

CALGARY
AIRPORT
AUTHORITY

YYC

Airport Community Consultative Committee

November 30, 2016



AGENDA

- 6:30 p.m. Welcome & Introductions
- 6:35 p.m. Noise Monitoring Update
- 7:15 p.m. Community Updates – quarterly reports
- 7:30 p.m. 2017 meeting schedule
- 7:35 p.m. Q&A



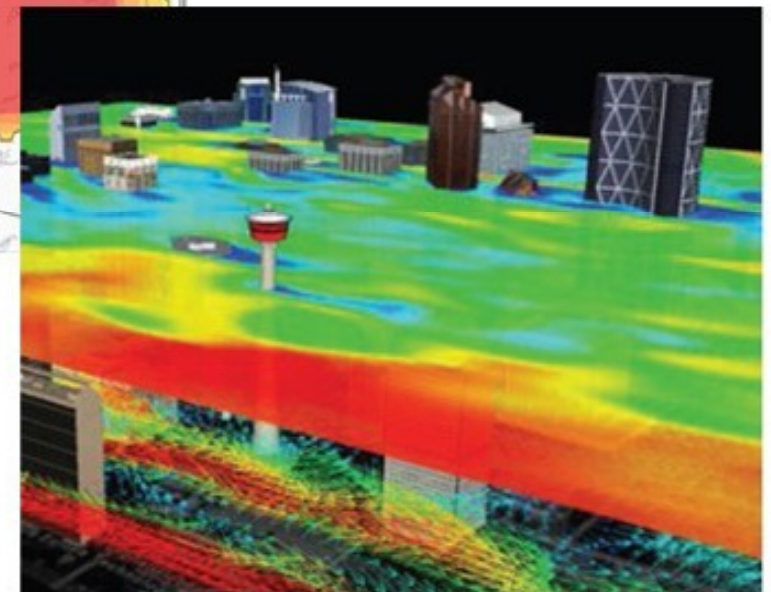
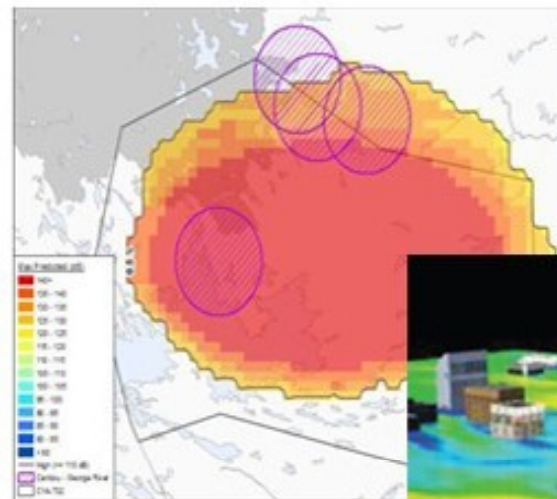
NOISE MONITORING UPDATES

Aircraft Noise Mobile Monitoring

Russ Lewis, M.Eng. P.Eng.
Acoustics and Noise Specialist
RWDI

- Russ Lewis
 - 25+ years experience in engineering
 - Calgary-based acoustics specialist
 - M.Eng. in Acoustics
 - Experience
 - Environmental noise measurement and analysis
 - Predictive noise modelling
 - Building acoustics and vibration
 - Communicating results
 - Working with stakeholders on environmental issues

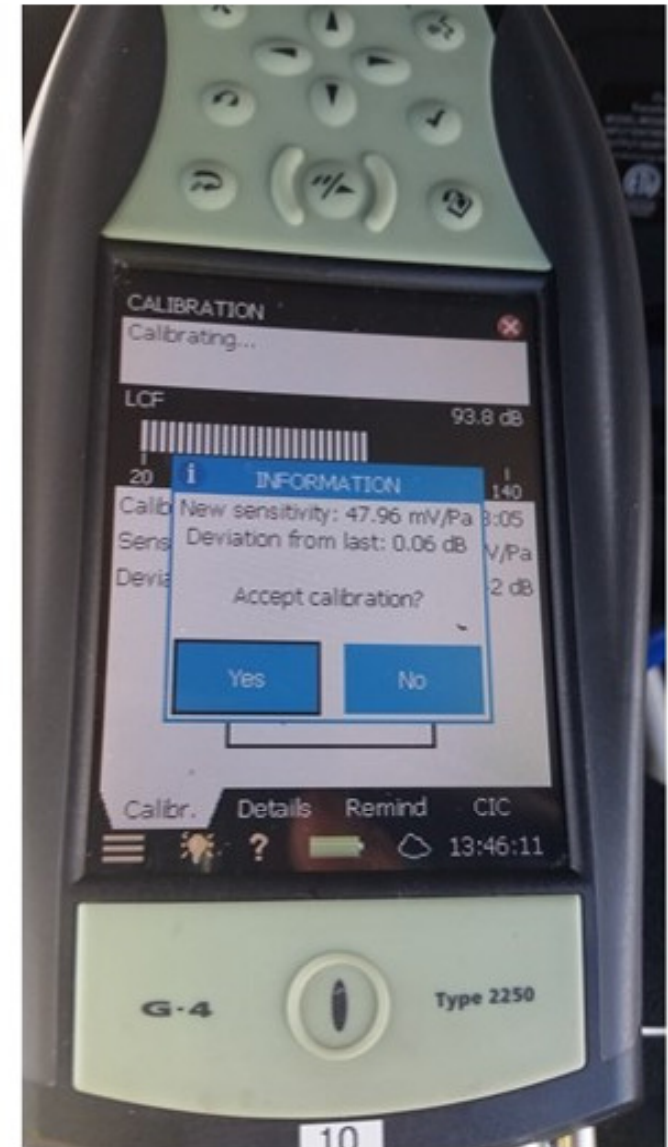
- Engineers and scientists since 1972
 - Canadian company
 - Acoustics, Noise & Vibration
 - Noise measurement and predictive modelling
 - Wind engineering
 - Microclimate
 - Air quality

