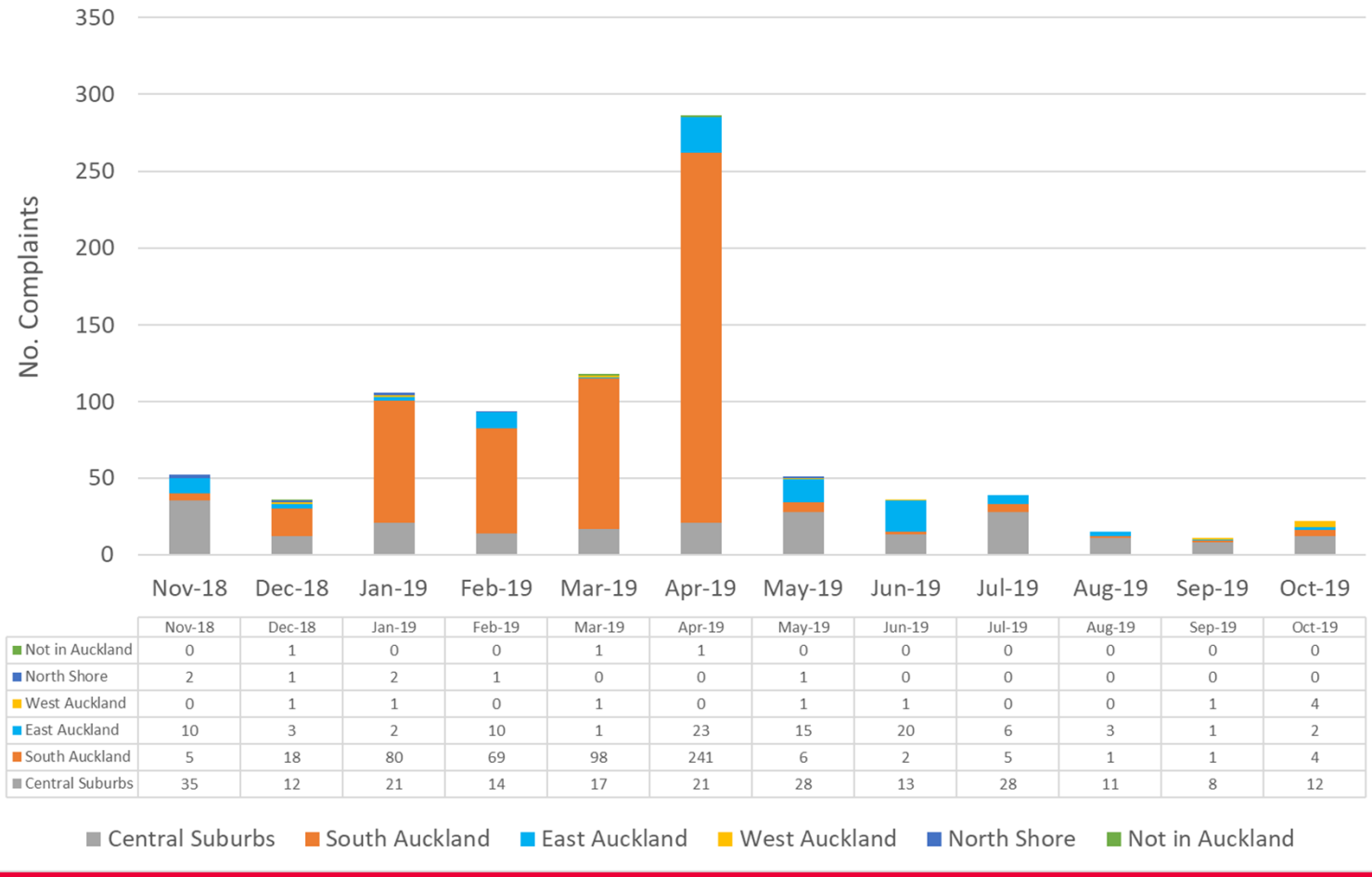
Each point represents the location of a person who complained in the three month period August 2019 to October 2019.

The colour of the point represents whether it was an existing complainant (grey - someone who has complained before) or a new complainant (yellow - someone who hasn't complained before).

The numbers on top of each point give the number of complaints made by each person in the three month period August 2019 to October 2019.

The complaints are spread all over Auckland. One existing complainant in Drury that made one complaint between is not shown in the map.

Figure 13: Number of Noise Complaints by Area



	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
Not in Auckland	0	1	0	0	1	1	0	0	0	0	0	0
North Shore	2	1	2	1	0	0	1	0	0	0	0	0
West Auckland	0	1	1	0	1	0	1	1	0	0	1	4
East Auckland	10	3	2	10	1	23	15	20	6	3	1	2
South Auckland	5	18	80	69	98	241	6	2	5	1	1	4
Central Suburbs	35	12	21	14	17	21	28	13	28	11	8	12

Figure 13 shows the number of complaints made by people residing in different areas of Auckland over the past 12 months.

The complaints in the three month period August 2019 to October 2019 were mainly from The Central Suburbs.

A list of which suburbs fall into each area is provided in Appendix C.

Figure 14: Noise Complaints by Time

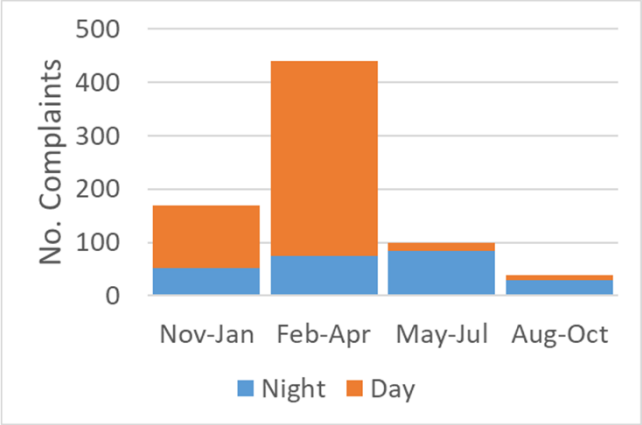


Figure 15: Noise Complaints by Runway

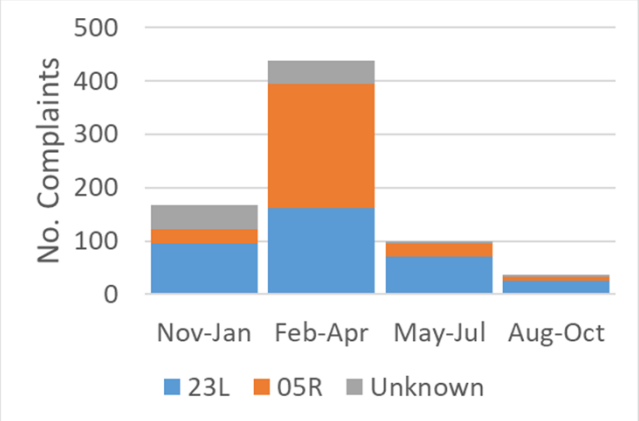


Figure 16: Noise Complaints by Aircraft

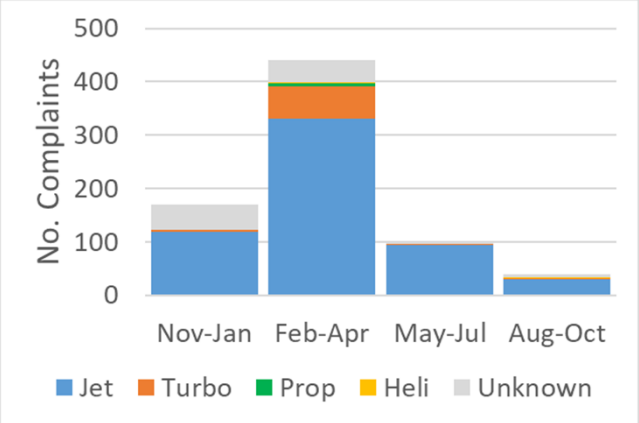
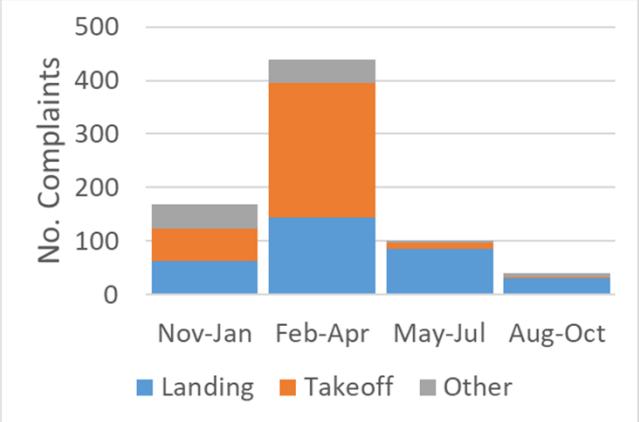


Figure 17: Noise Complaints by Operation



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Figures 14-17 show a breakdown of the ‘specific’ aircraft noise complaints made in the three month period August 2019 to October 2019 and the three quarters preceding.

Night-time flights made up 60% of the complaints in the three month period August 2019 to October 2019. The majority of complaints related to jet arrivals on runway 23L.

