

# Noise and community complaint - is there a correlation?

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MARSHALL DAY  
Acoustics 



# Itinerary – AIAL SMART Approach Trial

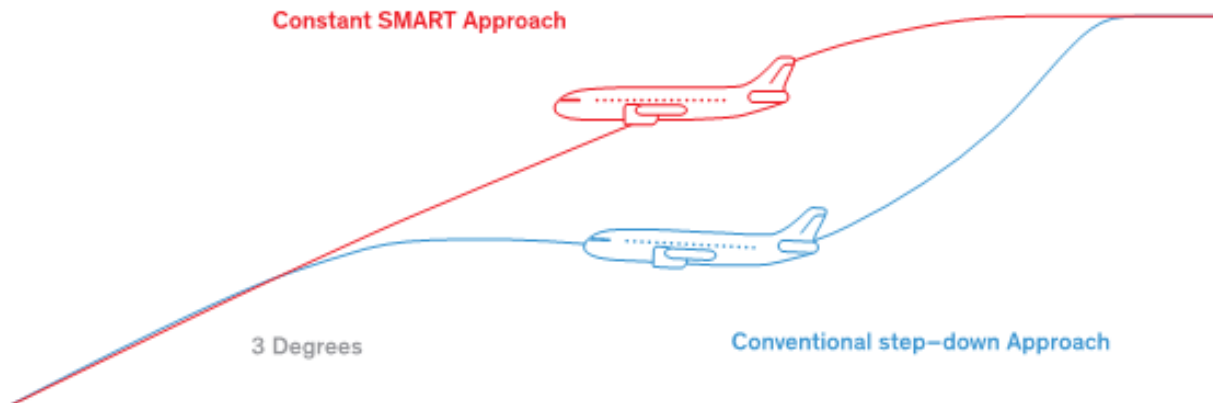
- Background
- Introducing the SMART Trial
- Complaint Analysis
- Measured Noise Levels
- Altitude Analysis
- Conclusions

# Background

- MDA engaged by AIAL since 2000
  - Noise monitoring
  - Complaint response
- 2000 to 2012 - two complaints/month
- Mostly from East Auckland
- End of 2013 – 500 complaints/month
- What happened?