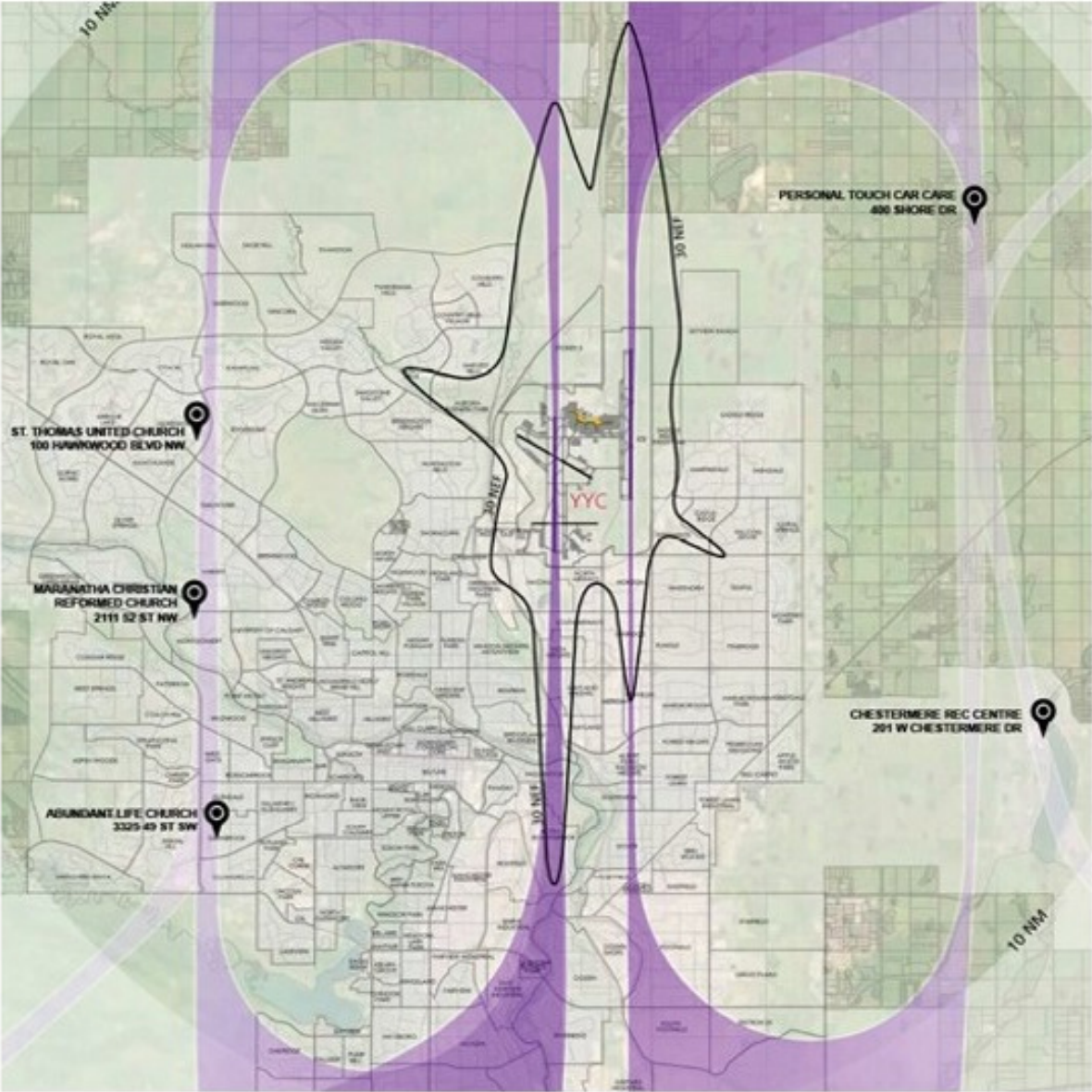


- Microphone on stand
- Stabilizing weight
- Weatherproof case
 - Sound Level Meter
 - Data Logger
 - Modem for communications
- Power
 - 120v access is best
 - Batteries
 - Solar panels

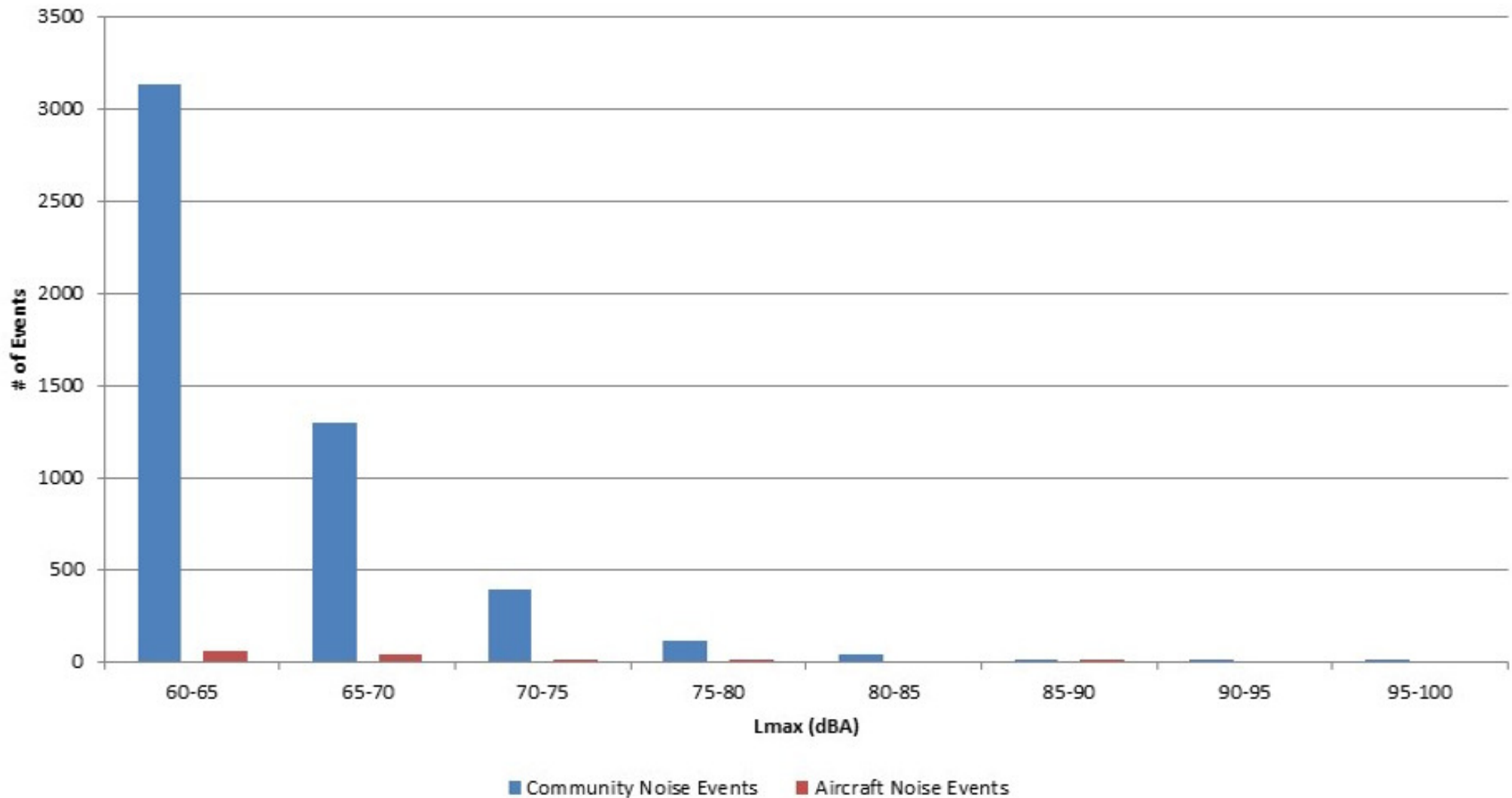


- Accuracy of data
 - Instruments used are the most accurate instruments available
 - A Type 1 B&K 2250 is shown during its calibration
 - Accurate over a very wide range of noise levels
- Calibration checked before and after all measurements
- Accurate reliable measurements require professional instruments used under known conditions