Figure 18: Specific Noise Complaints by Destination

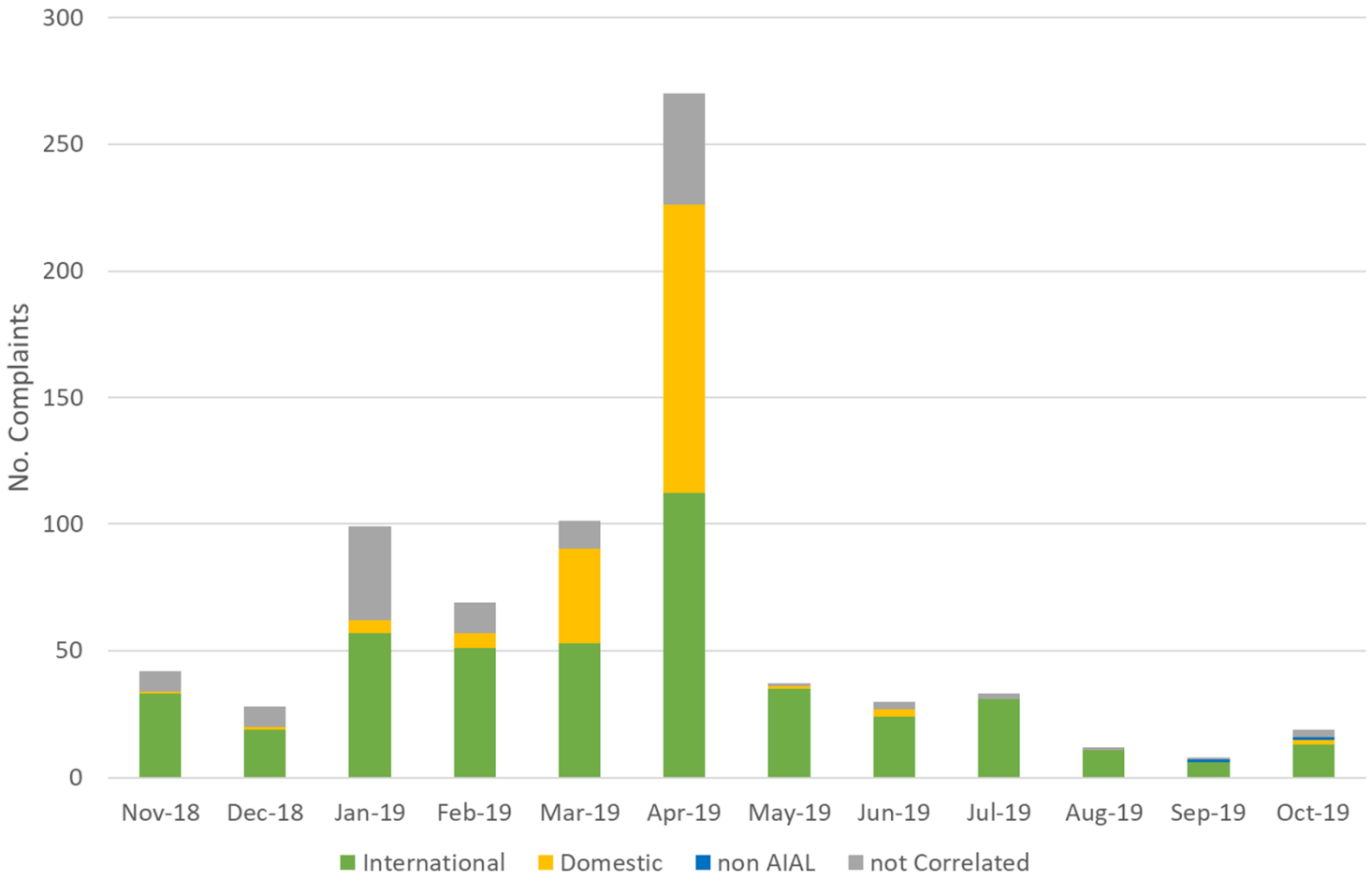

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Figure 18 shows the number of specific aircraft complaints made about international and domestic flights over the past 12 months.

The complaints in the three month period August 2019 to October 2019 were mainly regarding international flights.

Note that a number of specific aircraft complaints were not matched with a flight.

Figure 19: Specific Noise Complaints vs Usage of Runway 05R

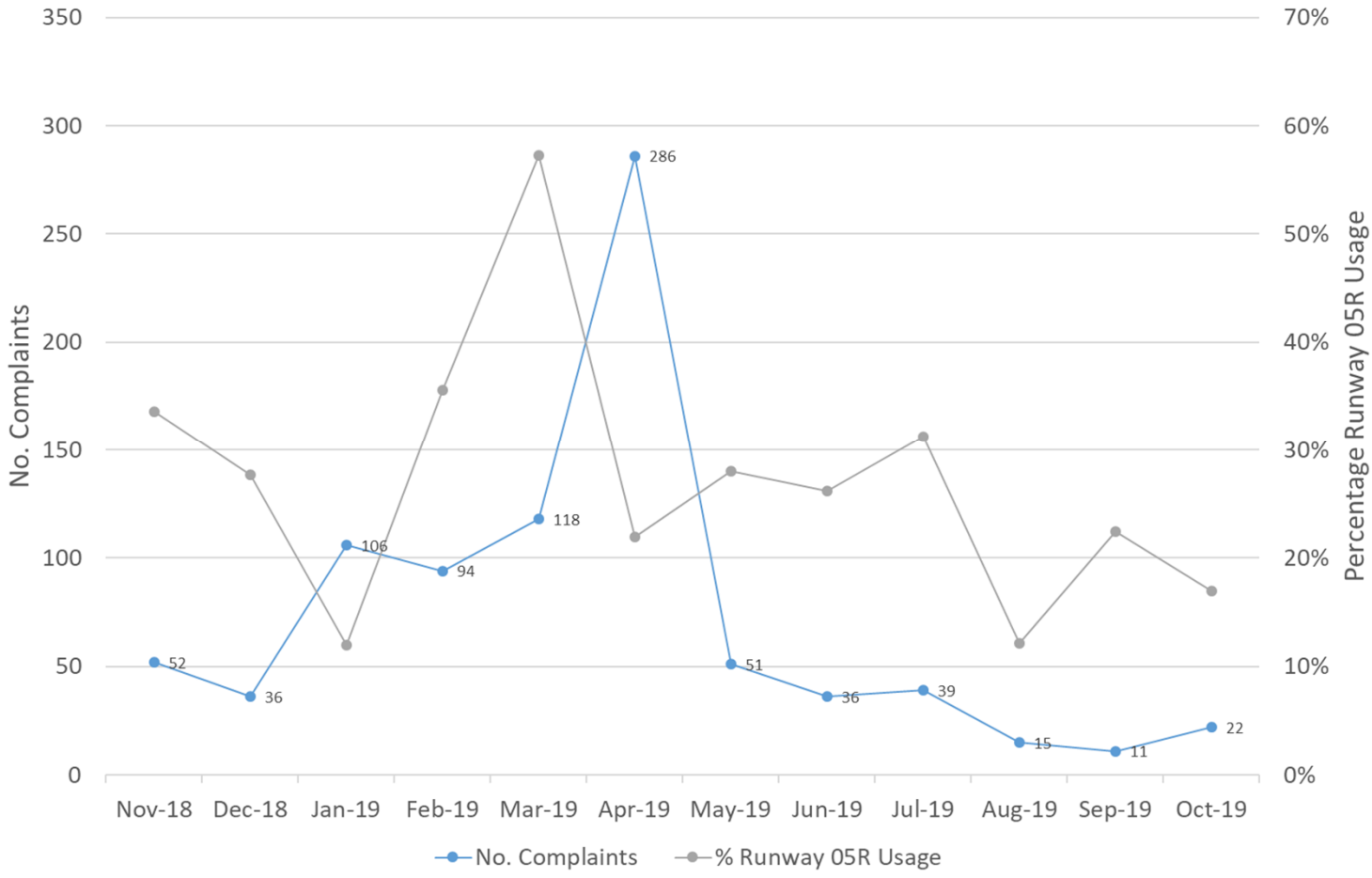

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Figure 19 shows the number of specific noise complaints per month received in the past 12 months compared to the usage of Runway 05R.

Usage of Runway 05R is associated with easterly winds which cause departing aircraft to depart to the east over populated areas instead of over the Manukau Harbour (as occurs in the predominant westerly winds).

Departing aircraft are generally louder than arriving aircraft.

There is a general correlation between runway usage and the number of complaints in recent months.

Figure 20: Noise Complaints by Hour vs Aircraft Operations by Hour (Aug-Oct 19)

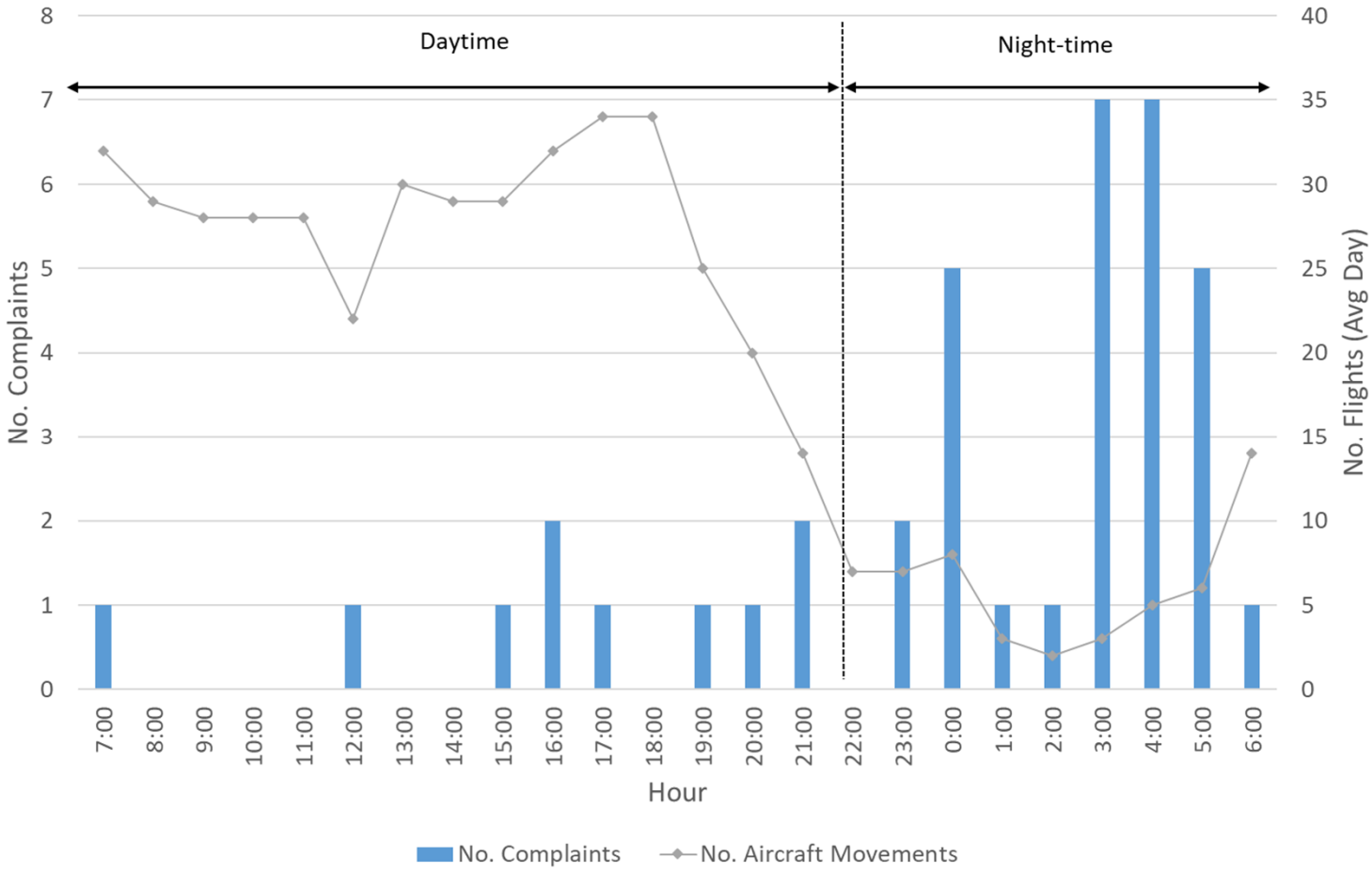

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Figure 20 shows the number of specific aircraft noise complaints and the number of aircraft operations per hour.

