

Auckland Airport Second Runway Assessment of Noise Effects

By Laura McNeill





Designated Runway - 2150m long
Most jets on existing runway
Older noisier aircraft



Proposed Runway - 2983m long
Most jets on northern runway
Modern quieter aircraft

Community Response to Noise

Influenced by

Nature of Noise Source

(loudness, duration, frequency, time of day, pitch, change etc.)

Psychological, social
and attitudinal factors

Assessment Methods

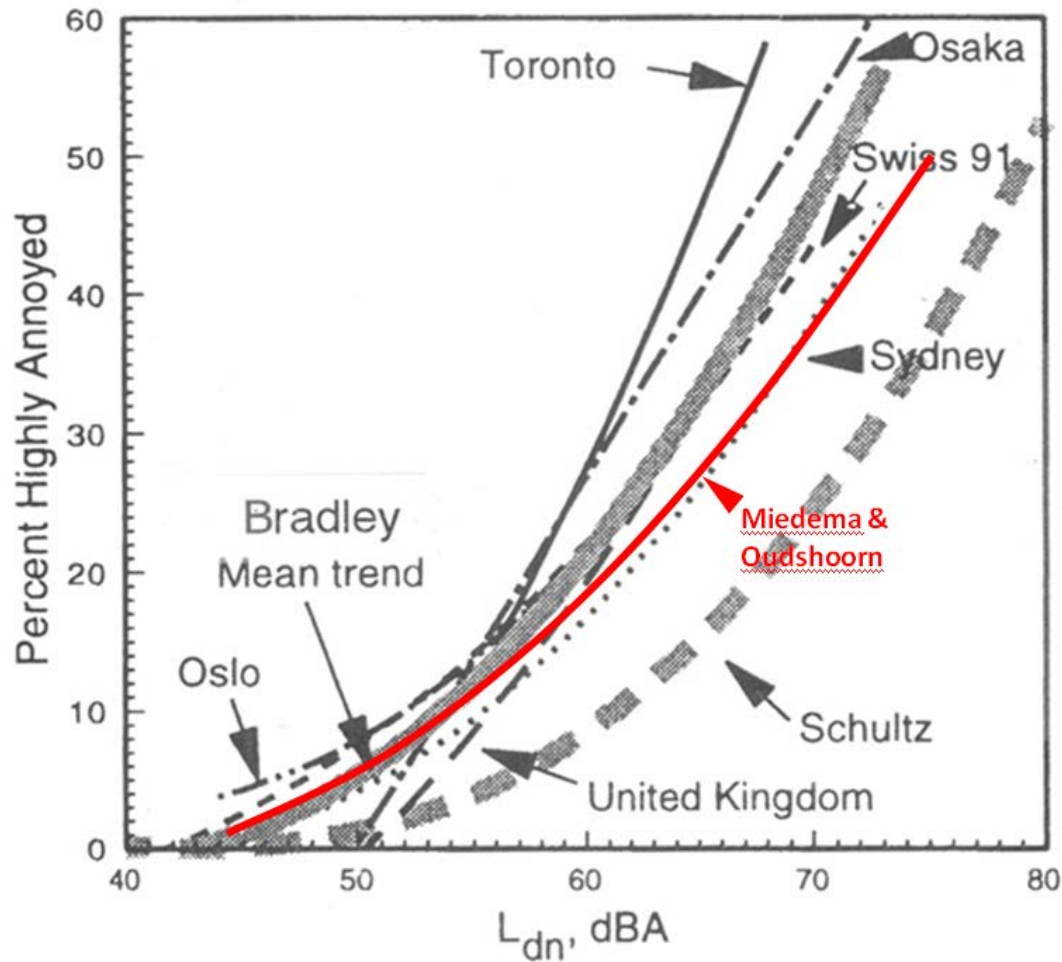
Number of People Highly Annoyed

Difference in Noise Level

Number of Aircraft Overflights