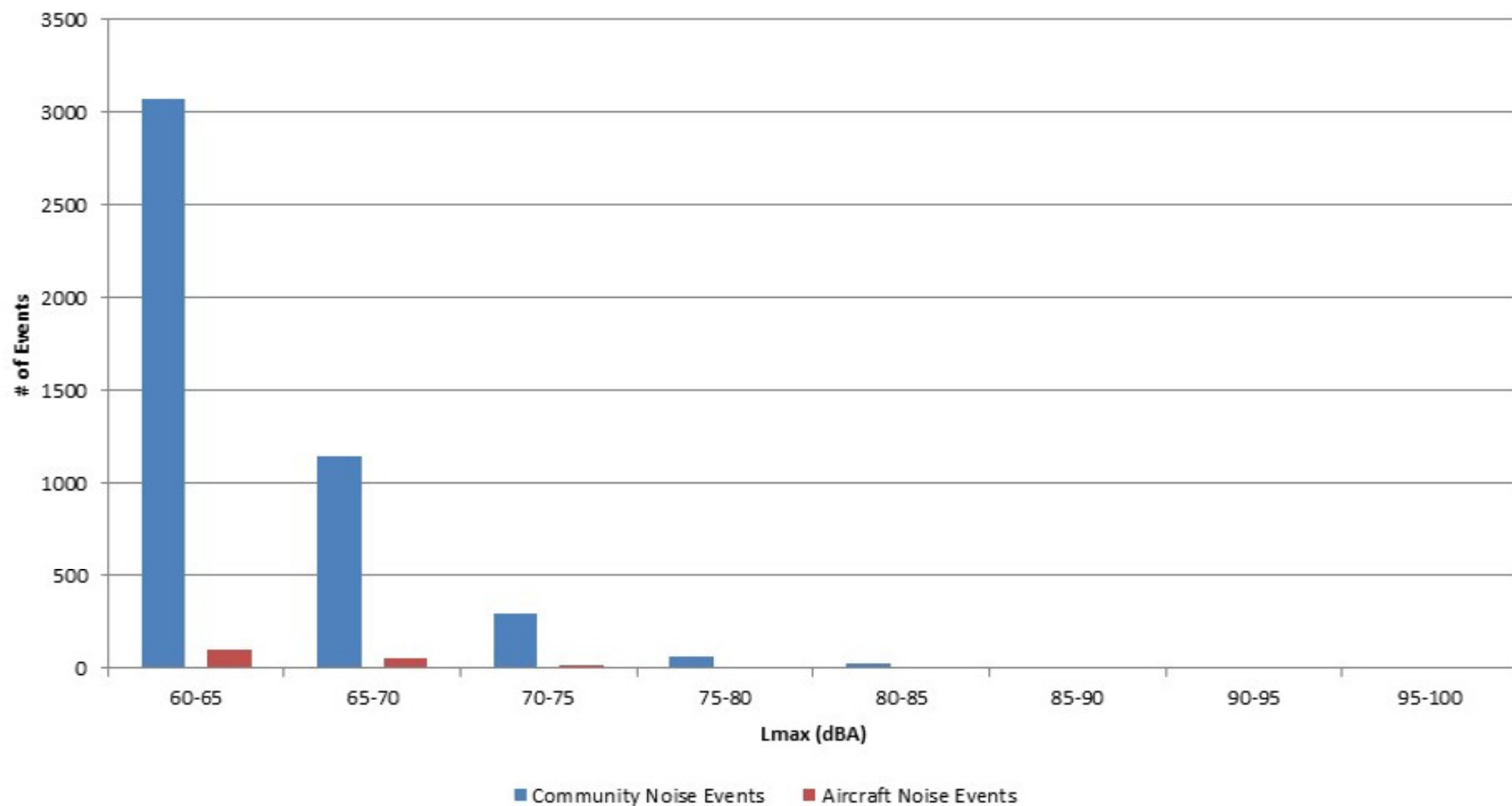
Noise Events at Hawkwood



Metric	July 8 – Aug. 7	Aug. 8 – Sept. 7	Sept. 8 – Sept. 20
Average daily community noise events	10 events	7 events	5 events
Average daily aircraft over noise monitor	43	48	46
Average daily aircraft noise events	0 events	0 events	0 events
Average daily aircraft noise events at night (between 11pm-7am)	0 events	0 events	0 events
Average altitude of aircraft during noise event	4058 ft. AGL		

A “noise event” is any noise with a sound level of at least 70 dBA.

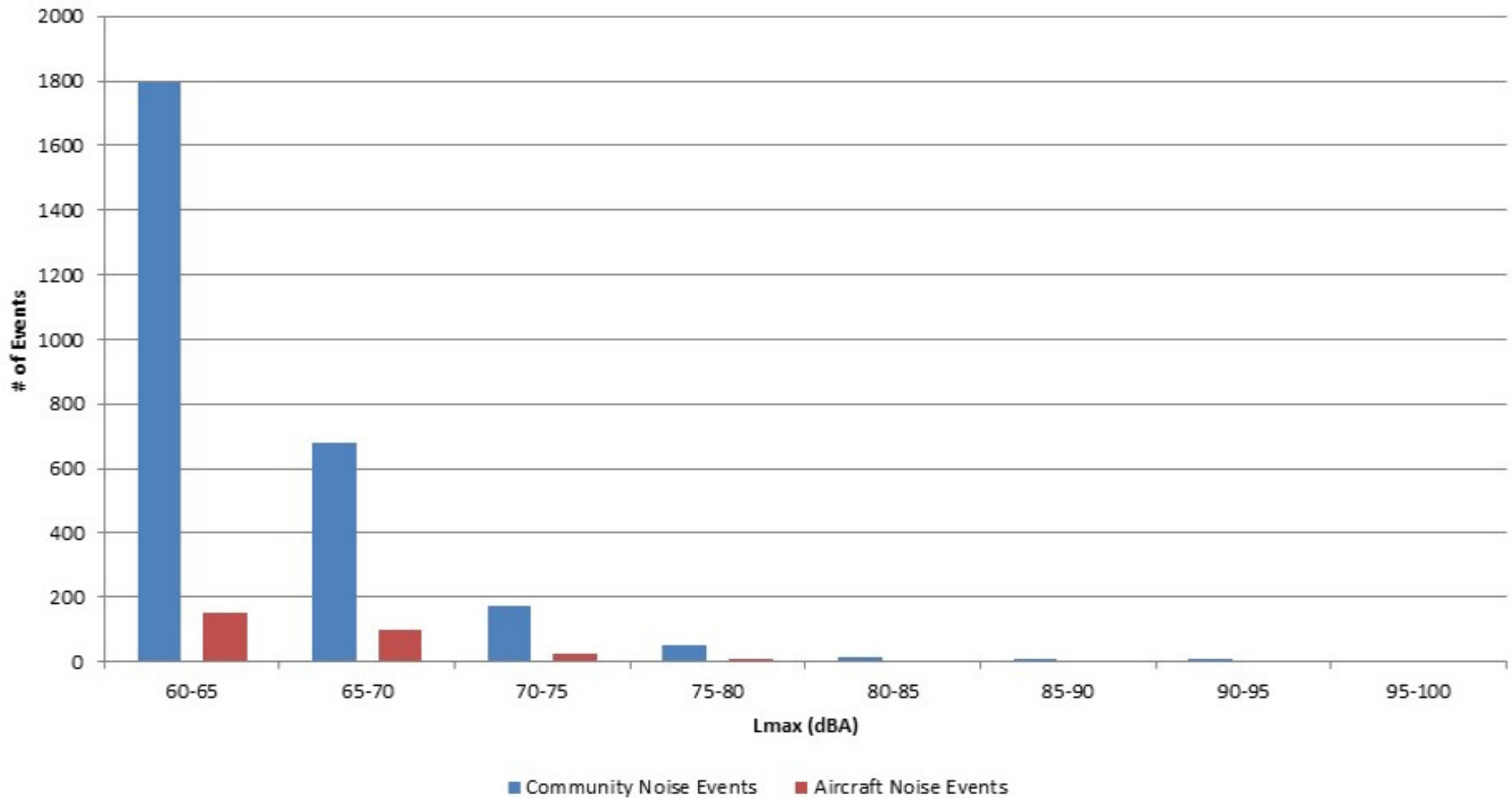
Noise Events at Montgomery



Metric	July 11 – Aug. 10	Aug. 11 – Sept. 10	Sept. 11 – Sept. 20
Average daily community noise events	5 events	4 events	11 events
Average daily aircraft over noise monitor	45	47	48
Average daily aircraft noise events	0 events	0 events	0 events
Average daily aircraft noise events at night (between 11pm-7am)	0 events	0 events	0 events
Average altitude of aircraft during noise event	2864 ft. AGL		

A “noise event” is any noise with a sound level of at least 70 dBA.