The blue bars show the number of complaints that related to an aircraft operation in each hour of the day in the three month period August 2019 to October 2019.

The gray line shows the average daily aircraft operations that occurred in each hour of the day during this period.

The complaints were mainly at night. There is little correlation between the number of aircraft operations each hour and the number of complaints.

Figure 21: Noise Complaints by Type (Aug - Oct 19)

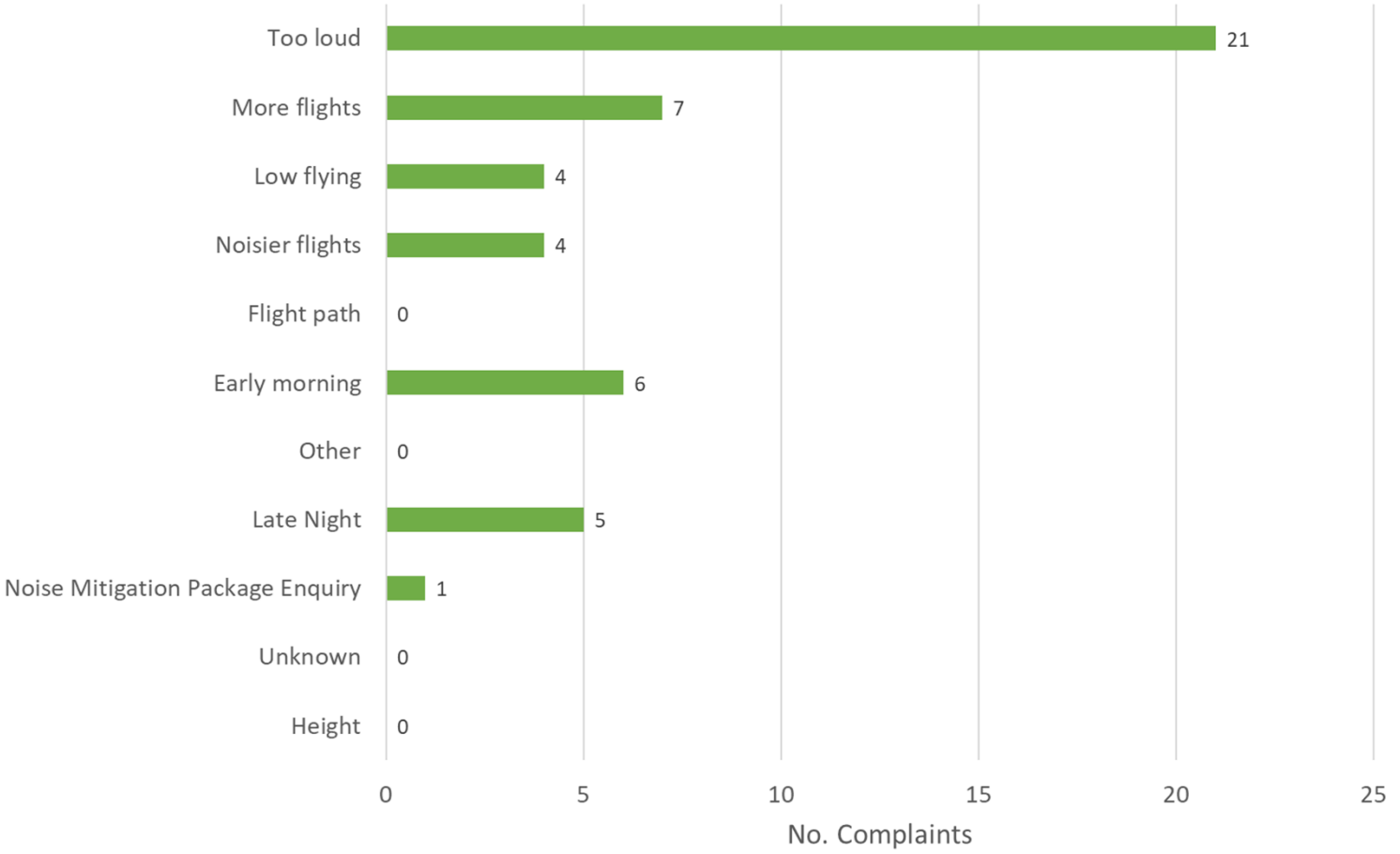

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Figure 21 shows the reason for each noise complaint. This includes generic and specific complaints.

Aircraft operations being too loud was the main reason for the complaints (44%) in the three month period August 2019 to October 2019.

More flights and early morning flights were the second and third most prevalent reason.

A full description of each cause is given in Appendix B.

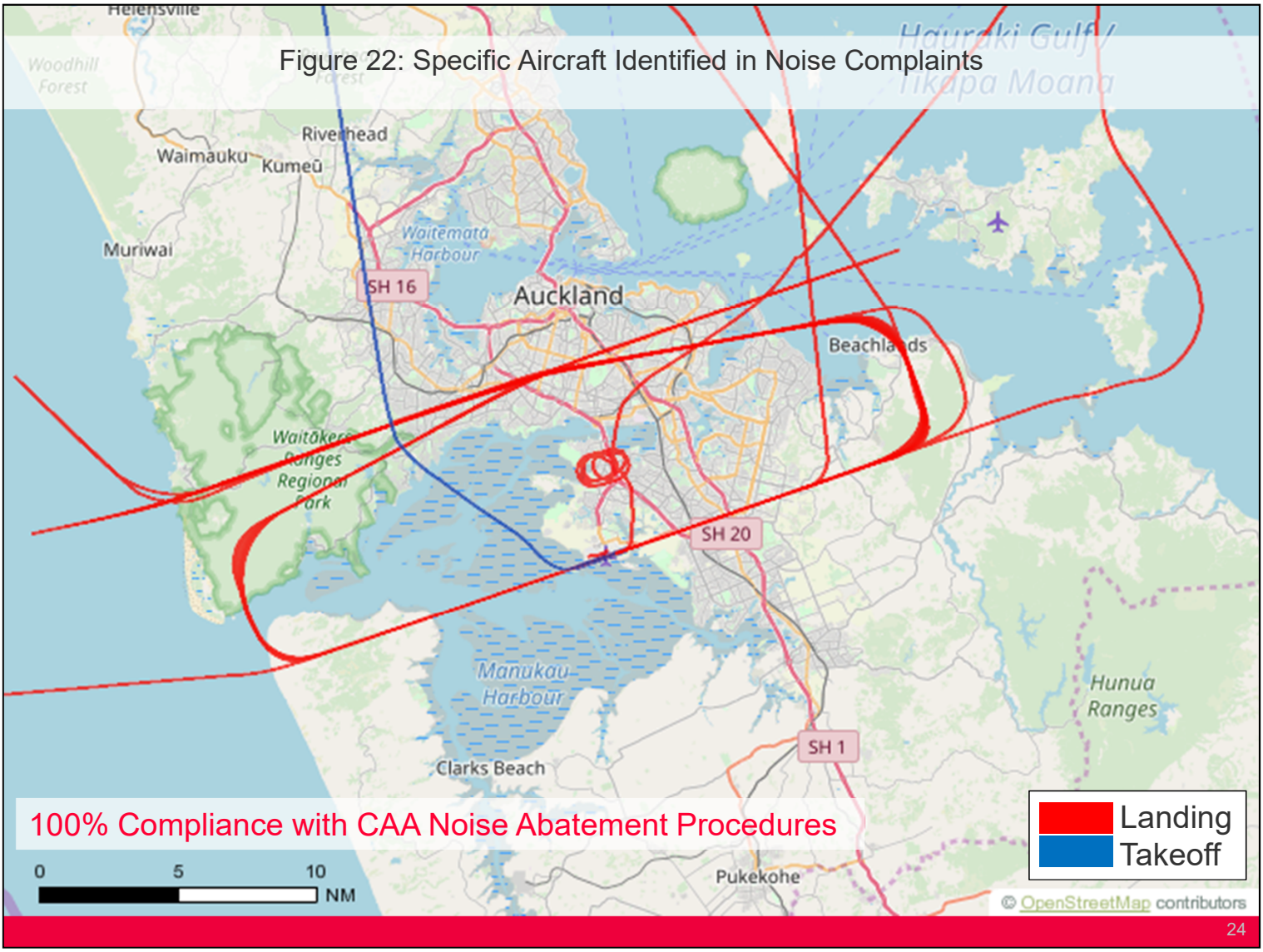

Figure 22 shows the flight paths for specific aircraft from Auckland Airport identified in noise complaints for the three month period August 2019 to October 2019.

The red lines indicate arrivals, the blue lines indicate departures.

There were 39 noise complaints that related to specific aircraft during this period. 36 of these operated out of Auckland Airport – the 36 Auckland Airport aircraft events have been reviewed and all of them complied with the Civil Aviation Authority Noise Abatement Procedures.