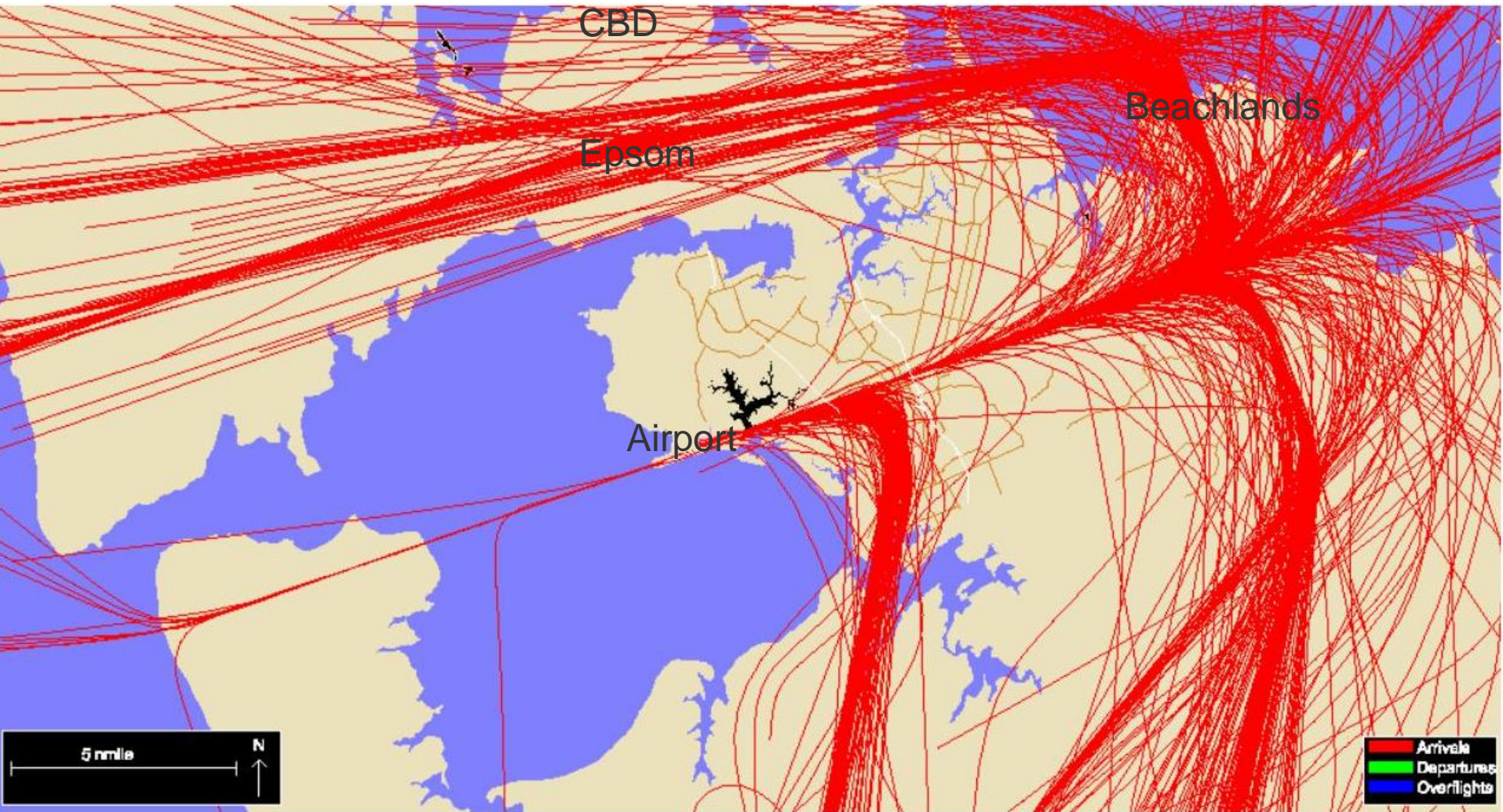
# RNP – The SMART Trial

- GPS arrival tracks
- Short cut approach
- Save fuel & emissions
- Constant Descent Approach



# Conventional Jet Arrival Tracks

1-6 Oct 2012 (pre trial)