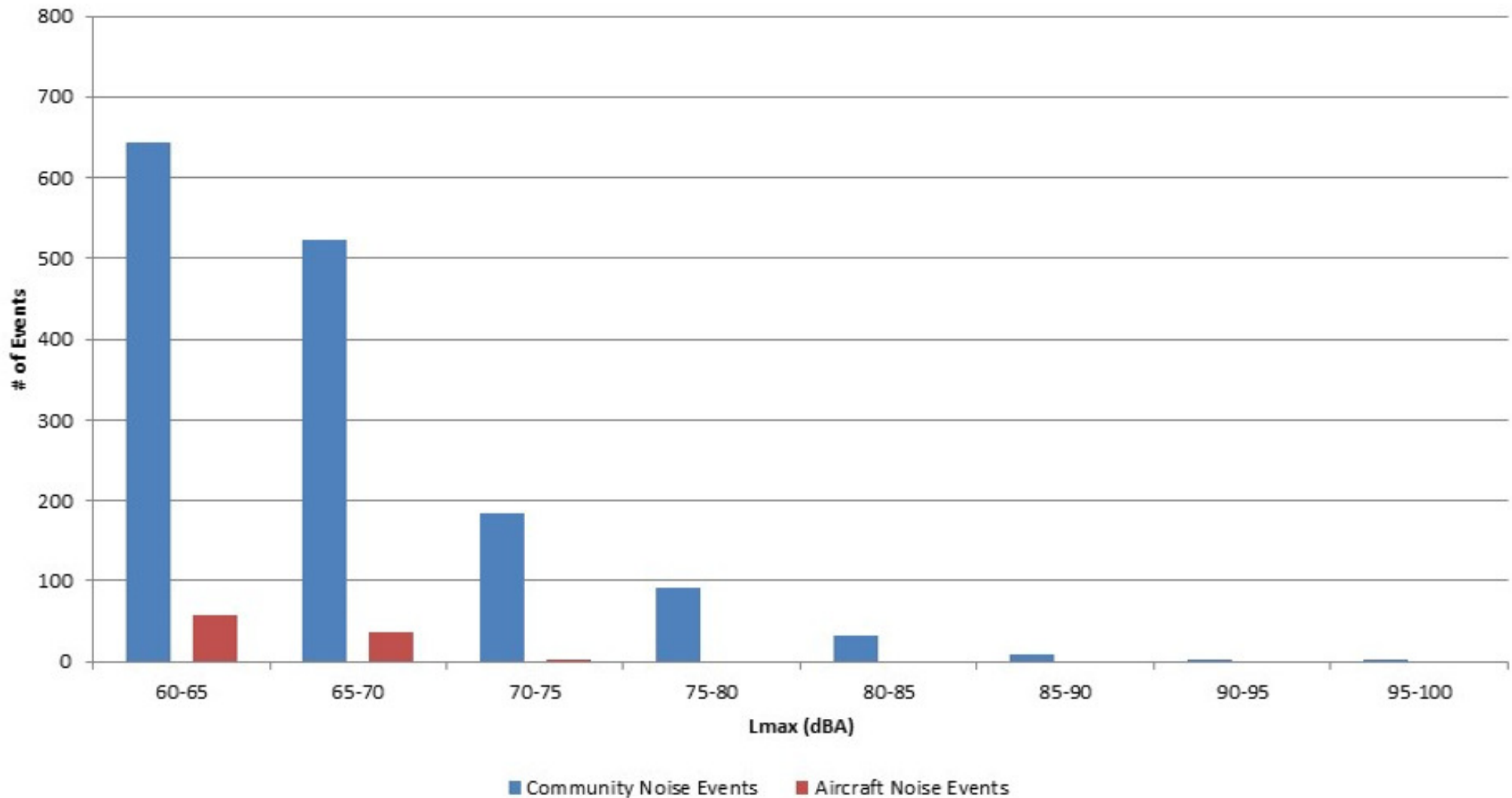
Noise Events at Glenbrook



Metric	July 19 – Aug. 18	Aug. 19 – Sept. 18	Sept. 19 – Sept. 20
Average daily community noise events	5 events	3 events	5 events
Average daily aircraft over noise monitor	49	51	59
Average daily aircraft noise events	1 events	0 events	0 events
Average daily aircraft noise events at night (between 11pm-7am)	0 events	0 events	0 events
Average altitude of aircraft during noise event	3216 ft. AGL		

A “noise event” is any noise with a sound level of at least 70 dBA.

Noise Events at Shore Drive

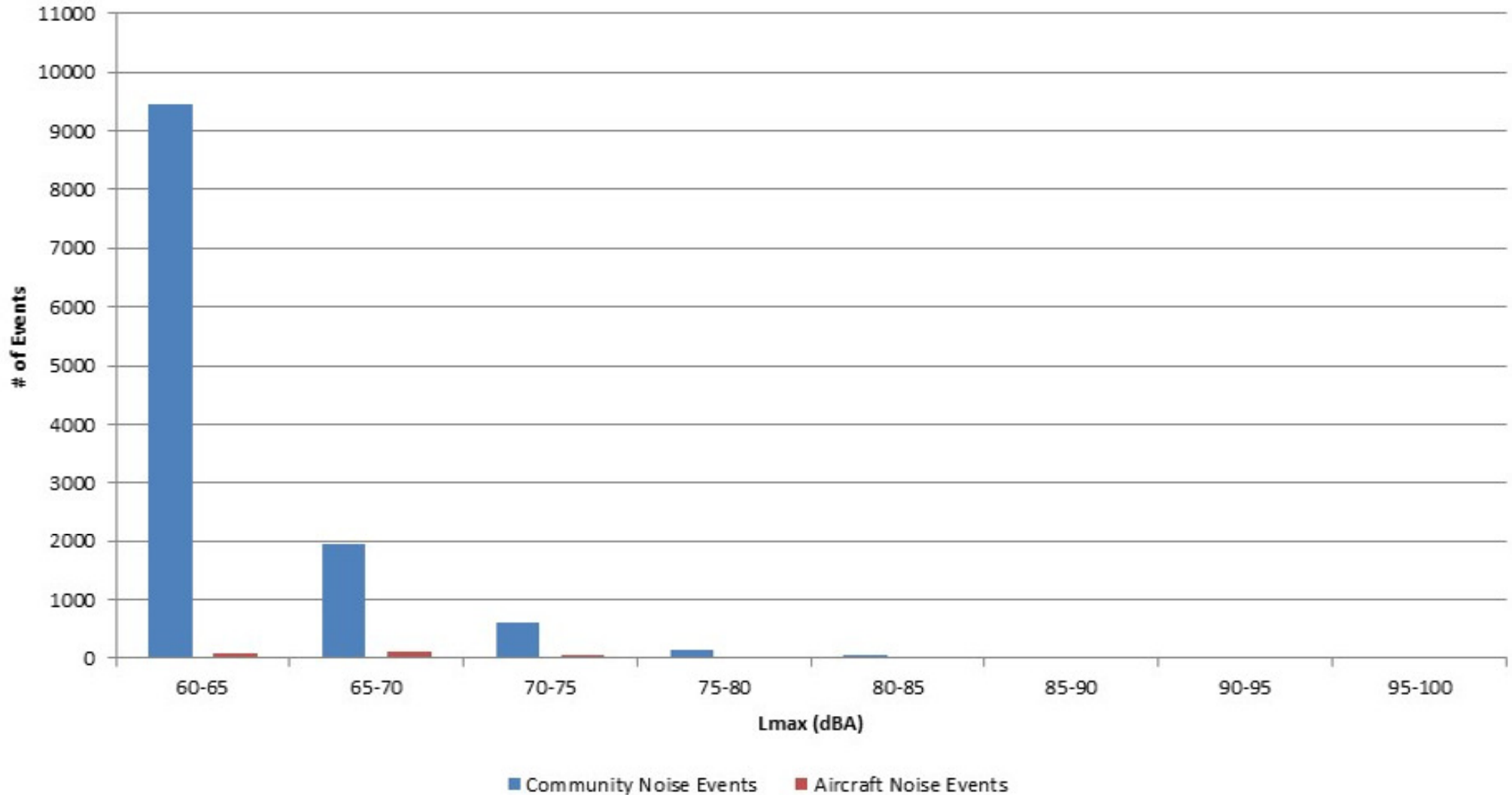


Metric	July 8 – Aug. 7	Aug. 8 – Sept. 7**	Sept. 8 – Sept. 19
Average daily community noise events	7 events	2 events	3 events
Average daily aircraft over noise monitor	22	22	20
Average daily aircraft noise events	0 events	0 events	0 events
Average daily aircraft noise events at night (between 11pm-7am)	0 events	0 events	0 events
Average altitude of aircraft during noise event	3181 ft. AGL		

A “noise event” is any noise with a sound level of at least 70 dBA.

**August 19 data was lost due to an equipment error; this date has been excluded from the averages.

Noise Events at Chestermere



Metric	July 8 – July 29 **	Aug. 14 – Sept. 7 **	Sept. 8 – Sept. 20
Average daily community noise events	14 events	16 events	11 events
Average daily aircraft over noise monitor	15	21	14
Average daily aircraft noise events	0 events	2 events	1 events
Average daily aircraft noise events at night (between 11pm-7am)	0 events	1 events	0 events
Average altitude of aircraft during noise event	2099 ft. AGL		

A “noise event” is any noise with a sound level of at least 70 dBA.