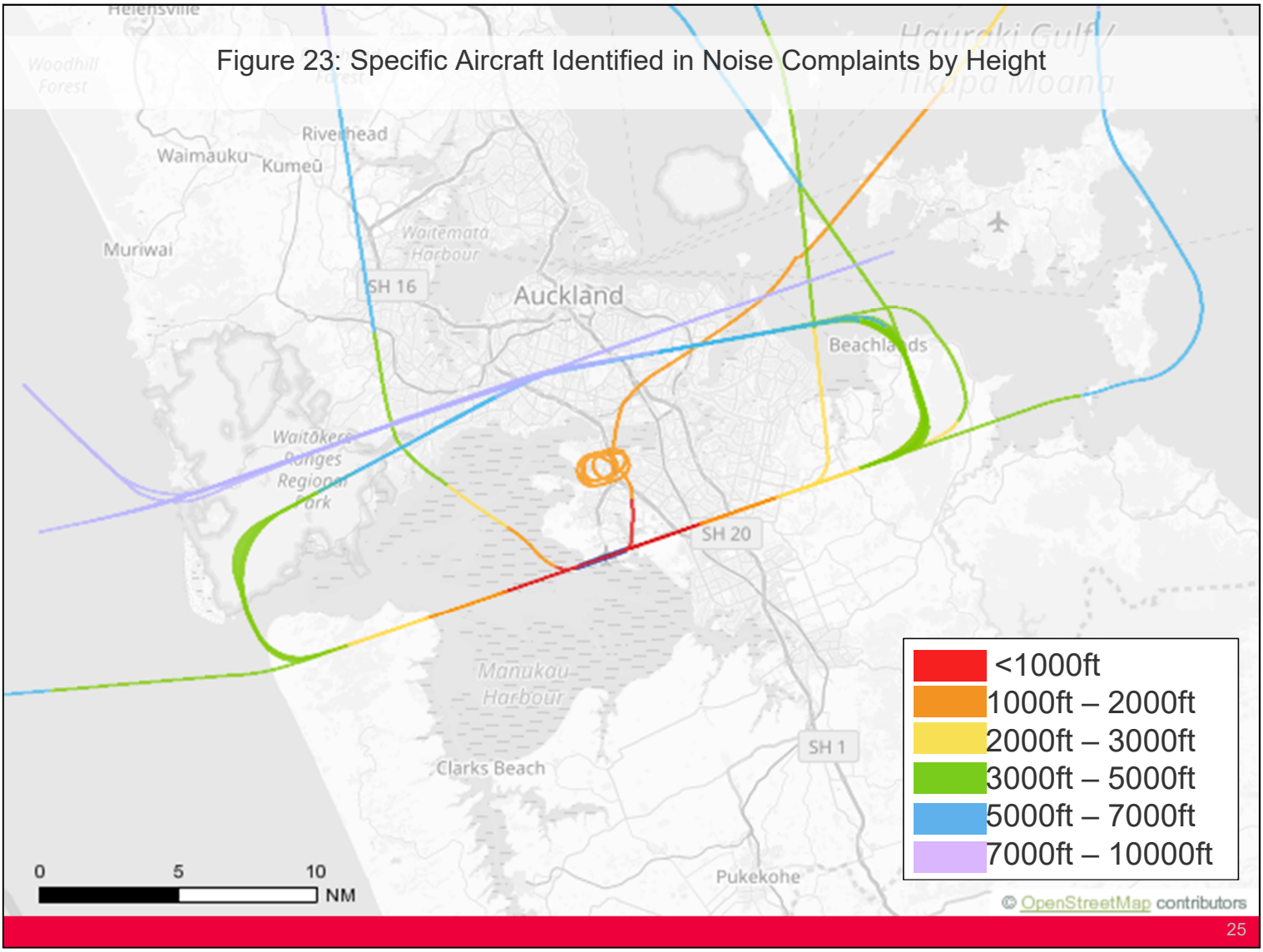

Figure 23 shows the flight paths for the 36 specific aircraft identified from Auckland Airport in noise complaints for the three month period August 2019 to October 2019.

The flight paths are shown in terms of altitude.


Noise Monitoring
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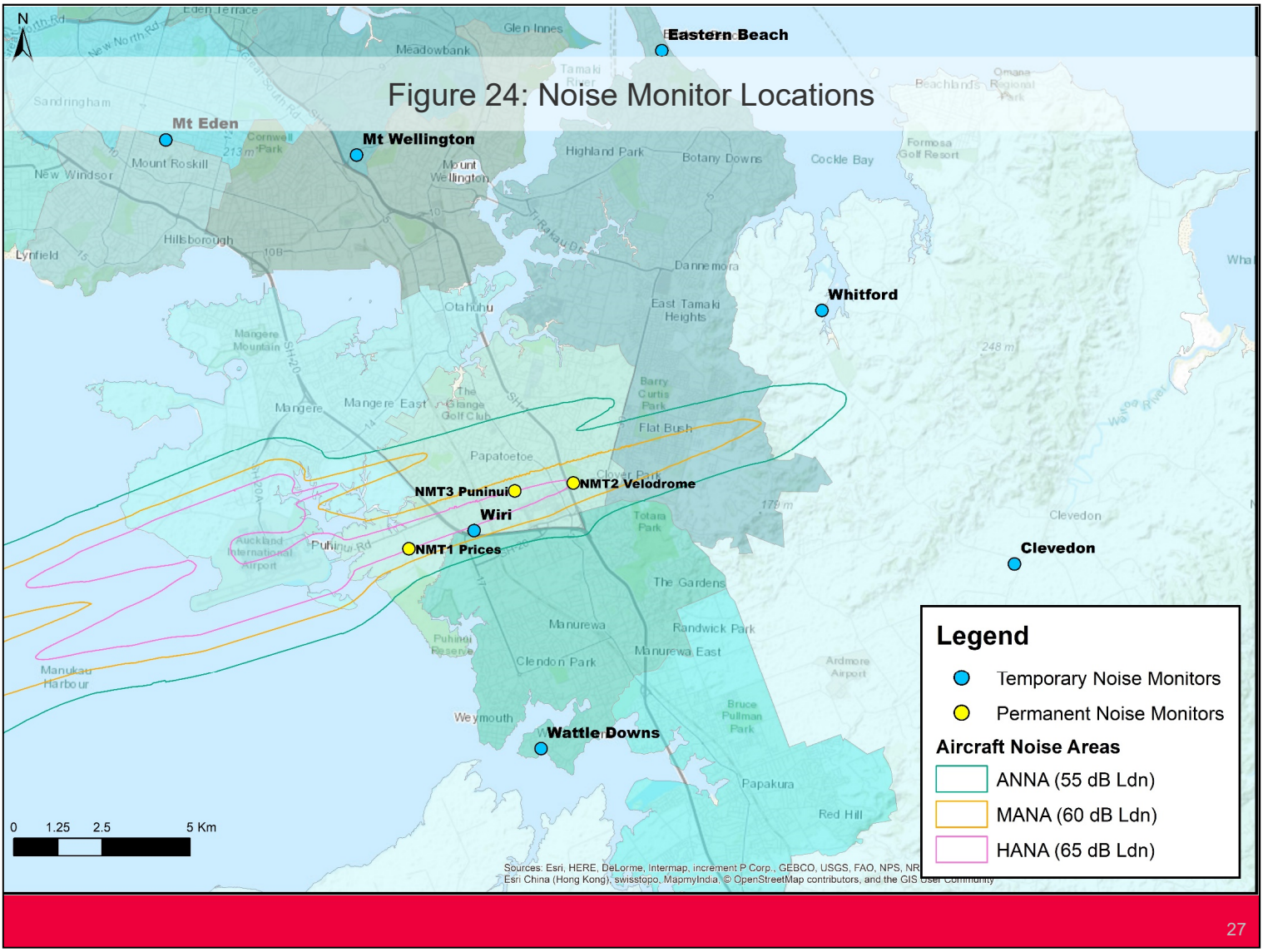

Figure 24 shows the location of Auckland Airport's three permanent and seven temporary noise monitors.

All of the permanent noise monitors are located on the outer boundary of the HANA which is set at 65 dB L_{dn} for future aircraft operations.

Figure 25: Measured 365 Day Rolling Noise Exposure (L_{dn}) – Permanent Monitors

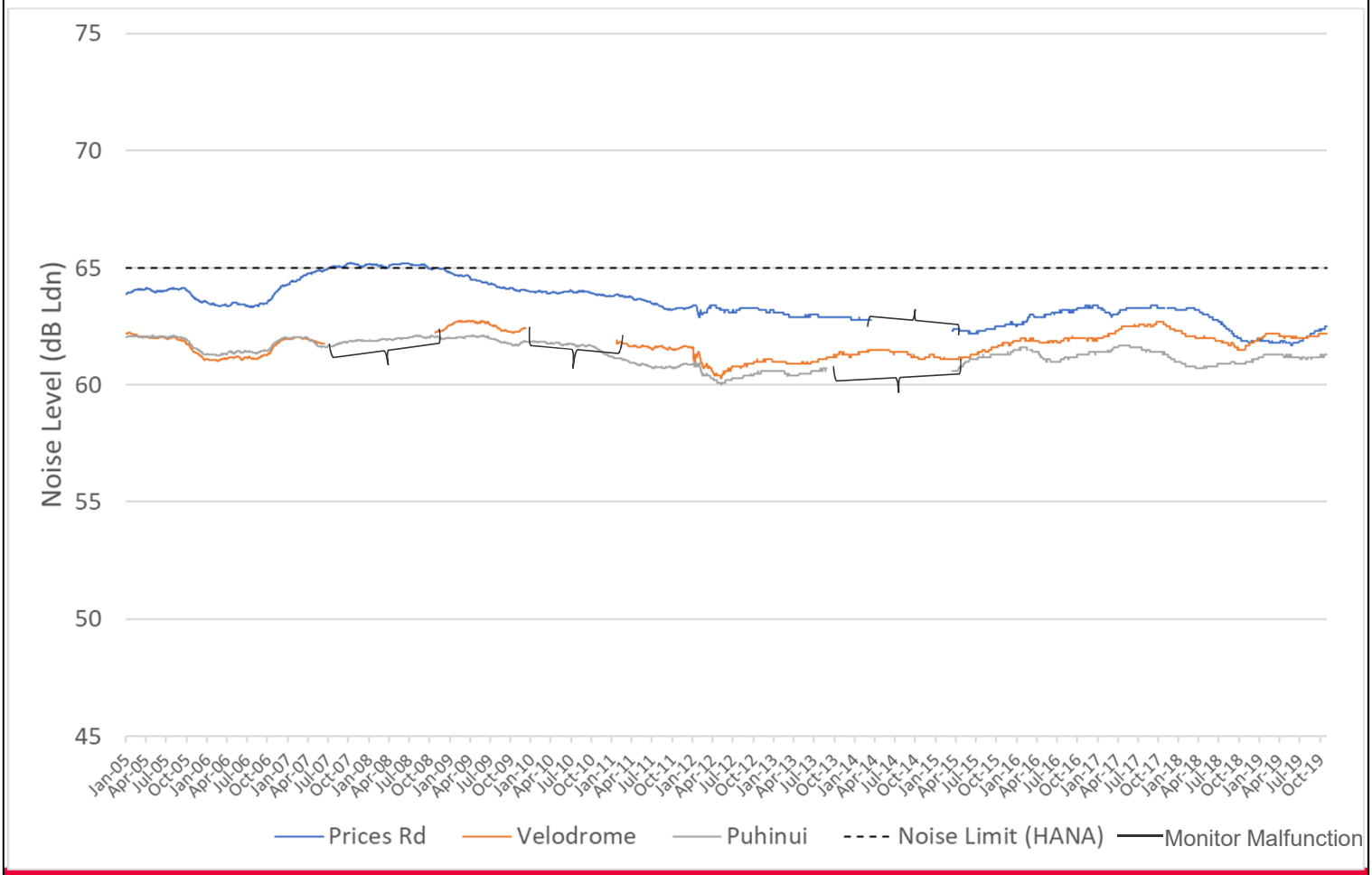

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Figure 25 shows the rolling 365 day Noise Exposure (L_{dn}) at the permanent noise monitors since January 2005.