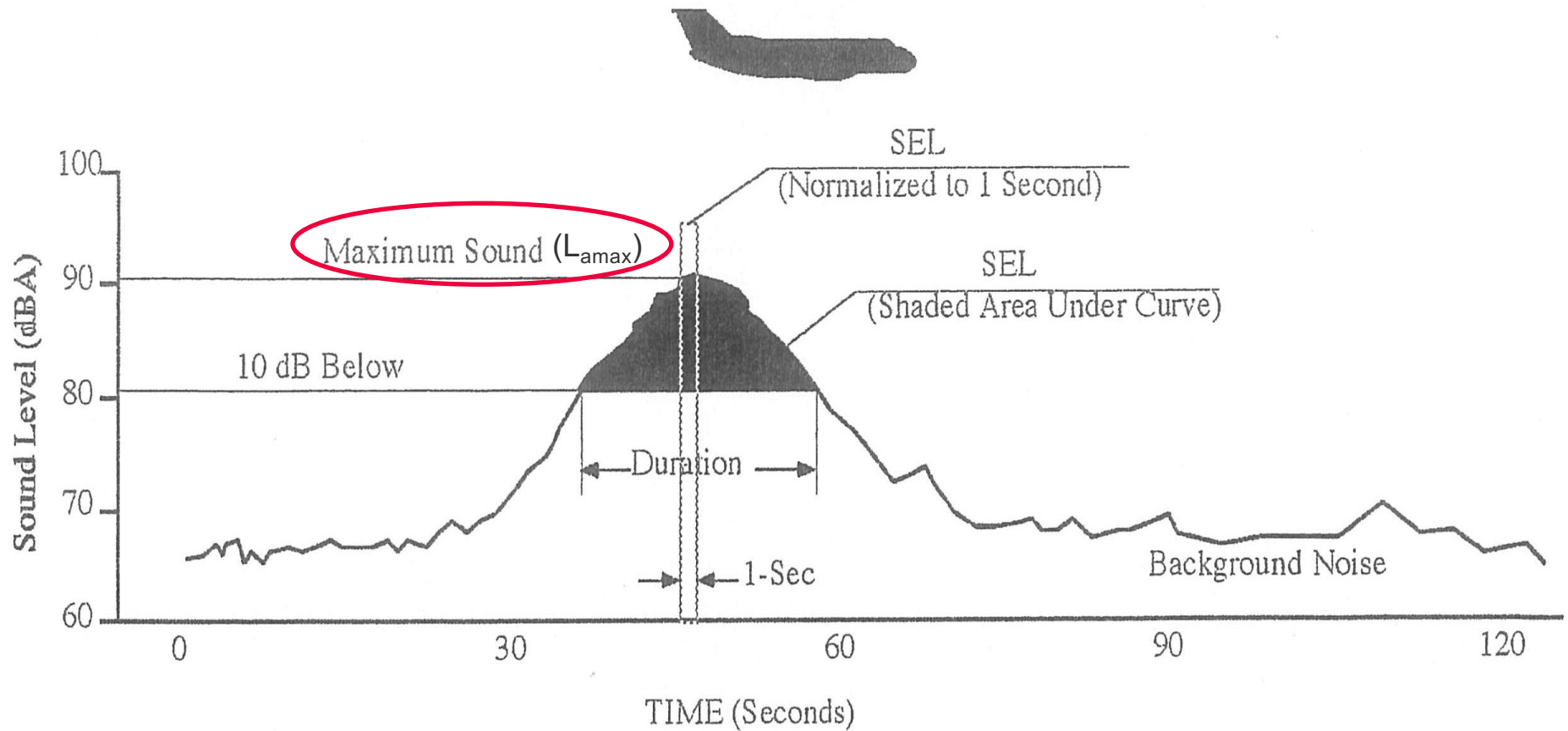
Method 1

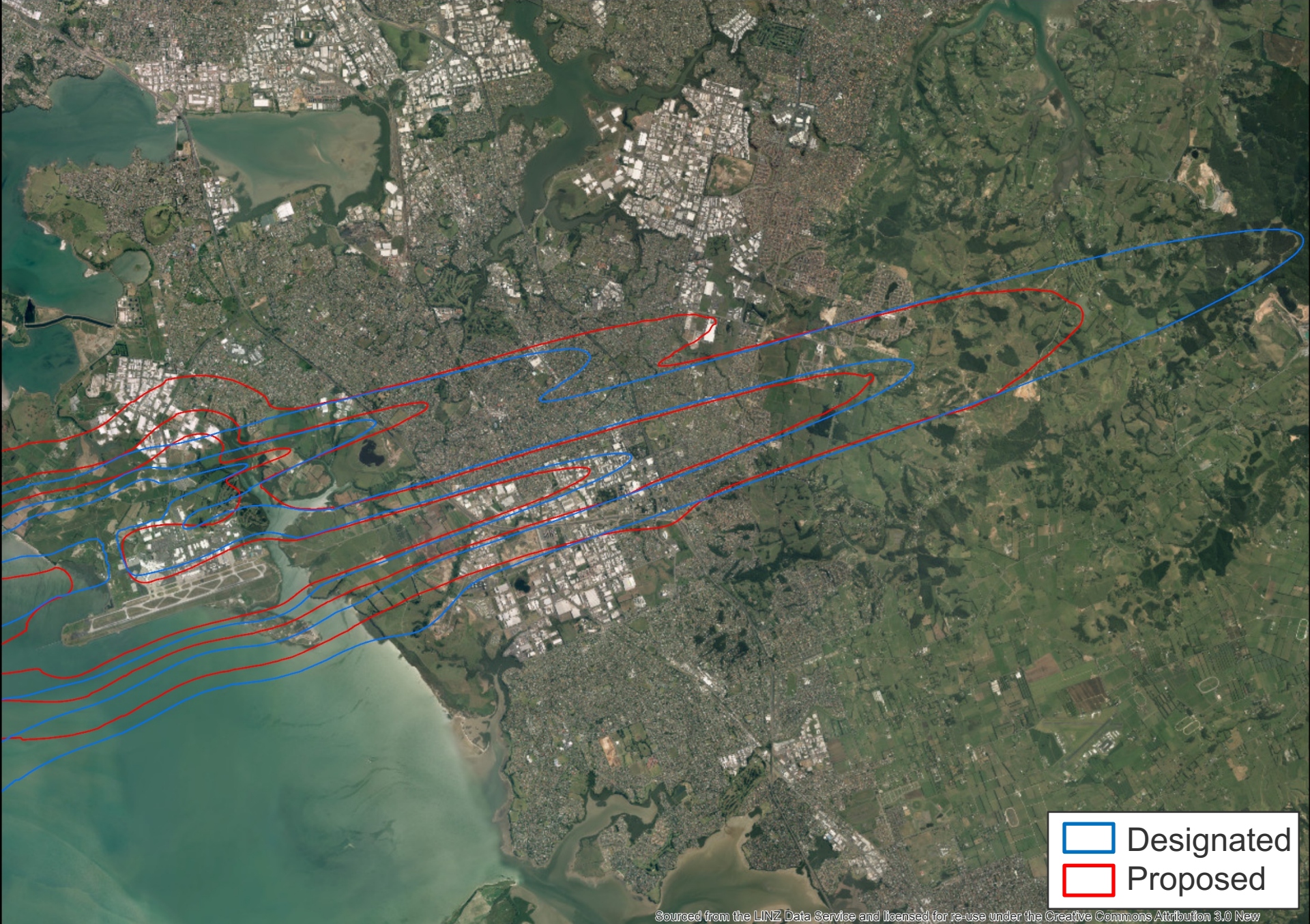
Number of People Highly Annoyed



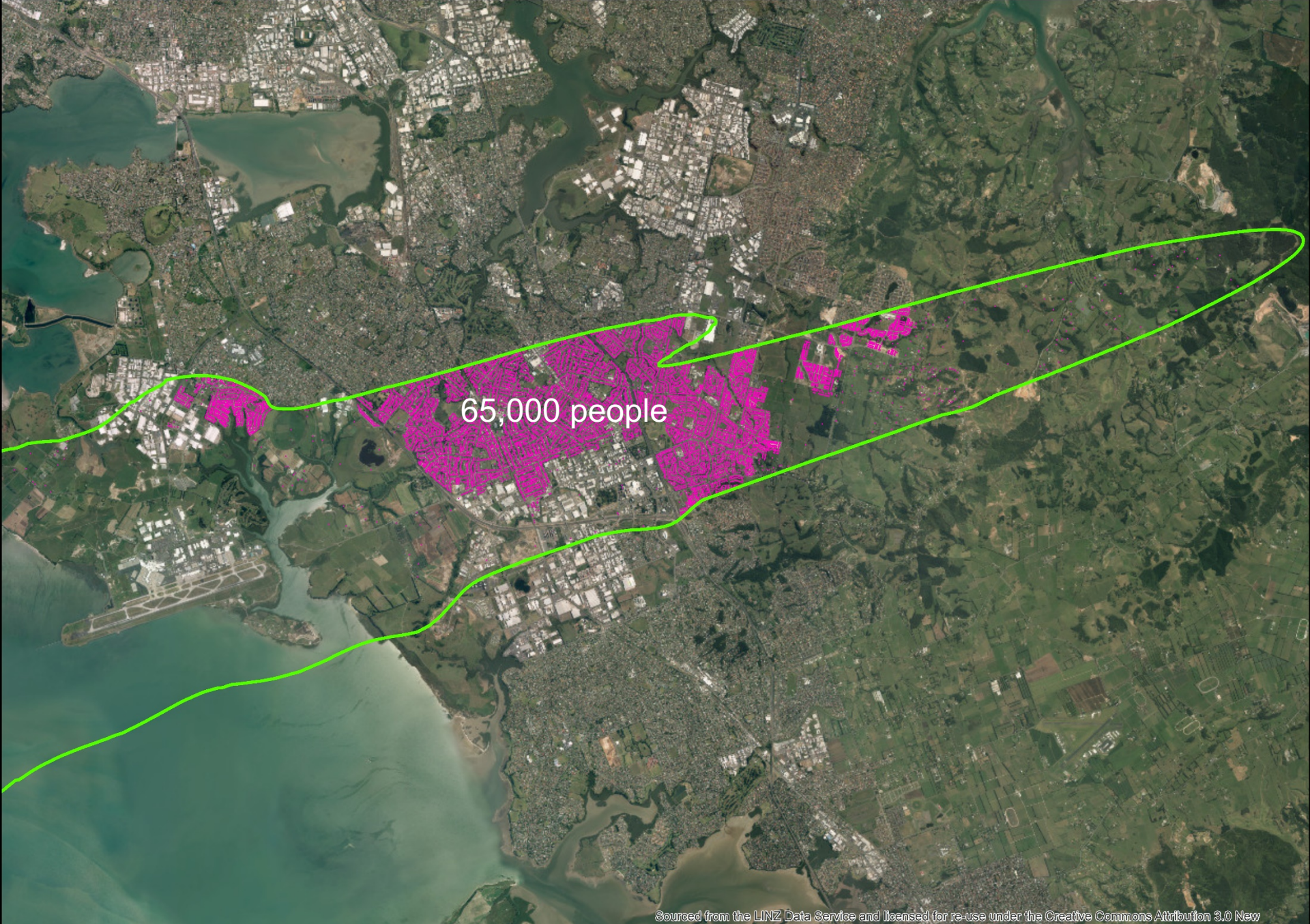
Method 3

Number of Aircraft Overflights



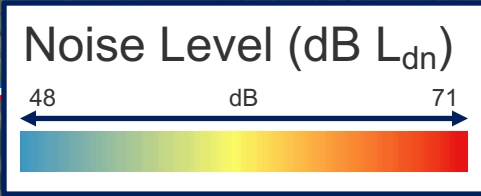
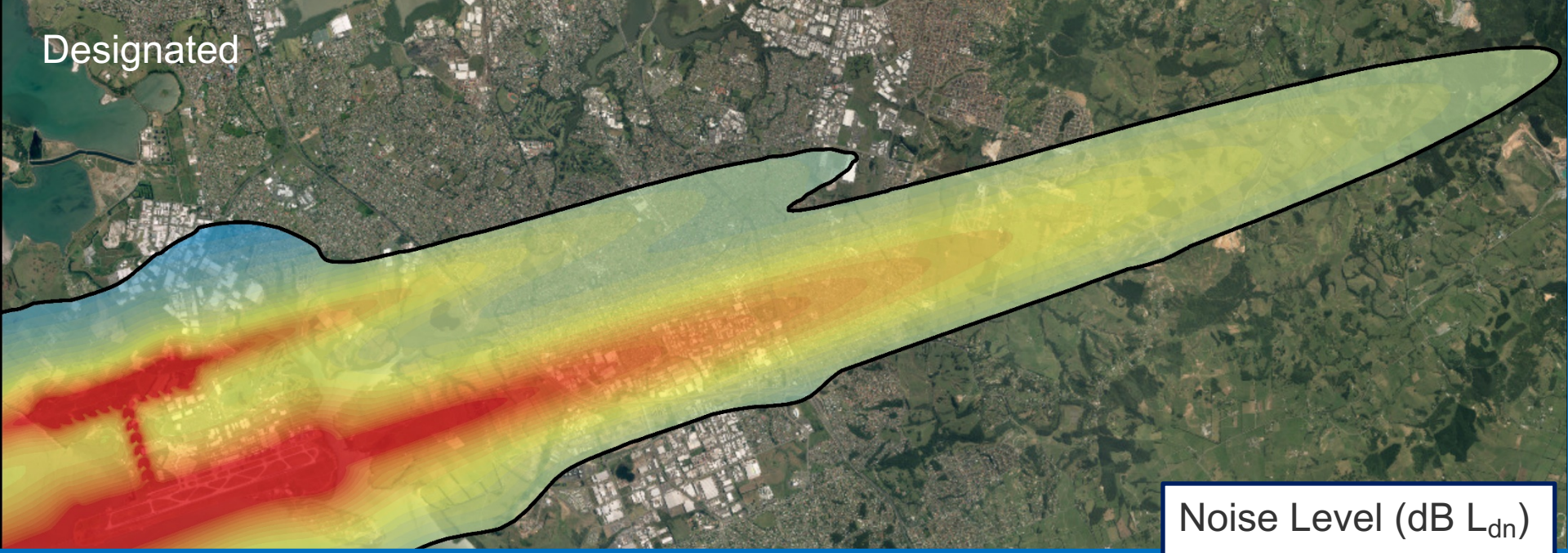