**Data from July 30 – August 13 was lost due to an equipment error; these dates have been excluded from the averages

Noise Events over 60 dBA

Events by Aircraft Type	Chestermere (60 days)	Shore Drive (73 days)	Montgomery (72 days)	Hawkwood (75 days)	Glenbrook (64 days)
Community	12203	1487	4612	4983	2712
Fixed Wing Aircraft	254	94	149	98	258
Helicopters	7	4	30	6	20
Total	12464	1585	4791	5087	2990

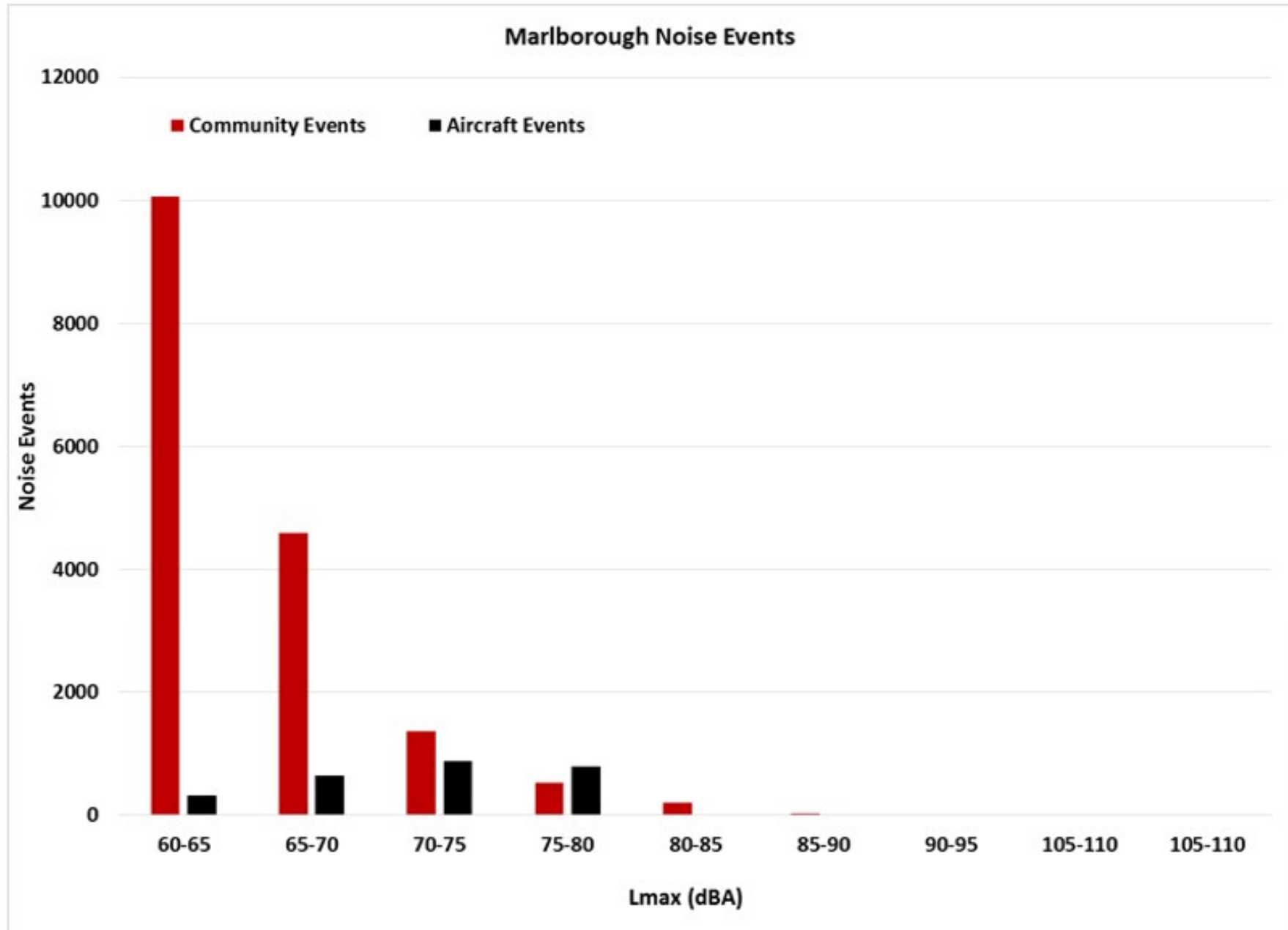
Aircraft Events by Operation	Chestermere (60 days)	Shore Drive (73 days)	Montgomery (72 days)	Hawkwood (75 days)	Glenbrook (64 days)
Arrival	238	91	126	90	250
Departure	1	0	11	4	4
Helicopters	7	4	30	6	20
Overflights	15	3	12	4	4
Total	261	98	179	104	278

- The majority of aircraft noise events recorded were from fixed-wing aircraft arrivals.
- The maximum sound levels recorded during aircraft noise events were quieter than the maximum sound levels recorded during community noise events.

17L Departures Study



Analysis – Marlborough (Jun-Sep)



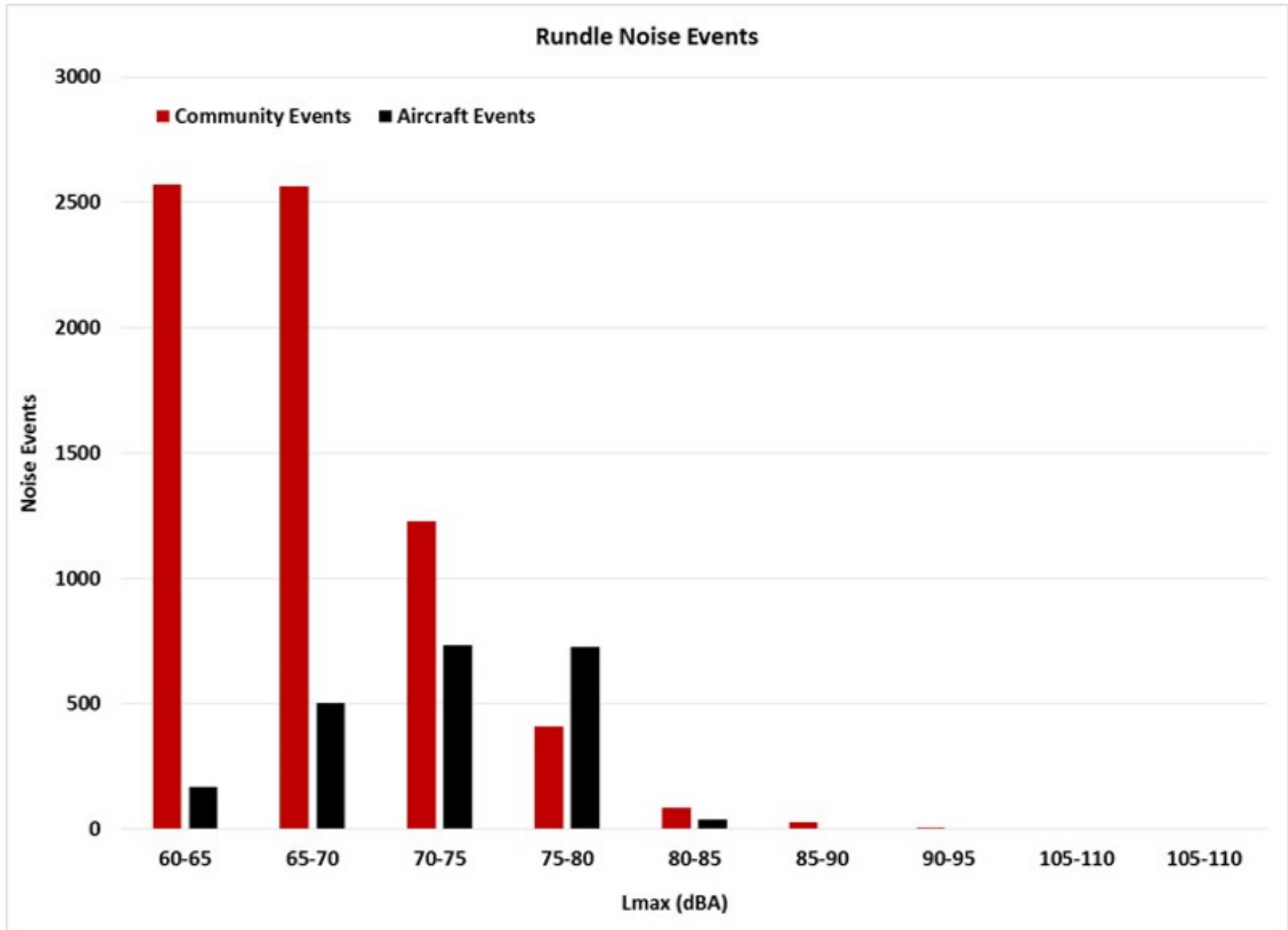
Summary – Marlborough



Metric	June	July	August	September
Average daily community noise events	15	12	34	10
Average daily aircraft over noise monitor	46	26	25	23
Average daily aircraft noise events	24	13	10	9
Average daily aircraft noise events at night (between 11pm-7am)	1	1	0	0
Average altitude of aircraft during noise event	2503 ft.	2280 ft.	2226 ft.	2354 ft.