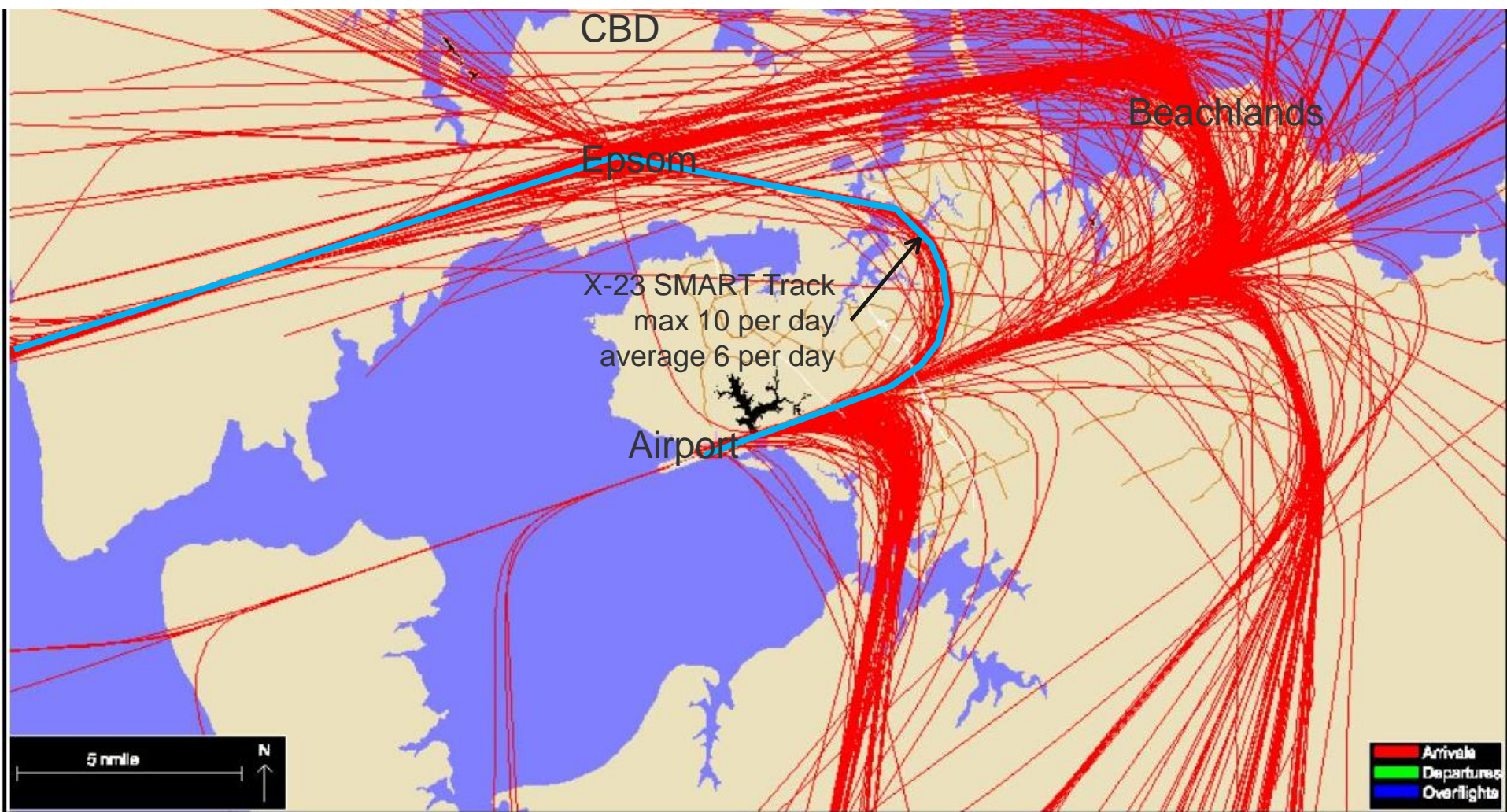


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# SMART & Conventional Jet Arrival Tracks

15-21 Jul 2013 (during trial)



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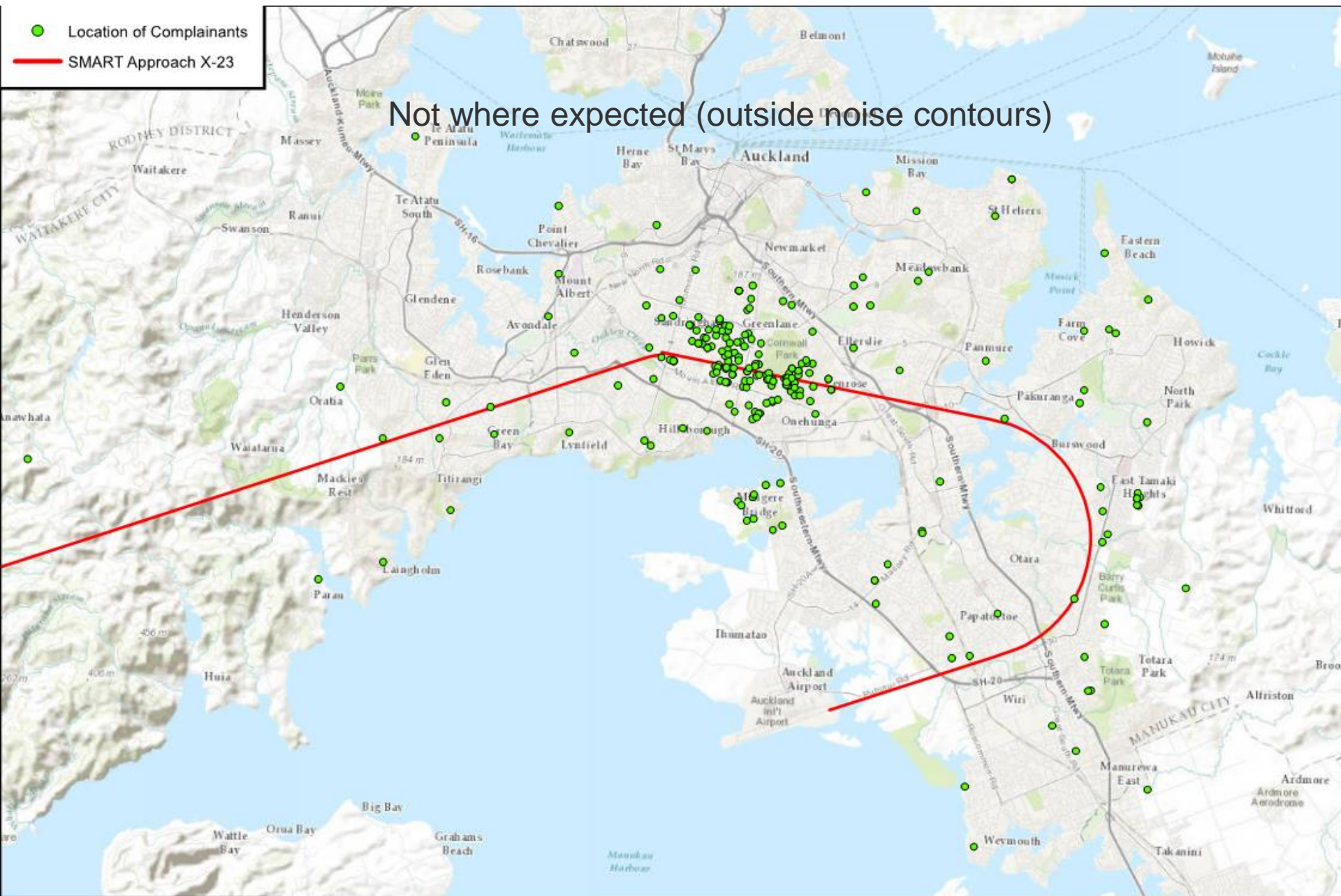
# Complaint Analysis