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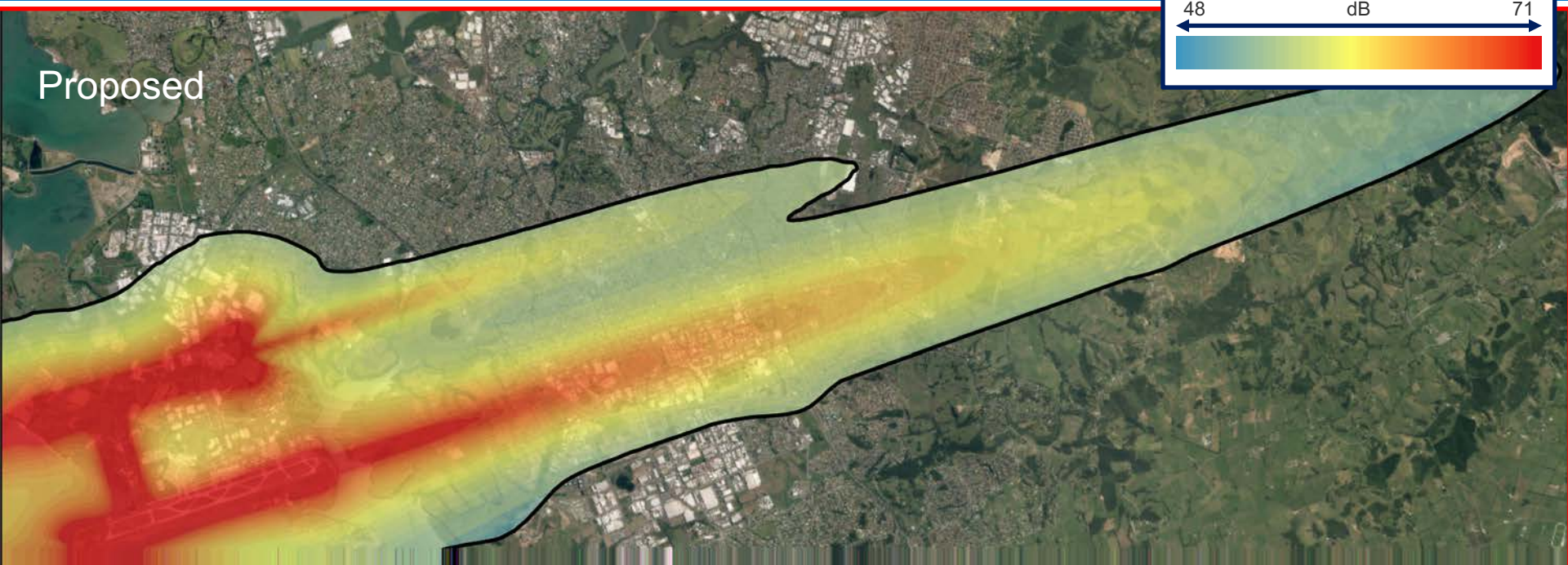


65,000 people

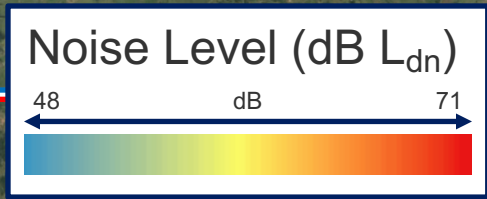
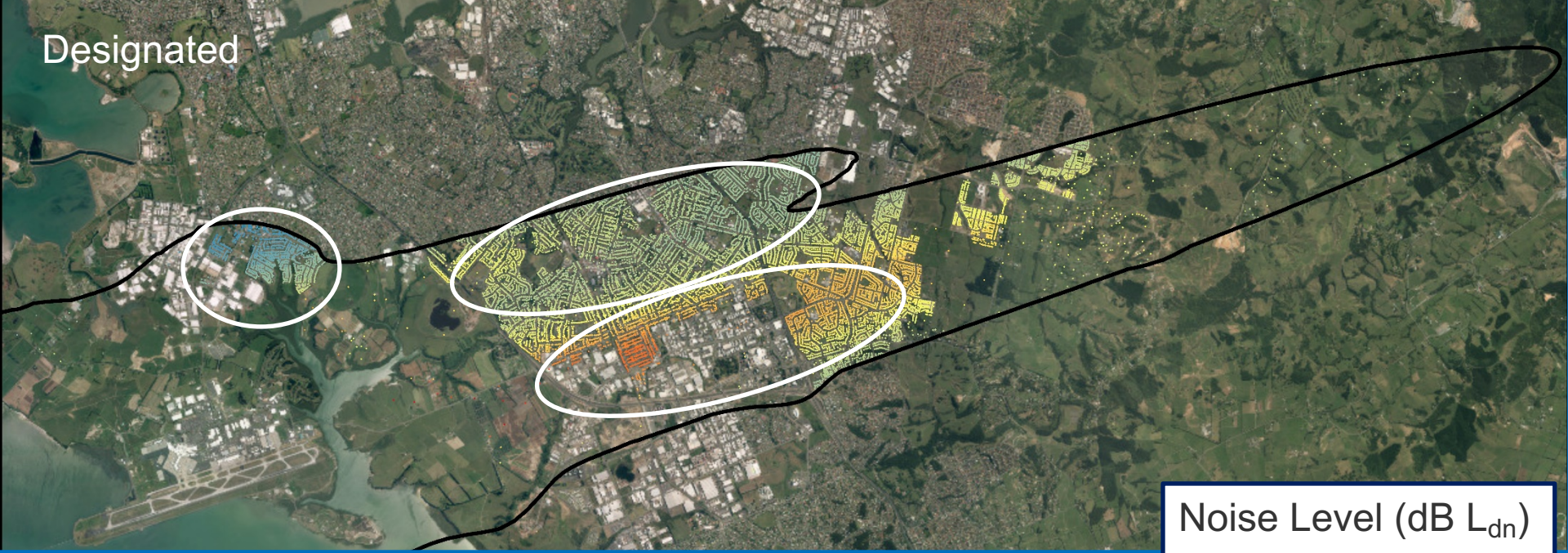
Designated