A "noise event" is any noise with a sound level of at least 70 dBA.

Analysis – Rundle (Jun-Sep)



Summary – Rundle



Metric	June	July	August	September
Average daily community noise events	29	10	13	6
Average daily aircraft over noise monitor	41	18	17	16
Average daily aircraft noise events	25	11	5	9
Average daily aircraft noise events at night (between 11pm-7am)	2	1	0	1
Average altitude of aircraft during noise event	2058 ft.	1833 ft.	1753 ft.	1869 ft.

A "noise event" is any noise with a sound level of at least 70 dBA.

Operations Summary – June to Sept



Noise Events over 60 dBA

Events by Aircraft Type	Marlborough	Rundle
Community	16,784	6,895
Jet Aircraft	1,909	1,540
Propeller Aircraft	699	569
Helicopters	24	51
Totals	19,416	9,055

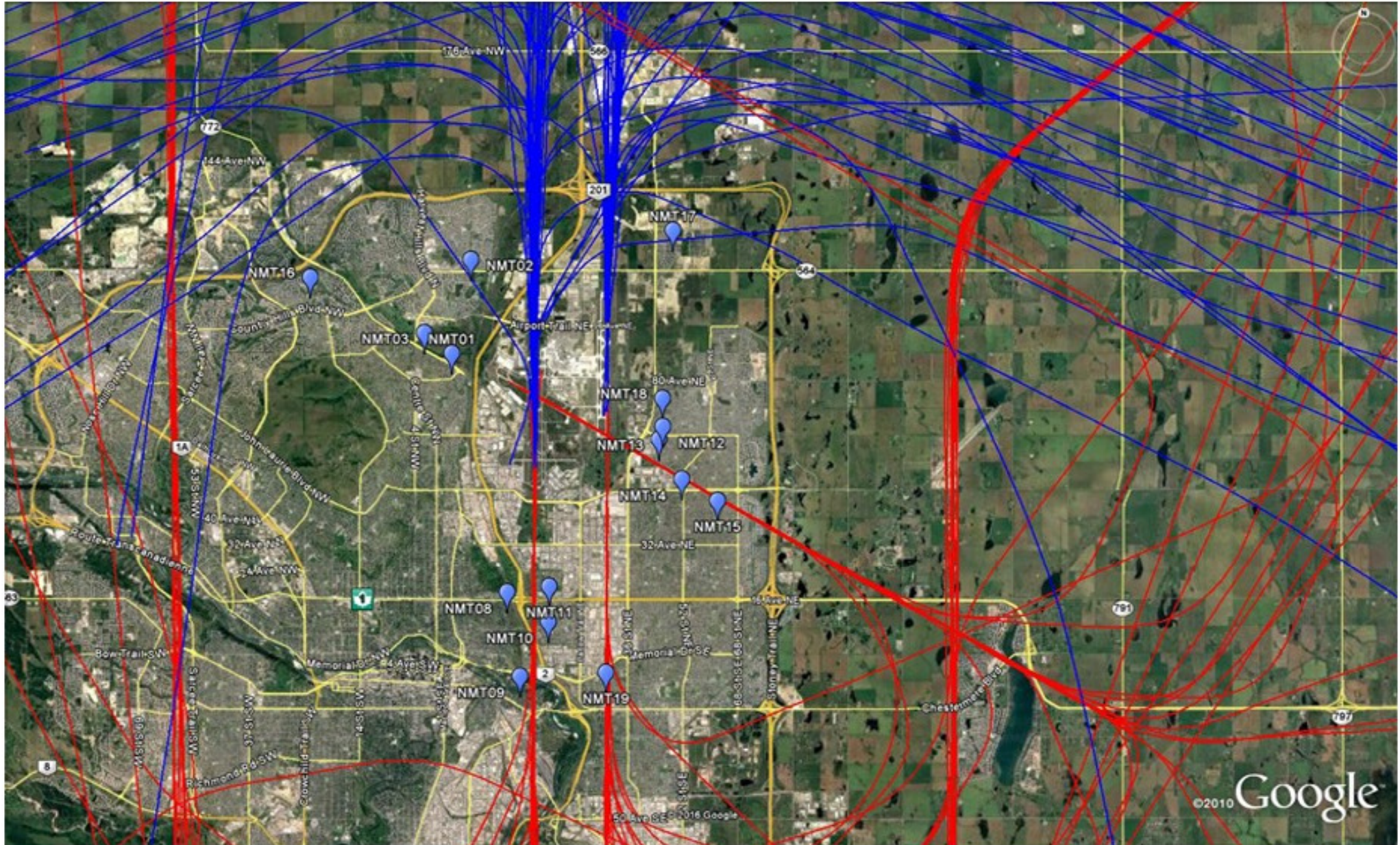
Events by Aircraft Operation	Marlborough	Rundle
Arrival	181	21
Departure	2,420	2,081
Helicopters	24	51
Unknown	7	7
Totals	2,632	2,160