- 12 month Trial
- 352 complainants
- 1360 complaints
- 2236 complaint events



- Location of Complainants
- SMART Approach X-23

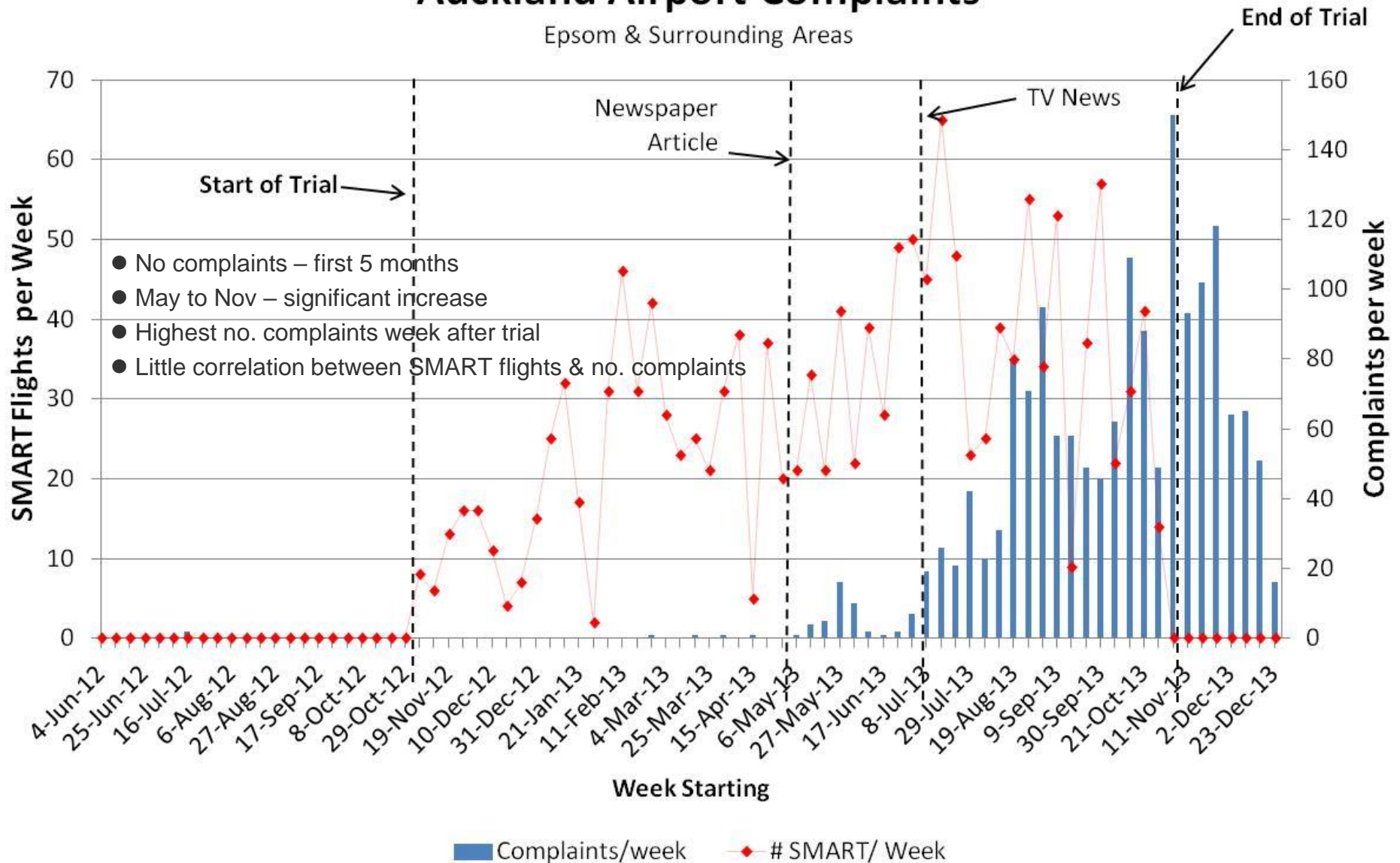
Not where expected (outside noise contours)