Proposed

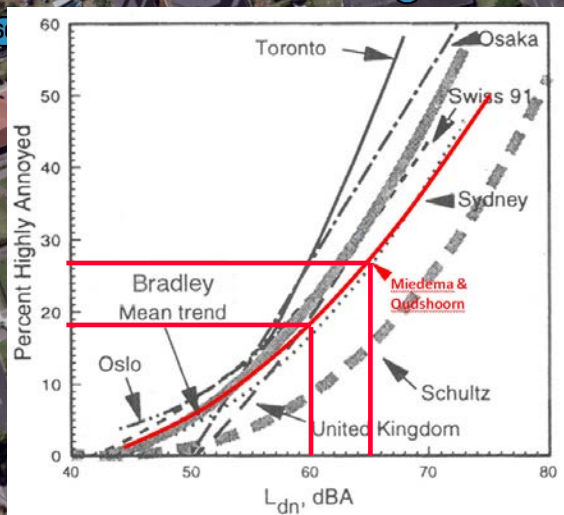


Designated



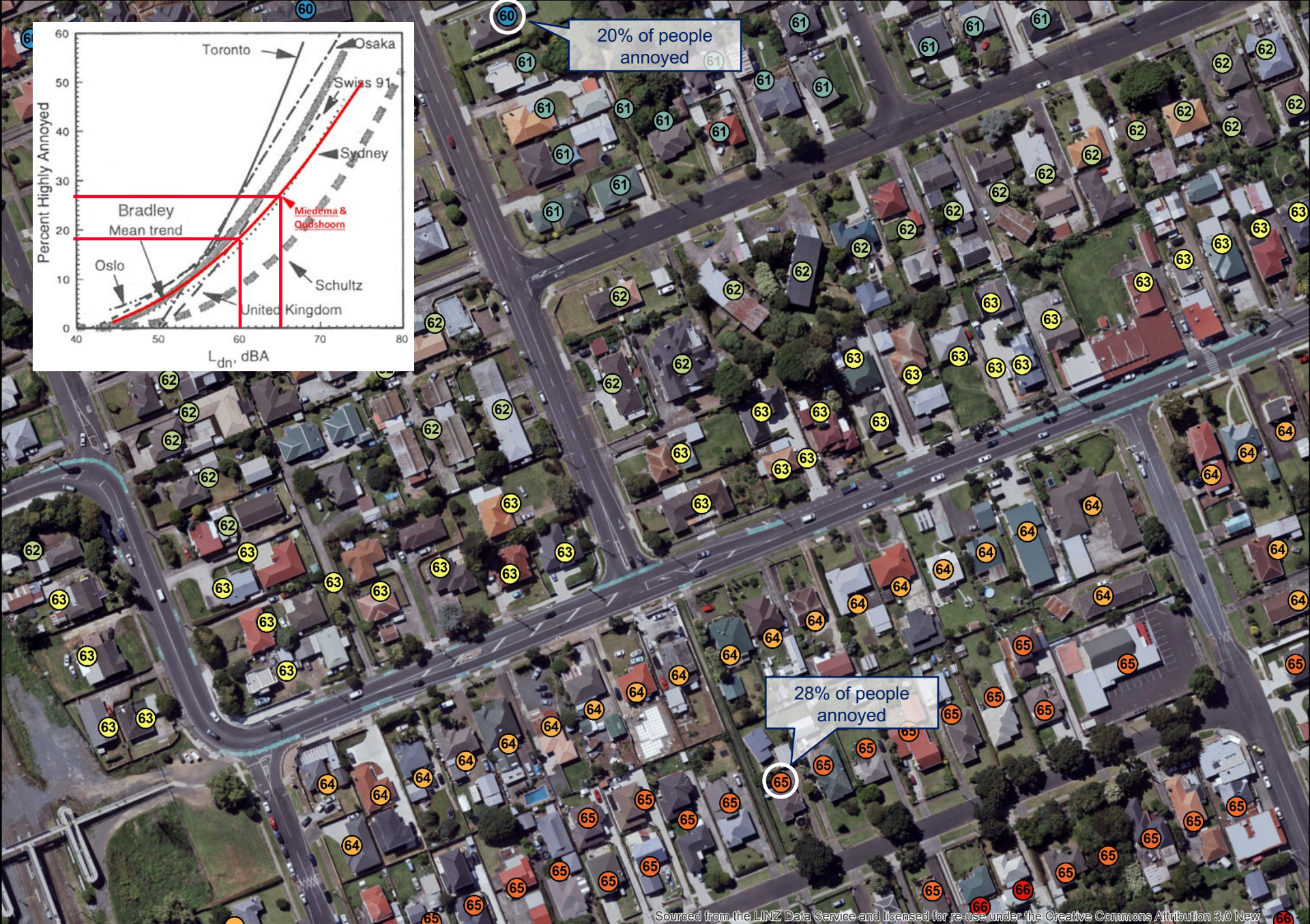
Proposed





20% of people annoyed

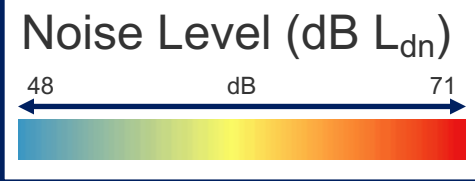
28% of people annoyed



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Designated

10,065 people
Highly Annoyed



Proposed

10,318 people