The noise limit in the District Plan is 65 dB L_{dn} (rolling 365 day) at the boundary of the HANA.

The rolling 365 day L_{dn} is the average L_{dn} noise level over 365 days calculated each day and is the overall average L_{dn} for the 365 days preceding and including the day of the calculation.

For example the point for 31 December 2005 represents the average L_{dn} noise level from 1 January 2005 to 31 December 2005.

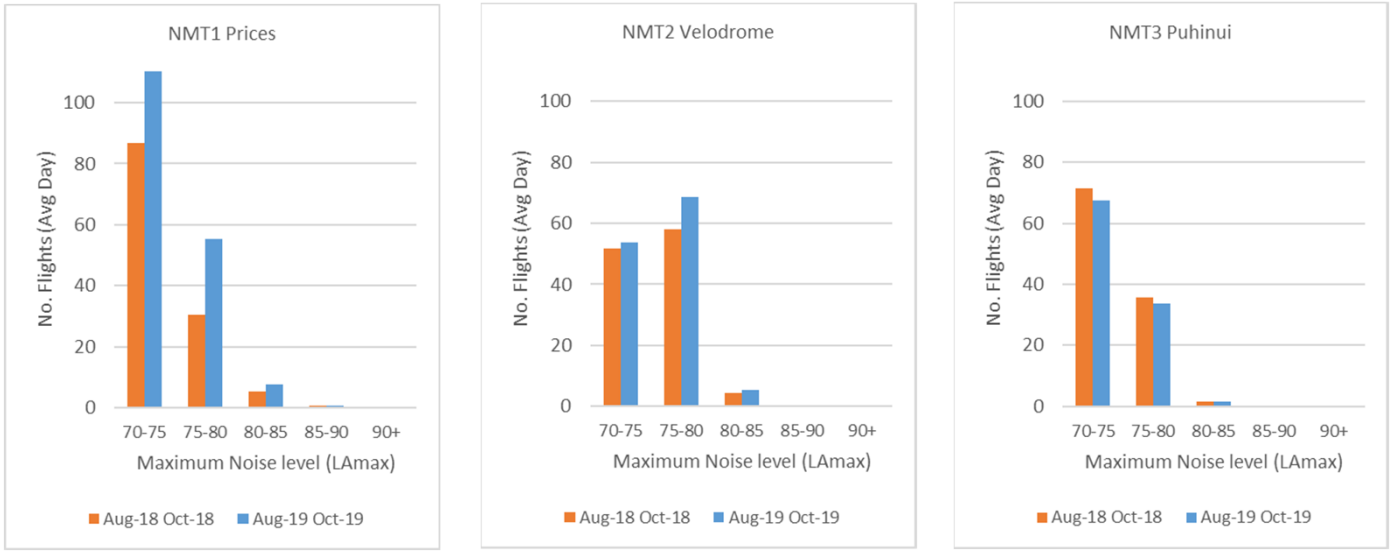
The rolling 365-day L_{dn} was below the 65 dB L_{dn} noise limit in the three month period August 2019 to October 2019.

The noise levels in the three month period August 2019 to October 2019 have increased by 0.6 dB at Prices Rd and the Velodrome and 0.4 dB at Puhinui compared to the same quarter last year.

The noise levels in the three month period August 2019 to October 2019 are 1 to 3 dB lower than in 2007/2008 when noise levels were highest.

A change in noise level of 1 to 2 dB is not generally perceptible to the human ear.

Figure 26: Number of Aircraft Noise Events in Each Noise Band
Permanent Monitors (L_{Amax} – Maximum Noise Level)



NB: Aircraft noise events over 70-75 L_{Amax} start to become disturbing inside houses with windows open as they have the potential to interfere with watching tv, talking etc.

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Figure 26 shows the average daily number of aircraft that overflew each permanent noise monitor in each noise band in the three month period August to October in 2018 (Orange bars) and 2019 (Blue bars).

L_{Amax} is the maximum noise level experienced as an aircraft overflies a monitor.

The permanent noise monitors receive 103-178 events above 70 L_{Amax} per day.

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

	NMT1 Prices	NMT2 Velodrome	NMT3 Puhinui
Total Aircraft Operations	20,570	16,003	16,732
No. Aircraft Operations Captured by Monitors	18,012	11,923	12,226
Correlation	88%	75%	73%

NB: Generally a correlation of >80% is considered reasonable. The aircraft that are missed are the lower noise level events and will not have any effect on the overall noise level. The lower correlation at Puhinui and the Velodrome is due to noise events not being captured for a period at each monitor.

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Table 4 shows the number of aircraft that flew in the vicinity of each permanent noise monitor and the number of aircraft noise events that were correlated with an aircraft flyover in the three month period August 2019 to October 2019.

Generally a noise monitor is unable to pick up each and every noise event due to ambient noise, inclement weather or other factors.

This table shows how well each noise monitor is performing in correlating aircraft noise events.

The Velodrome monitor correlated a lower number of the aircraft flyovers. This is due to higher ambient noise levels in this area from State Highway 1 which mean quieter aircraft noise events are not captured.

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	1674	40	64
Mt Wellington	17-Apr-15	1658	40	66
Eastern Beach	11-Jun-15	1603	41	64
Wiri	4-May-17	910	60	75
Wattle Downs	23-Dec-17	677	48	69
Clevedon	10-Mar-18	600	29	56

NB: The noise loggers at Mt Eden, Mt Wellington, Eastern Beach and Wattle Downs experienced a software bug which impacted the timestamp of the logged data. This impacted the correlation of noise events with Airways Radar data and the data had to be correlated manually. The manual correlation is not as accurate as Casper and thus the values may differ from usual. This bug has now been resolved with the manufacturer.

The Wiri noise monitor had a hardware malfunction in August and had to be dismantled for repair. It was redeployed in late October and thus the data in this report is only for the last half of October.

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Table 5 gives a summary of the measured noise levels at each temporary noise monitor since deployment (up until 31 October 2019).

The measured L_{dn} for aircraft noise ranges from 29-48 dB L_{dn} across the various temporary monitor locations, with the exception of the noise monitor in Wiri where noise levels were 60 dB L_{dn}.

New Zealand Standard NZS 6805 states that areas exposed to noise levels below 55 dB L_{dn} are suitable for residential development. The noise levels measured at the temporary noise monitors are 7-26 dB below the 55 dB L_{dn} New Zealand Standard, with the exception of the noise monitor in Wiri.

The noise levels measured at the Wiri noise monitor are 5 dB above the NZS 6805 guideline which is why this location is within the Moderate Aircraft Noise Area.

The average L_{Amax} ranges from 56-69 dB L_{Amax} across the various monitors with the exception of the noise monitor in Wiri where noise levels were 75 dB L_{Amax}.

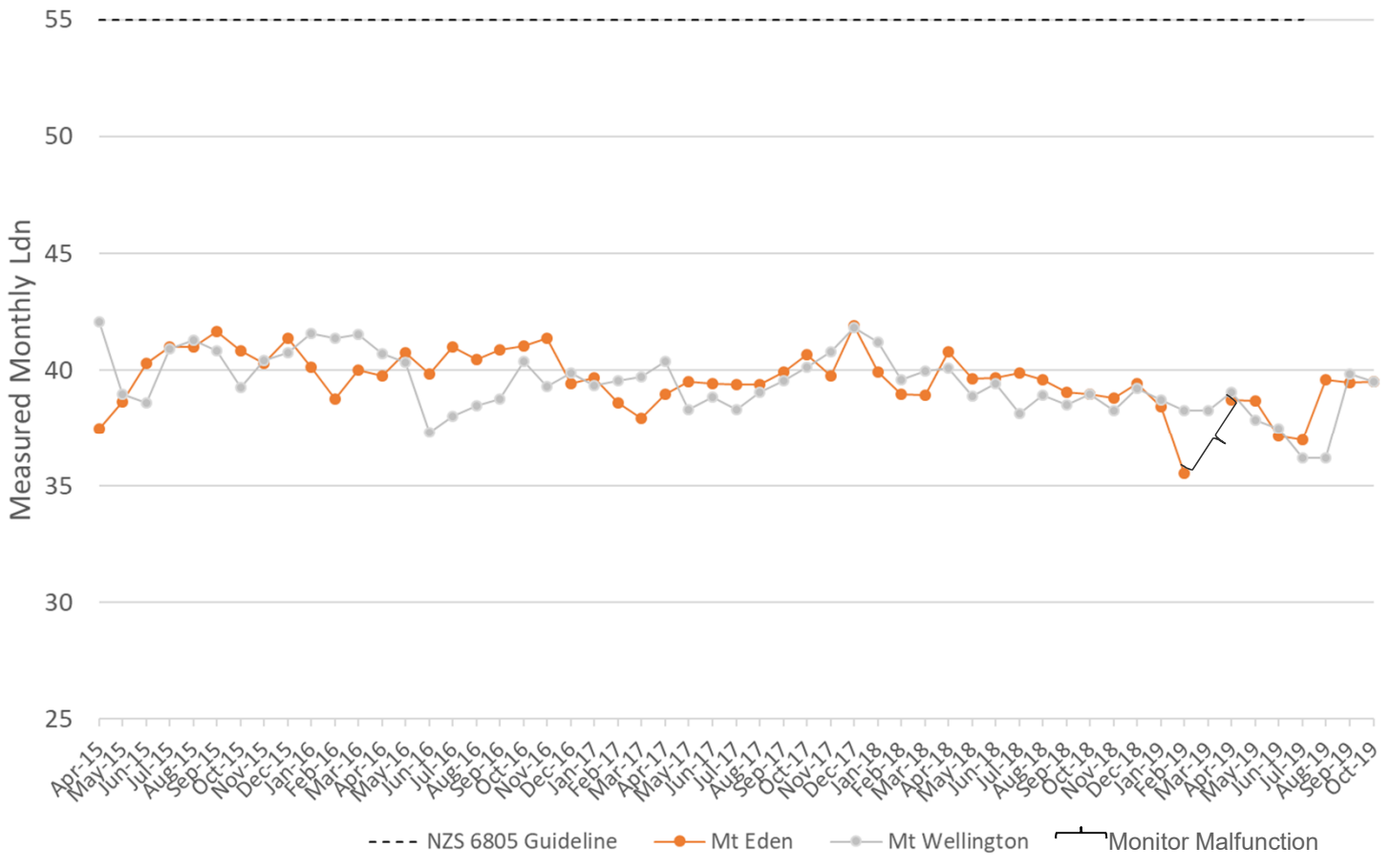
The average L_{Amax} is calculated by averaging the maximum level from all of the individual aircraft noise events during the monitoring period.