Noise Monitoring - Next Steps

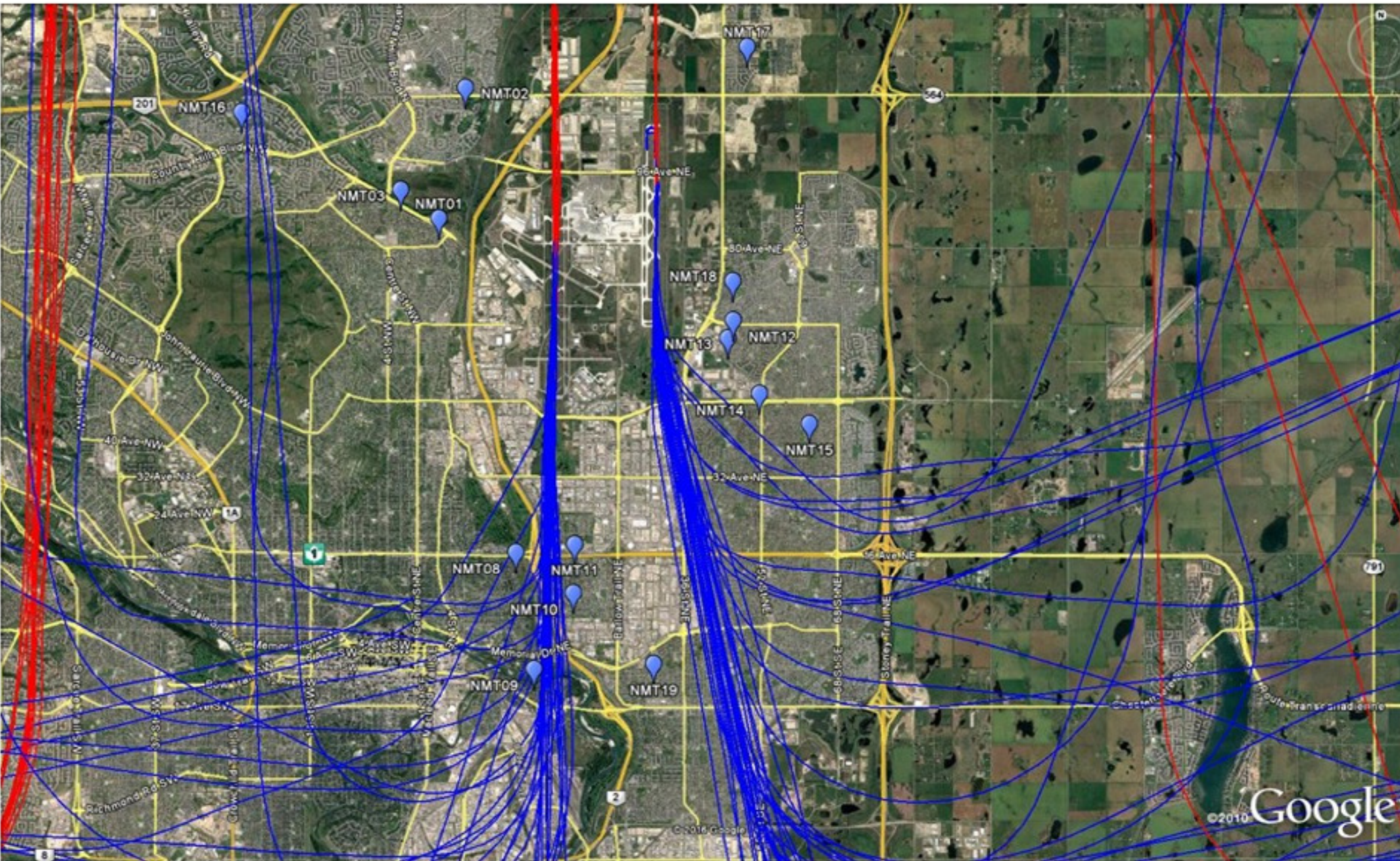


1. Noise Monitor relocation
2. Portable Noise Monitors
3. Virtual Noise Monitors

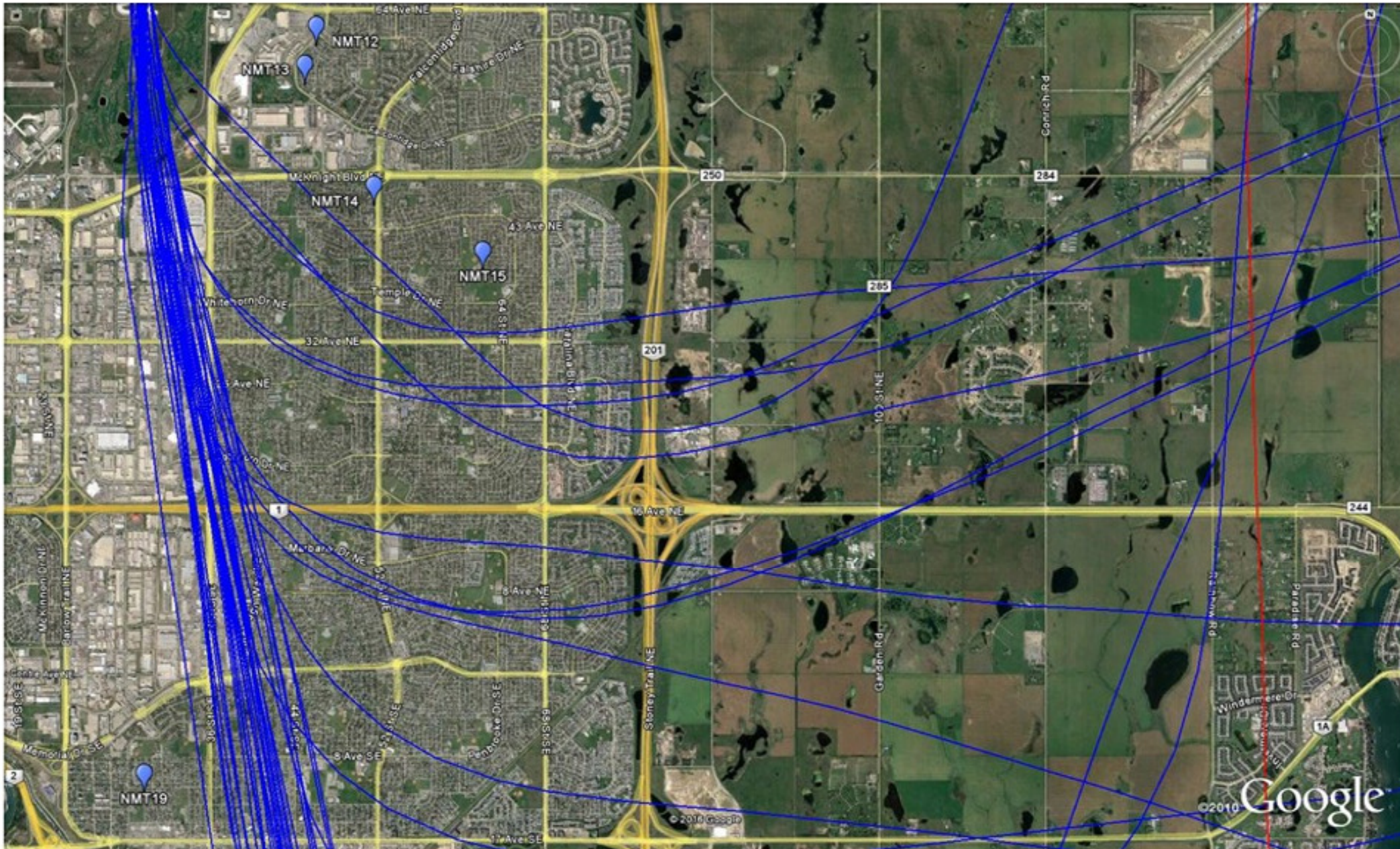
Snapshot - North Operations



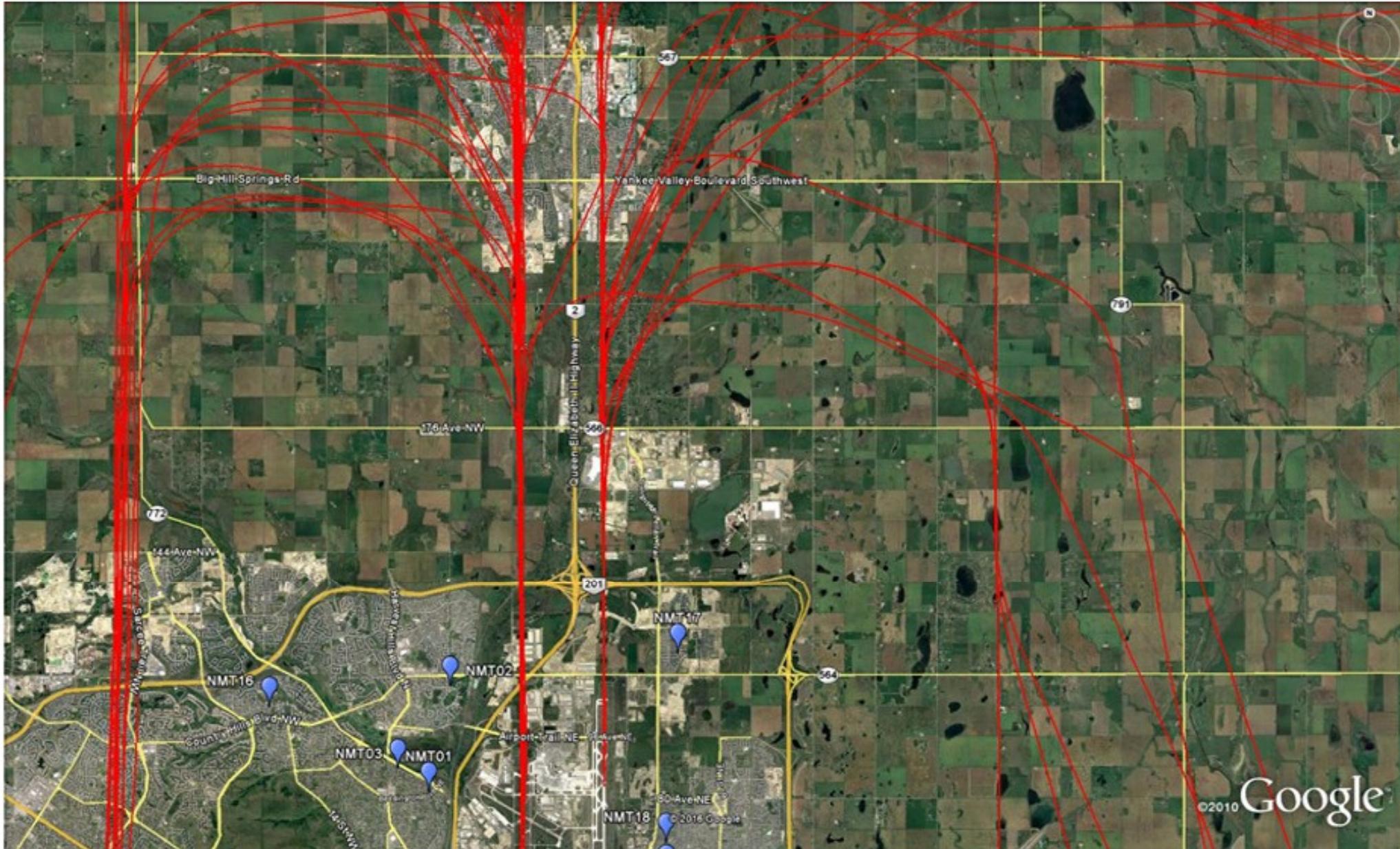
Snapshot - South Operations



Snapshot - 17L Departures



Snapshot - 17L & 17R Arrivals



NMT Relocation - Summary

New permanent NMT will be installed in the areas with insufficient coverage. As NMT deployment is a complicated and lengthy process, installation will be phased. In summary this will entail:

- A new permanent NMT installed under the flight path for 17L departures.
- A new permanent NMT installed in Airdrie.



Portable & Virtual NMT

- We will develop and implement a program of roving mobile monitoring in 2017. A mobile NMT will be deployed on monthly basis in different communities that do not have permanent noise monitoring coverage.
- We will use virtual NMT to obtain 24 hour aircraft noise measurements.



**COMMUNITY UPDATES
QUARTERLY REPORTS**

Quarterly Reports



COMMUNITY UPDATE:
QUARTER 3 - July to September 2016



YYC CALGARY INTERNATIONAL AIRPORT

THE CALGARY AIRPORT AUTHORITY
Community Engagement
2000 Airport Road NE, Calgary, AB, T2E 6W5
community@yyc.com

CONNECT WITH US
 FlyYYC  FlyYYC  Fly_YYC

YYC.COM

Data: Operations



This report summarizes the data for Quarter 3 (Q3) of 2016.



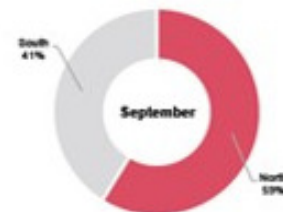