Highly Annoyed

Method 2

Difference in Noise Level

1-2 dB

Imperceptible Difference

3-4 dB

Just Perceptible Difference

5-7 dB

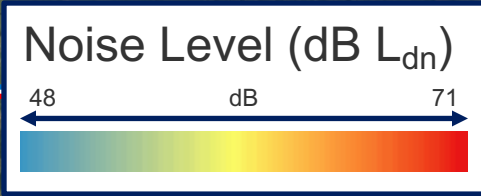
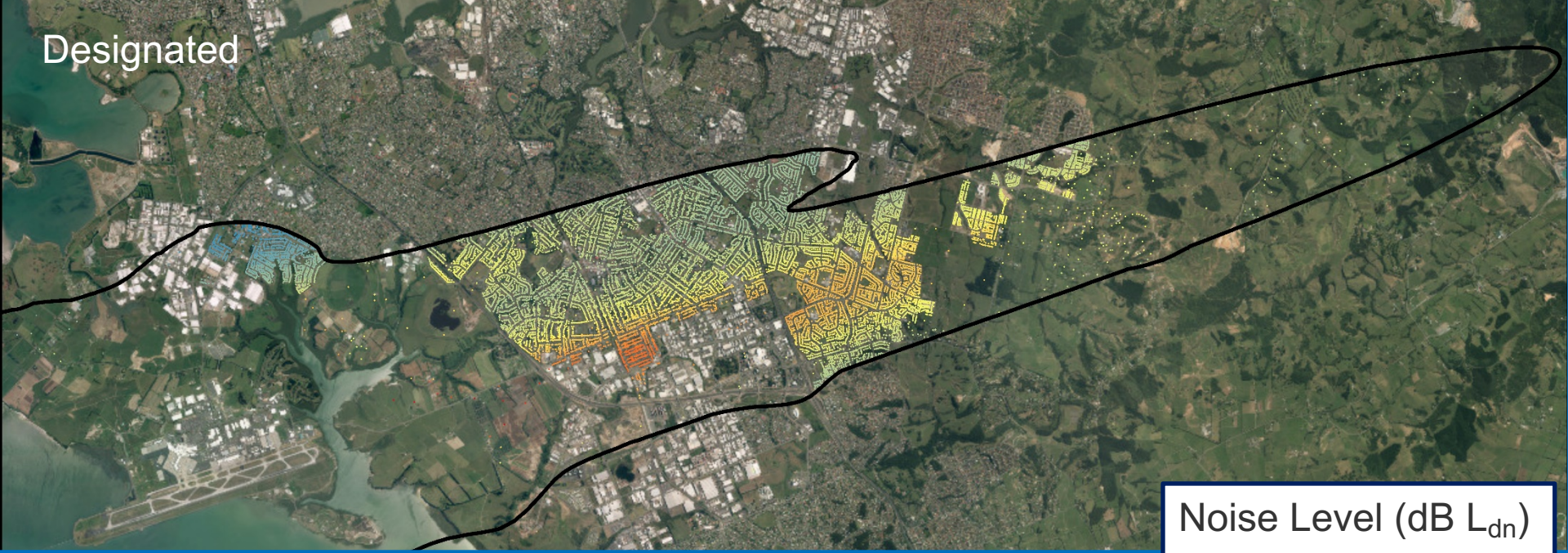
Noticeable Difference

8+ dB

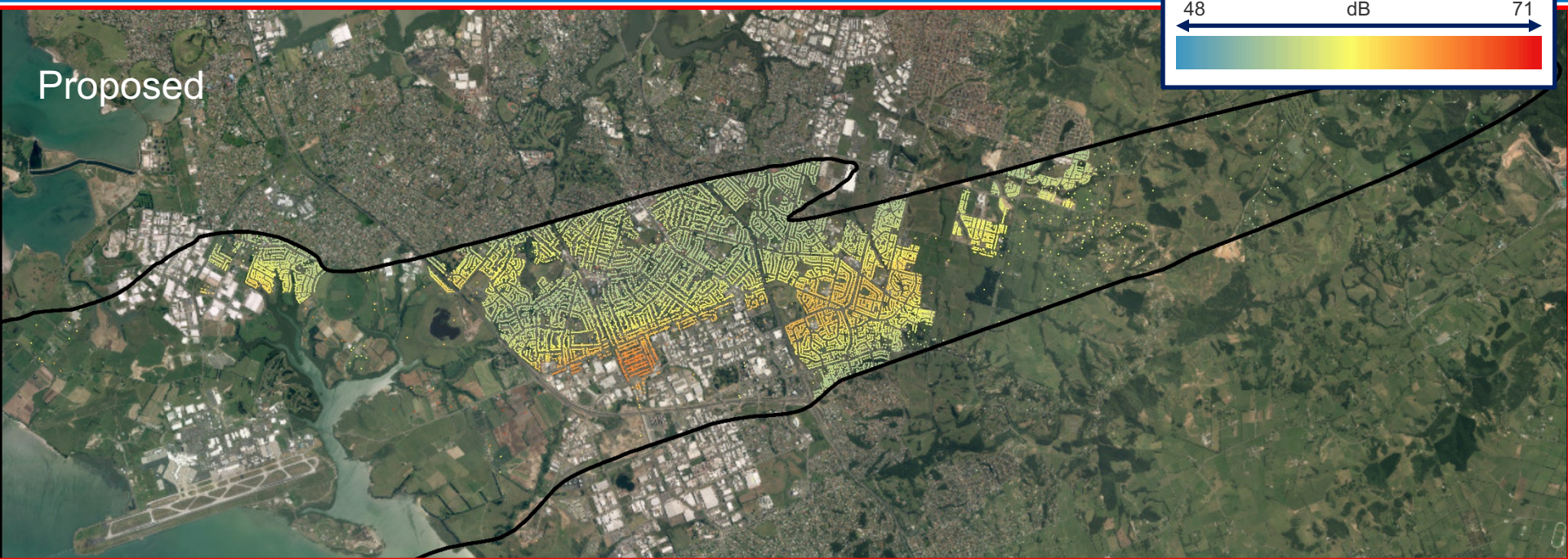
Significant Difference

(doubling @ 10 dB)