The L_{Amax} differs for each aircraft operation depending on the aircraft type, type of operation etc.

Aircraft noise events over 70-75 L_{Amax} start to become disturbing inside houses with windows open as they have the potential to interfere with watching tv, talking etc.

There was generally less than one flyover recorded at the temporary monitors above 70 dB L_{Amax} apart from the noise monitors in Wiri and Wattle Downs which had 20 & 23 noise events above 70 dB L_{amax} respectively.

Figure 27: Measured Monthly Noise Exposure (L_{dn}) – Central Suburbs Temporary Monitors



32

Figure 27 shows the monthly Noise Exposure (L_{dn}) trends for aircraft noise at the temporary noise monitors in the Central Suburbs since their deployment.

The L_{dn} fluctuates month on month by 6 dB at each noise monitor depending on aircraft operations, wind direction and other factors.

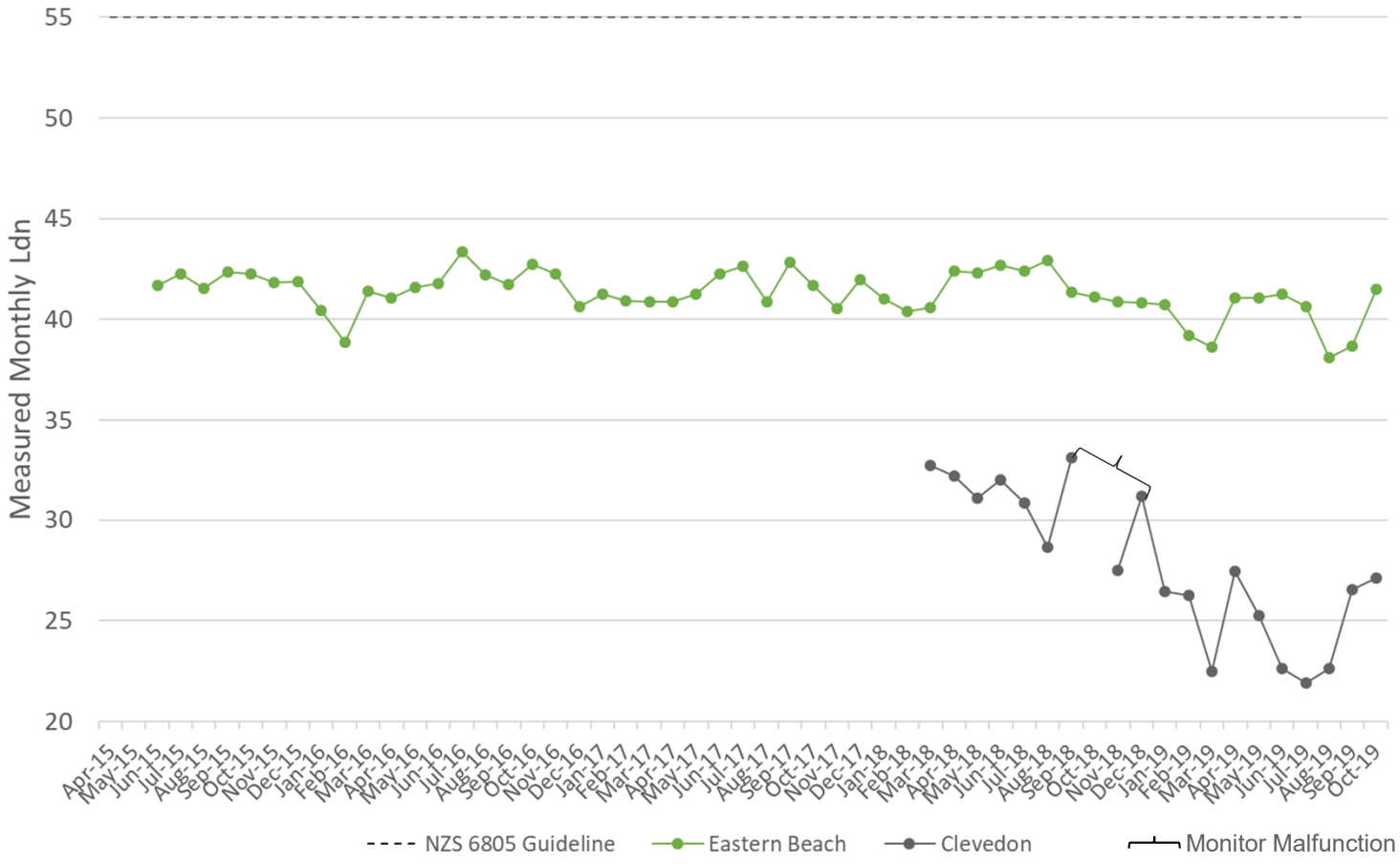
There are no significant trends in the data.

The measured L_{dn} for aircraft noise ranges from 37-43 dB L_{dn} per month across the Central Suburb monitor locations.

New Zealand Standard NZS 6805 states that areas exposed to noise levels below 55 dB L_{dn} are suitable for residential development.

The noise levels measured at the temporary noise monitors in the Central Suburbs are 12-19 dB below this level.

Figure 28: Measured Monthly Noise Exposure (L_{dn}) – Eastern Suburbs Temporary Monitors



33

Figure 28 shows the monthly Noise Exposure (L_{dn}) trends for aircraft noise at the temporary noise monitors in East Auckland since their deployment.

The L_{dn} fluctuates month on month by 5-11 dB at each noise monitor depending on aircraft operations, wind direction and other factors.

There are no significant trends in the data.

The measured L_{dn} for aircraft noise ranges from 22-43 dB L_{dn} per month across the Eastern Suburb monitor locations.

New Zealand Standard NZS 6805 states that areas exposed to noise levels below 55 dB L_{dn} are suitable for residential development.

The noise levels measured at the temporary noise monitors are 12-33 dB below this level.

Figure 29: Measured Monthly Noise Exposure (L_{dn}) – Southern Suburbs Temporary Monitors

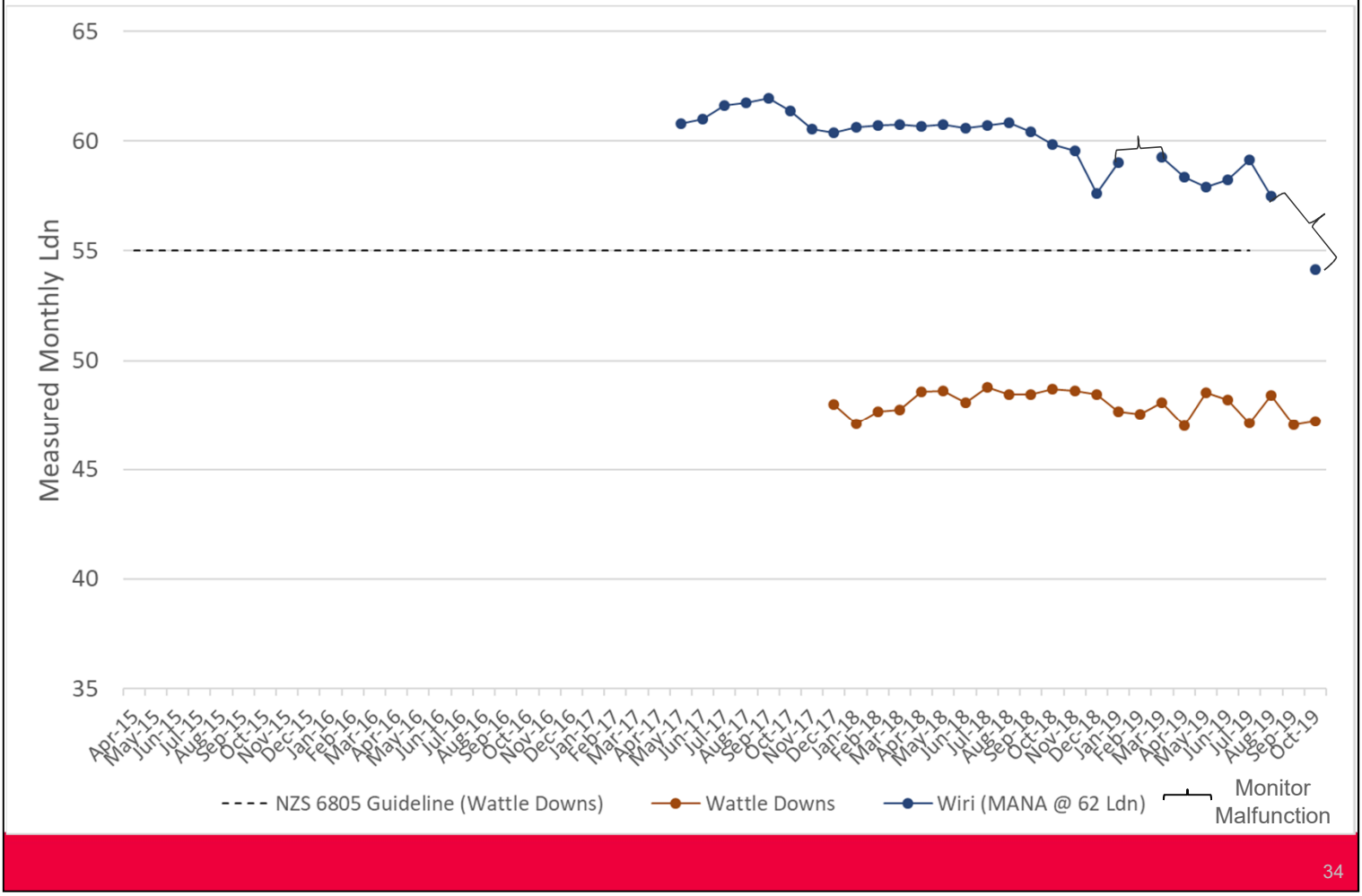


Figure 29 shows the monthly Noise Exposure (L_{dn}) trends for aircraft noise at the temporary noise monitors in South Auckland since their deployment.