2016 year to date operations
170,708

July operations
20,254

August operations
20,580

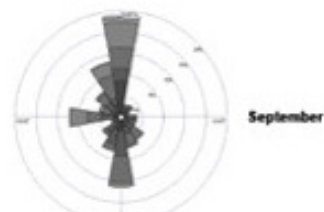
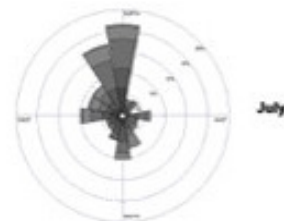
September operations
18,905

AIRCRAFT DIRECTION



63% of Q3 aircraft traffic had a north flight direction (runways 29, 35L & 35R)

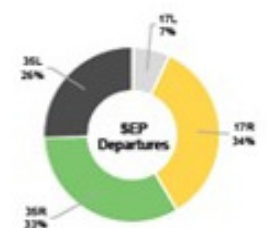
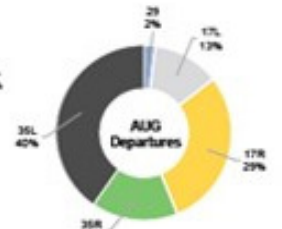
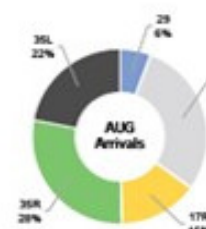
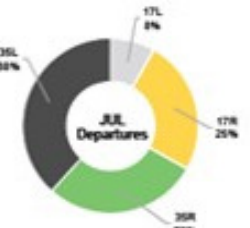
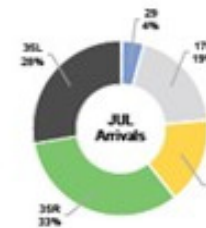
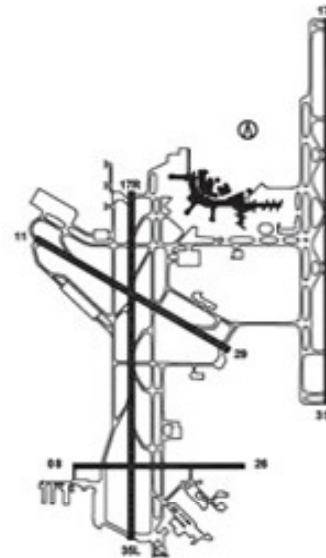
WIND DIRECTION



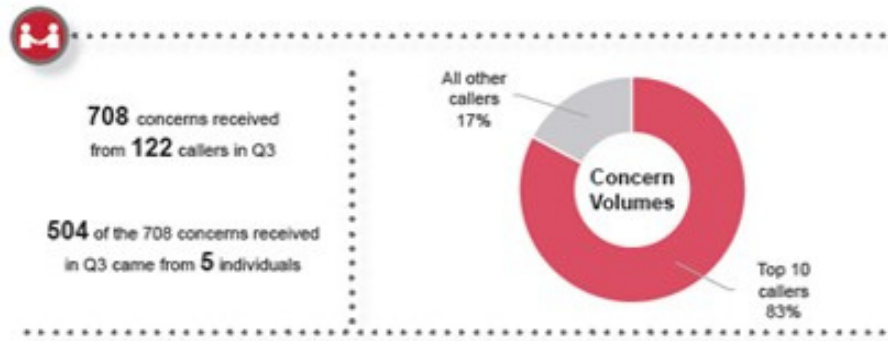
WIND SPEED (km/h)

- 14-22
- 11-21
- 11-17
- 1-11
- 4-7
- 1-4
- Calm 1.1%

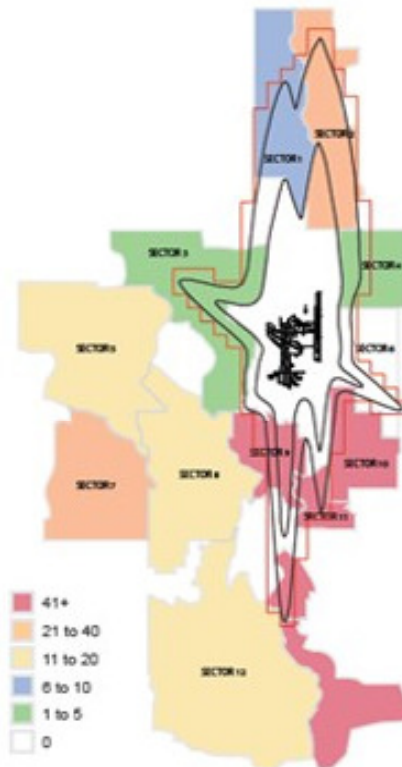
RUNWAY UTILIZATION



Data: Concerns



CONCERN VOLUME BY AREA



SECTOR	CONCERNS	CALLERS
1	7	5
2	23	11
3	4	4
4	4	4
5	11	4
6	0	0
7	31	9
8	19	5
9	42	18
10	434	28
11	94	15
12	11	9
Rural	26	8
Other	2	2

Sectors are based on their most common type of concerns:

- 35L departures & 17R arrivals
- 35R departures & 17L arrivals
- 29 departures
- 35R departures
- Downwind leg traffic
- 29 arrivals & run-ups
- Downwind leg traffic & 17R departures
- 17R departures
- 17R departures & 35L arrivals
- 17L departures
- 35R arrivals
- 35R arrivals & overflights

2017 MEETING SCHEDULE

Proposed Schedule



- Wednesday April 5, 2017
- Wednesday July 12, 2017
- Wednesday October 18, 2017
- Wednesday January 10, 2018

QUESTIONS & ANSWERS