# Auckland Airport Complaints

Epsom & Surrounding Areas



# Event Complaints

- 76% - relate to 'Normal' approaches
- 50% of complaints from 5 people
- Night complaints – 'normal' flights
- Departure complaints – 'normal flights'

- Noise Monitors
- SMART Approach X-23



○ 5 monitoring positions

○ Measured  $L_{Amax}$  and  $L_{dn}$



# Noise Monitor Analysis

Mean  $L_{Amax}$

Location	Normal Flights	SMART Approaches	Difference
Coronation Rd	61 dB	65 dB	4 dB
Marsden Ave	60 dB	63 dB	3 dB
Moana Ave	61 dB	64 dB	3 dB
Torokina Pl	62 dB	65 dB	3 dB

**Just perceptible difference**

# Noise Monitor Analysis

Noise Exposure  $L_{dn}$

Location	Normal Day	SMART Day	Difference
Coronation Rd	43.6 dB	44.0 dB	0.4 dB
Marsden Ave	39.2 dB	39.5 dB	0.3 dB
Moana Ave	40.2 dB	40.8 dB	0.6 dB
Torokina Pl	42.1 dB	42.4 dB	0.3 dB

**No discernible difference**

Note: Normal  $L_{dn}$  is based on 30 Normal approaches per day  
SMART  $L_{dn}$  is based on 10 SMART + 20 Normal approaches

# Measured Noise Levels

- Noise levels not discernibly different
- Aircraft noise very low (40 to 45  $L_{dn}$ )
- 100,000 people/houses? exposed to higher noise levels



# Altitude Analysis

ANOMS 'Gate 9'



# Altitude Analysis - Results

Normal arrivals over 'Epsom'  
'Gate 9' – 2011 to 2013 (June, July, August)

	2011	2012	2013
Average	6359 ft	6465 ft	6597 ft

# Noise and community complaint - is there a correlation?



# Why?

- Complaints not correlated with SMART events
- Noise levels don't explain the community response

# Possible Explanation

- Done in secrecy
- No communication
- No understanding of limits on future numbers
- Awareness of aircraft noise
- Crichton Studies
- Media
- Residents door visits (cancer)

# Avoiding a Repeat Situation

- Provide early information
- Proactive monitoring (before & after)
- Consult, consult, consult



# The End