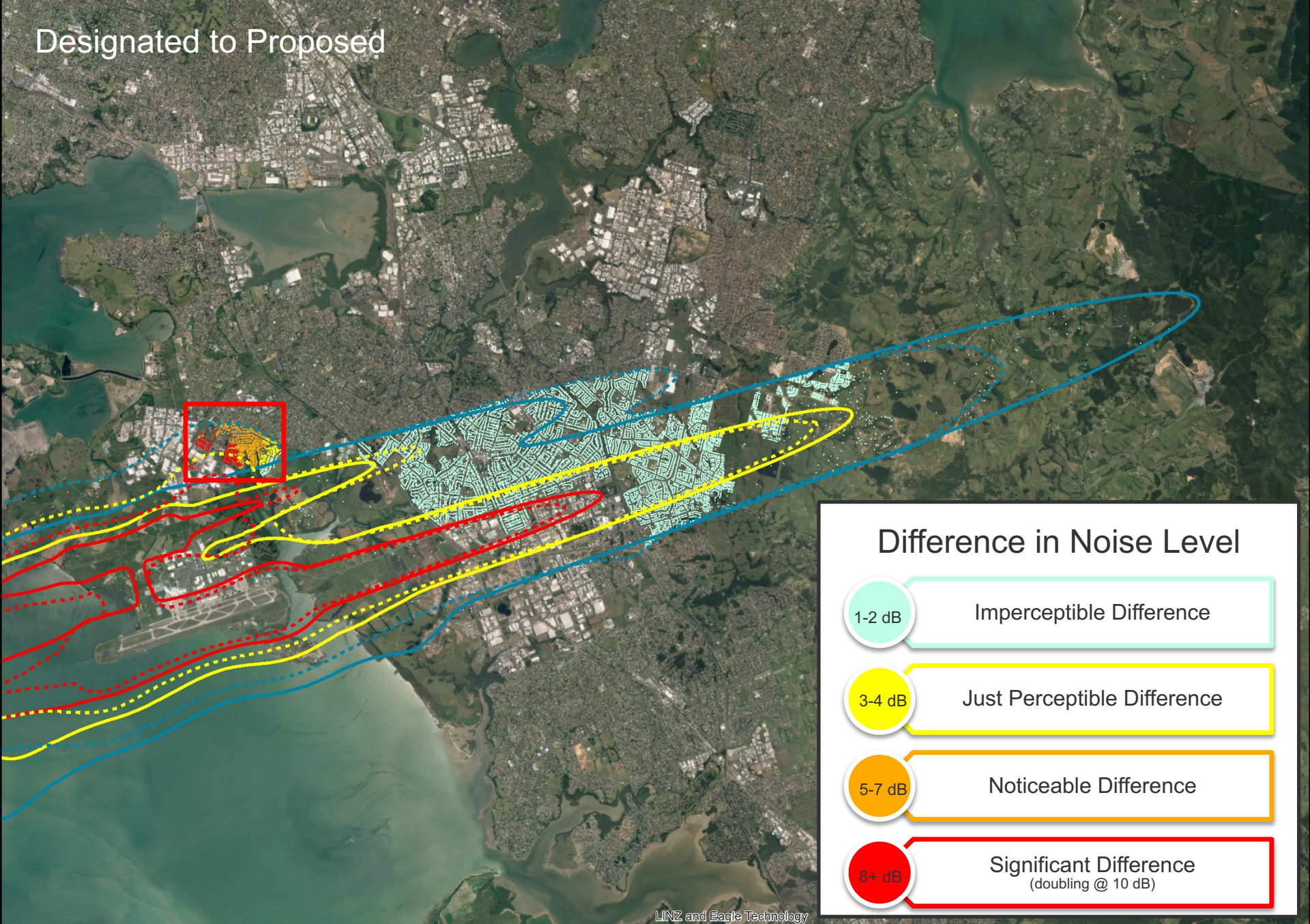
Designated



Proposed

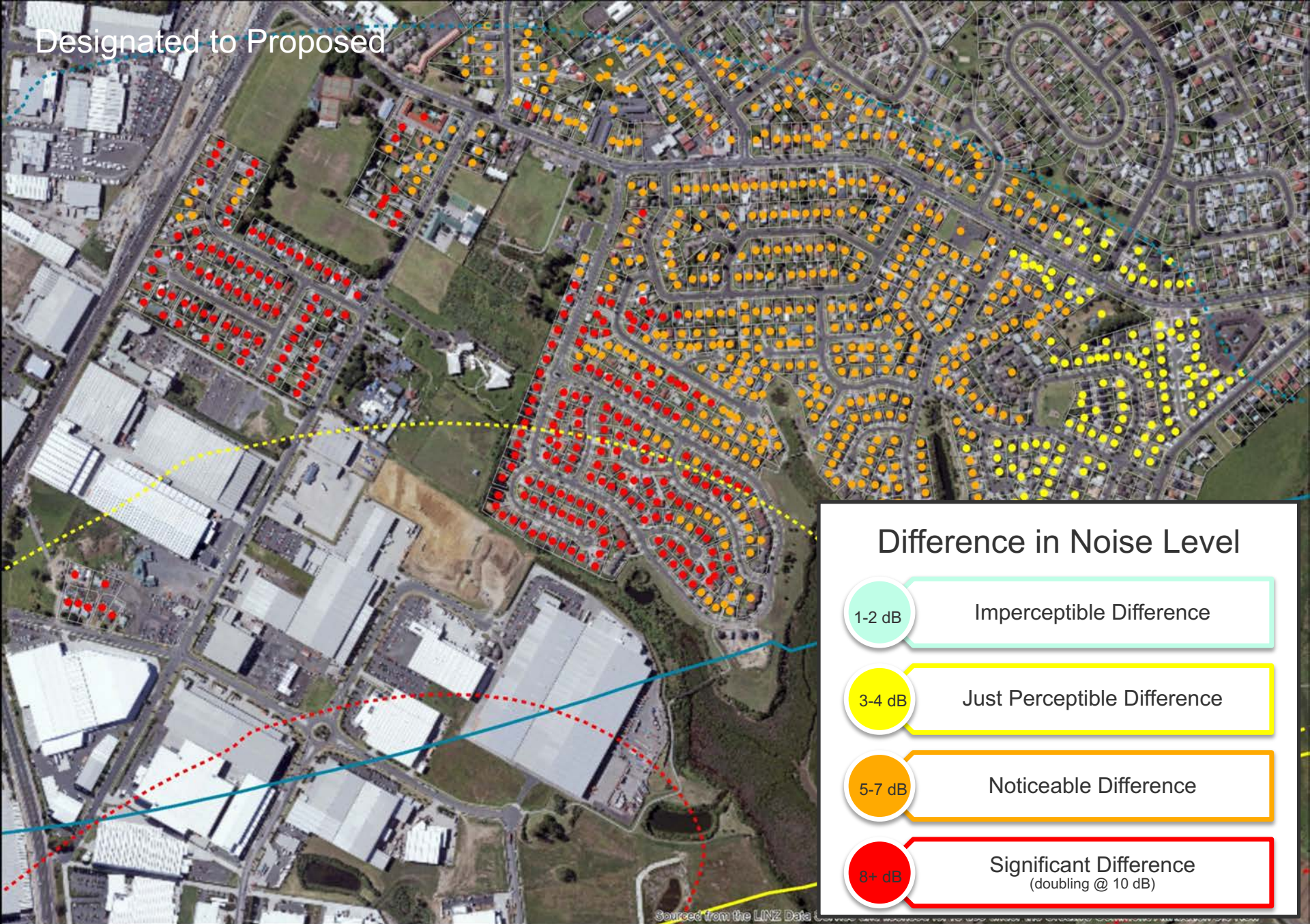


Designated to Proposed



LINZ and Eagle Technology

Designated to Proposed