The L_{dn} fluctuates month on month by around 2-8 dB at each noise monitor depending on aircraft operations, wind direction and other factors.

There are no significant trends in the data.

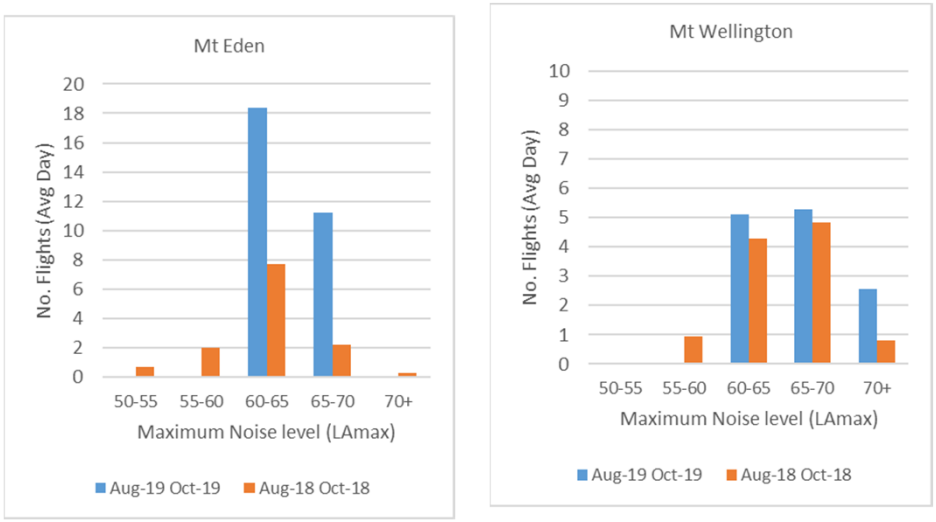
The measured L_{dn} for aircraft noise ranges from 48-60 dB L_{dn} per month across the Southern Suburb monitor locations.

New Zealand Standard NZS 6805 states that areas exposed to noise levels below 55 dB L_{dn} are suitable for residential development.

The noise level measured at the Wattle Downs noise monitor is 7 dB below this level.

This noise level measured at the Wiri noise monitor is 5 dB above the NZS 6805 guideline which is why this location is within the Moderate Aircraft Noise Area.

Figure 30: Number of Aircraft Noise Events in Each Noise Band
Central Suburbs Monitors (L_{Amax} – Maximum Noise Level)



NB: Aircraft noise events over 70-75 L_{Amax} start to become disturbing inside houses with windows open as they have the potential to interfere with watching tv, talking etc.

The number of noise events at the Mt Eden noise monitor in August-October 2019 was uncharacteristically high. This is because the aircraft noise in this area is low compared to the background noise making triggering of noise events difficult without Airways Radar data. Many of the triggered events are likely not associated with Aircraft Noise.

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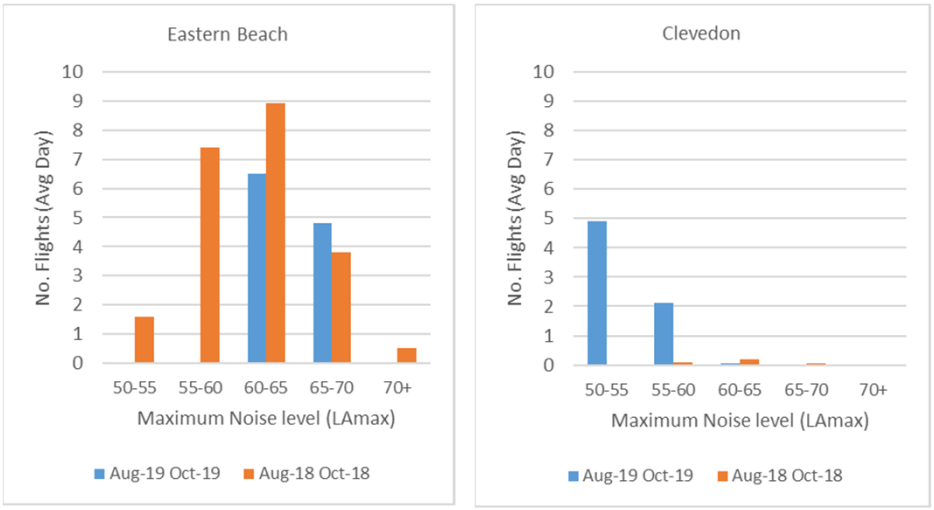
Figure 30 shows the average daily number of aircraft that overflew each of the Central Suburbs temporary noise monitors in each noise band in the three month period August to October in 2018 (Orange bars) and 2019 (Blue bars).

L_{Amax} is the maximum noise level experienced as an aircraft overflies a monitor.

These Mt Wellington noise monitor received less than three events above 70 L_{Amax} per day.

Figure 31: Number of Aircraft Noise Events in Each Noise Band
Eastern Suburbs Monitors (L_{Amax} – Maximum Noise Level)



NB: Aircraft noise events over 70-75 L_{Amax} start to become disturbing inside houses with windows open as they have the potential to interfere with watching tv, talking etc.

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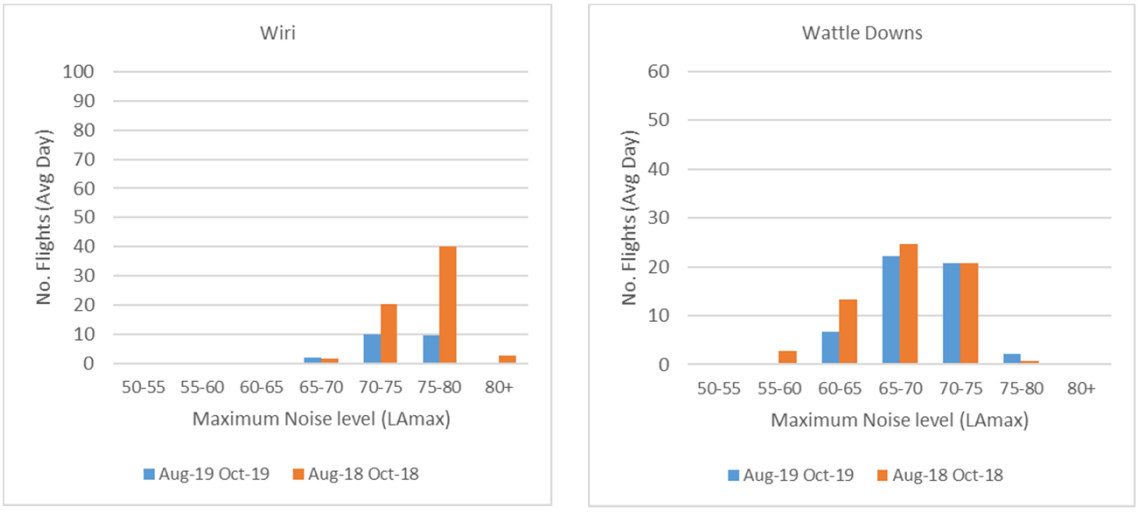
Figure 31 shows the average daily number of aircraft that overflew each of the Eastern Suburbs temporary noise monitors in each noise band in the three month period August to October in 2018 (Orange bars) and 2019 (Blue bars).

L_{Amax} is the maximum noise level experienced as an aircraft overflies a monitor.

These temporary noise monitors received less than one event above 70 L_{Amax} per day.

Figure 32: Number of Aircraft Noise Events in Each Noise Band
Southern Suburbs Monitors (L_{Amax} – Maximum Noise Level)



NB: Aircraft noise events over 70-75 L_{Amax} start to become disturbing inside houses with windows open as they have the potential to interfere with watching tv, talking etc.

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Figure 32 shows the average daily number of aircraft that overflew the Southern Suburbs temporary noise monitors in each noise band in the three month period August to October in 2018 (Orange bars) and 2019 (Blue bars).

L_{Amax} is the maximum noise level experienced as an aircraft overflies a monitor.

The Wiri noise monitor receives approximately 20 events above 70 L_{Amax} per day.

The Wattle Downs noise monitor receives approximately 23 events above 70 L_{Amax} per day.


Engine Testing

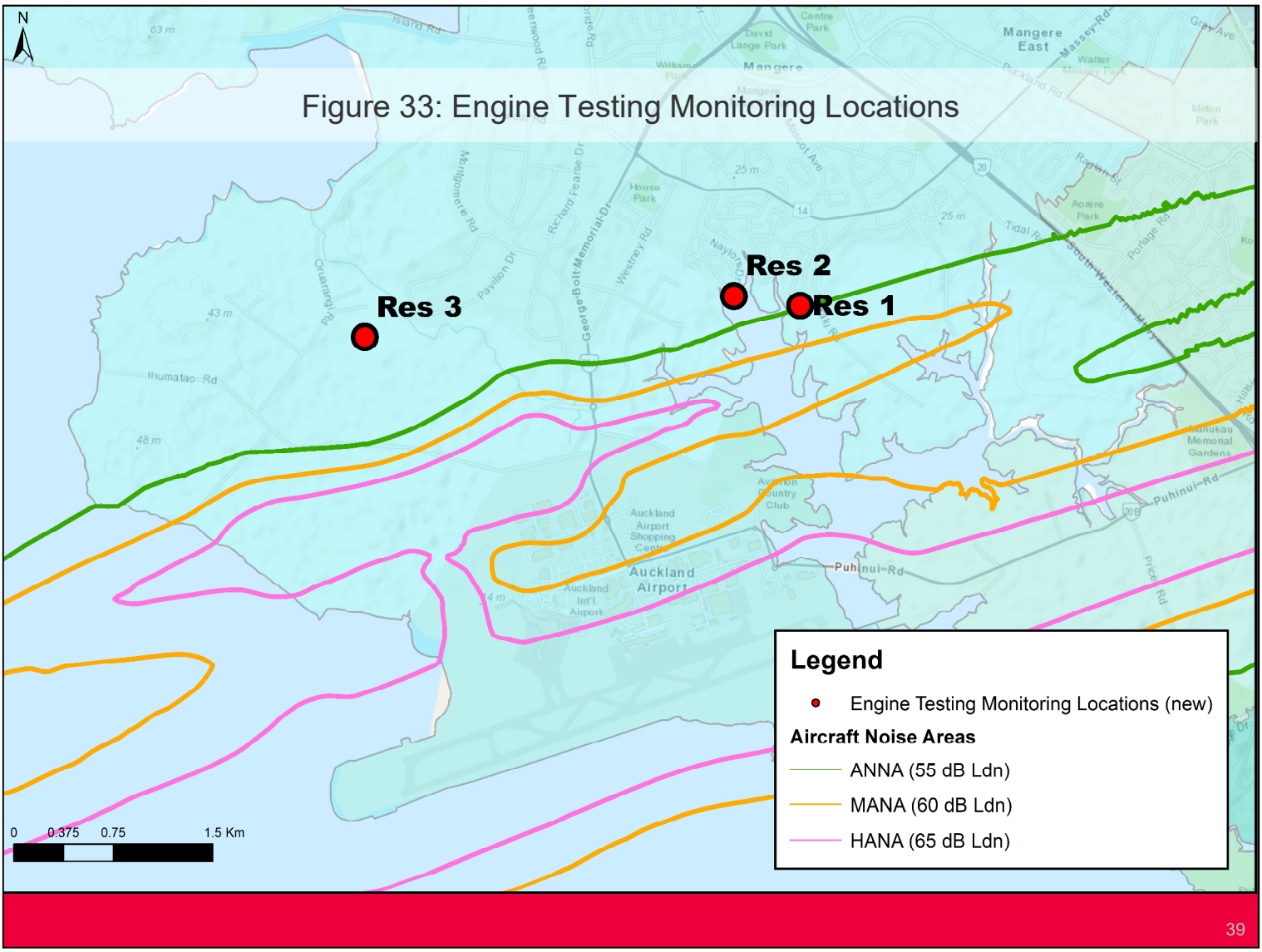
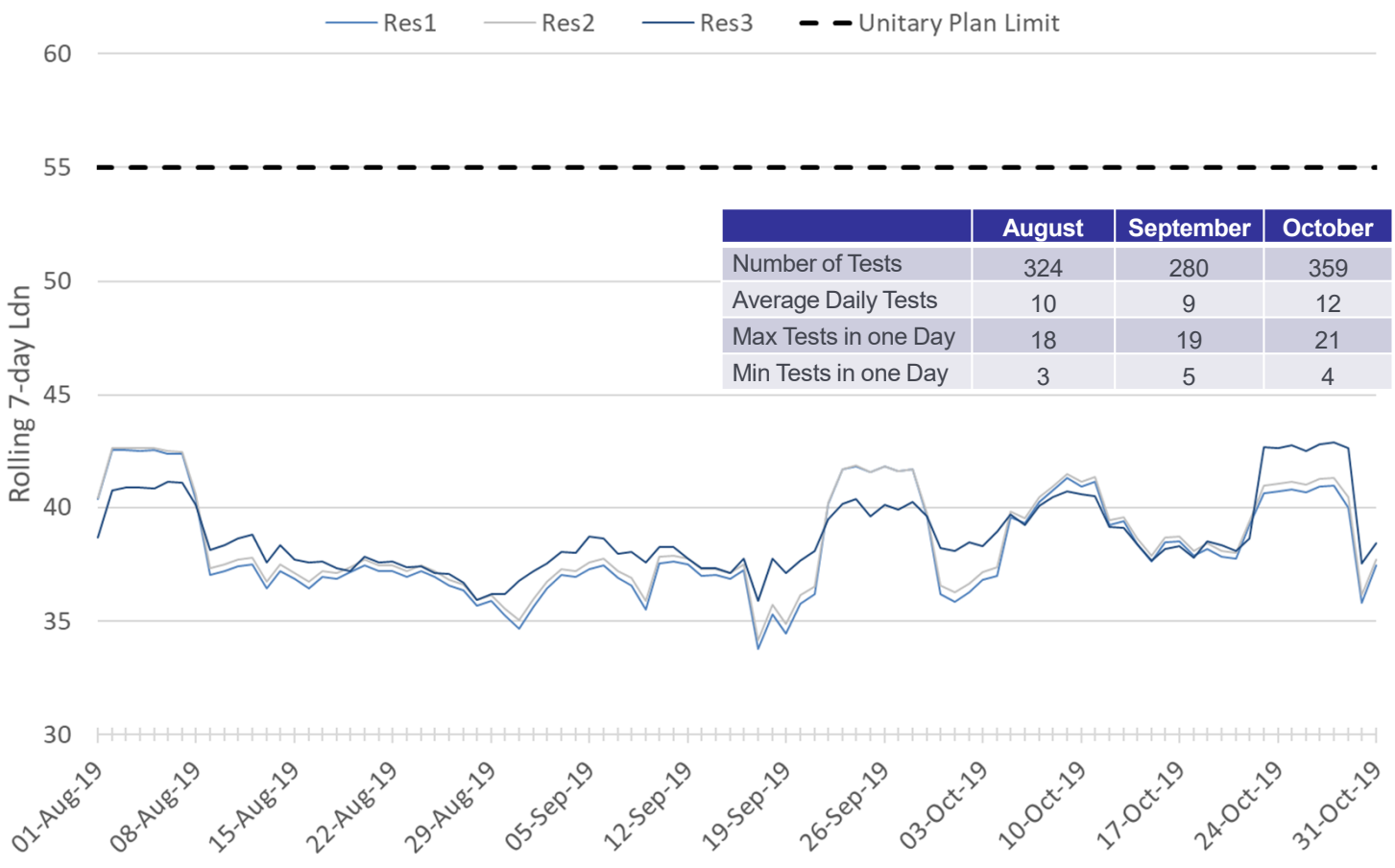


Figure 33 shows the three locations where compliance with the engine testing noise rule is calculated.

Figure 34: Engine Testing Summary



	August	September	October
Number of Tests	324	280	359
Average Daily Tests	10	9	12
Max Tests in one Day	18	19	21
Min Tests in one Day	3	5	4

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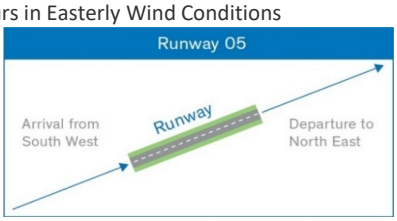
Figure 34 shows the rolling 7 day average noise level for engine testing activity at the airport in the three month period August 2019 to October 2019 .

The District Plan noise limit for engine testing activity is 55 dB L_{dn} (7 day rolling).

The engine testing noise levels were compliant with the 55 L_{dn} noise limit.

The Table insert shows the maximum, minimum and average number of engine tests performed on an average day in each month along with the total number of tests completed in each month.

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	Occurs in Westerly Wind Conditions  Occurs in Easterly Wind Conditions 
Complaint Type	
“Specific” complaint	Complaints relating to a specific aircraft operation.
“Generic” complaint	Complaints 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	The total noise that is from general ambient noise sources (cars, wind etc.). Includes 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 55-60 dB L_{dn}
MANA	Moderate Aircraft Noise Area – Set at 60-65 dB L_{dn}
HANA	High Aircraft Noise Area – Set at 65+ dB L_{dn}

Appendix B: Noise Complaint 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

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Appendix C: Suburbs by Area

Suburb	Area
Alfriston	South Auckland
Anawhata	West Auckland
Arkles Bay	North Shore
Auckland	Central Suburbs
Avondale	West Auckland
Beachlands	East Auckland
Birkdale	North Shore
Birkenhead	North Shore
Blockhouse Bay	West Auckland
Botany Downs	East Auckland
Bucklands Beach	East Auckland
Chatswood	North Shore
Clendon Park	South Auckland
Clover Park	South Auckland
Coatesville	North Shore
Cockle Bay	East Auckland
Cornwallis	West Auckland
Drury	South Auckland
East Tamaki	East Auckland
East Tamaki Heights	East Auckland
Ellerslie	Central Suburbs
Epsom	Central Suburbs
Farm Cove	East Auckland
Flat Bush	East Auckland
Forrest Hill	North Shore
Glendowie	Central Suburbs
Glenfield	North Shore
Goodwood Heights	South Auckland
Greenlane	Central Suburbs
Grey Lynn	Central Suburbs

Suburb	Area
Half Moon Bay	East Auckland
Hauraki	North Shore
Henderson Valley	West Auckland
Herne Bay	Central Suburbs
Howick	East Auckland
Huntly	Not in Auckland
Hunua	South Auckland
Karaka	South Auckland
Laingholm	West Auckland
Long Bay	North Shore
Lynfield	West Auckland
Mangere	South Auckland
Mangere Bridge	South Auckland
Mangere East	South Auckland
Manukau	South Auckland
Manukau Heads	South Auckland
Manurewa	South Auckland
Meadowbank	Central Suburbs
Mellons Bay	East Auckland
Milford	North Shore
Mount Albert	Central Suburbs
Mount Eden	Central Suburbs
Mount Roskill	Central Suburbs
Mount Wellington	Central Suburbs
Muriwai	West Auckland
Newmarket	Central Suburbs
Northcote Point	North Shore
Northcross	North Shore
Northpark	South Auckland
One Tree Hill	Central Suburbs

Suburb	Area
Onehunga	Central Suburbs
Onewhero	Not in Auckland
Orakei	East Auckland
Oratia	Central Suburbs
Otahuhu	South Auckland
Otara	South Auckland
Pakuranga	East Auckland
Pakuranga Heights	East Auckland
Panmure	Central Suburbs
Papakura	South Auckland
Papatoetoe	South Auckland
Patumahoe	South Auckland
Point Chevalier	Central Suburbs
Point England	Central Suburbs
Pollok	South Auckland
Ponsonby	Central Suburbs
Randwick Park	South Auckland
Ranui	West Auckland
Remuera	Central Suburbs
Rothesay Bay	North Shore
Royal Oak	Central Suburbs
Saint Heliers	Central Suburbs
Saint Johns	Central Suburbs
Saint Marys Bay	Central Suburbs
Sandringham	Central Suburbs
Shamrock Park	East Auckland
Shelly Park	South Auckland
Silverdale	North Shore
Snells Beach	Not in Auckland
Somerville	South Auckland

Suburb	Area
Stanley Point	North Shore
Sunnyhills	East Auckland
Takanini	South Auckland
Te Atatu South	West Auckland
The Gardens	South Auckland
Titirangi	West Auckland
Totara Heights	South Auckland
Totara Vale	South Auckland
Waitakere	West Auckland
Waiuku	South Auckland
Wattle Downs	South Auckland
Westmere	Central Suburbs
Weymouth	South Auckland
Whanganui	Not in Auckland
Whangaparaoa	North Shore
Whangaripo	Not in Auckland
Whitford	East Auckland
Wiri	South Auckland