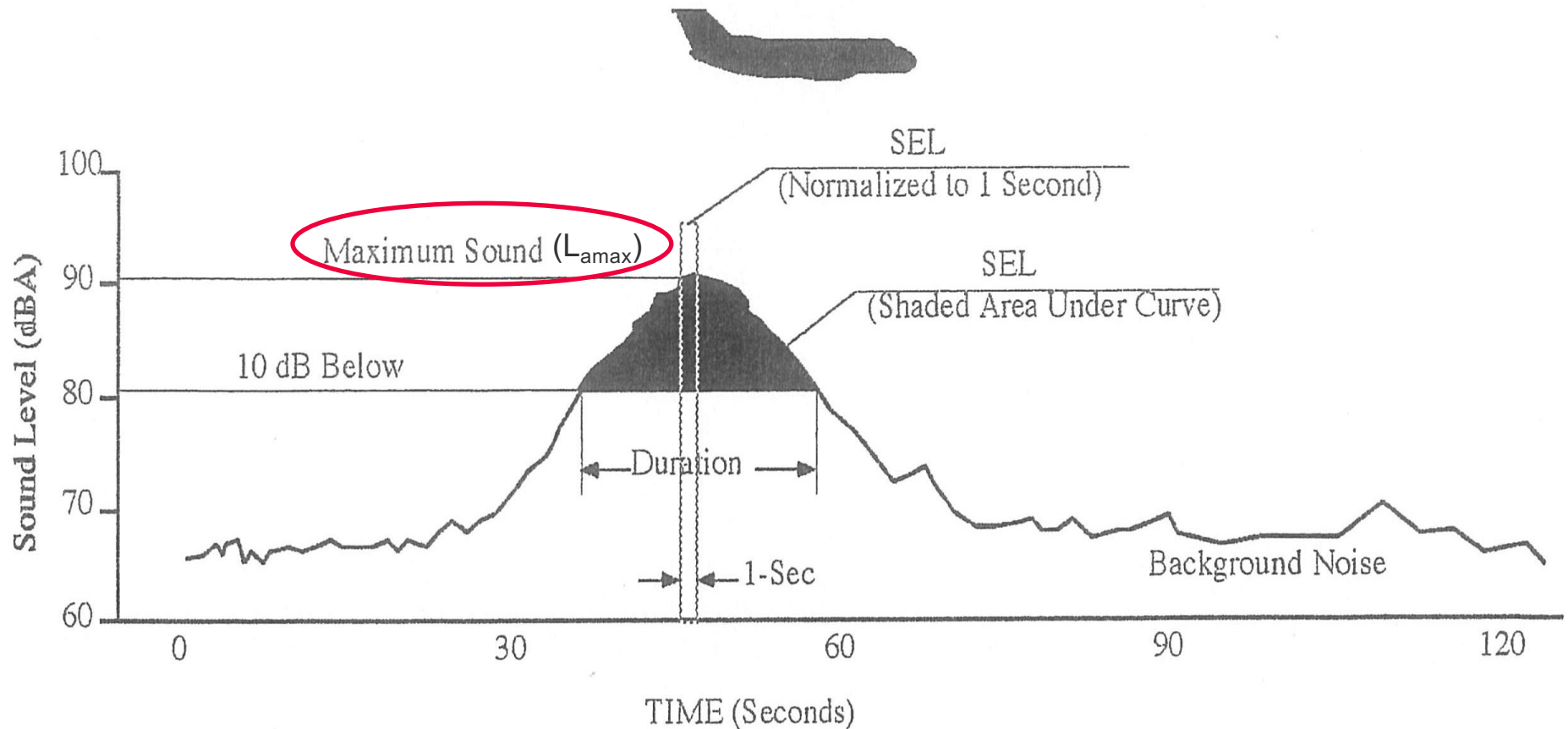
Difference in Noise Level

- 1-2 dB Imperceptible Difference
- 3-4 dB Just Perceptible Difference
- 5-7 dB Noticeable Difference
- 8+ dB Significant Difference (doubling @ 10 dB)

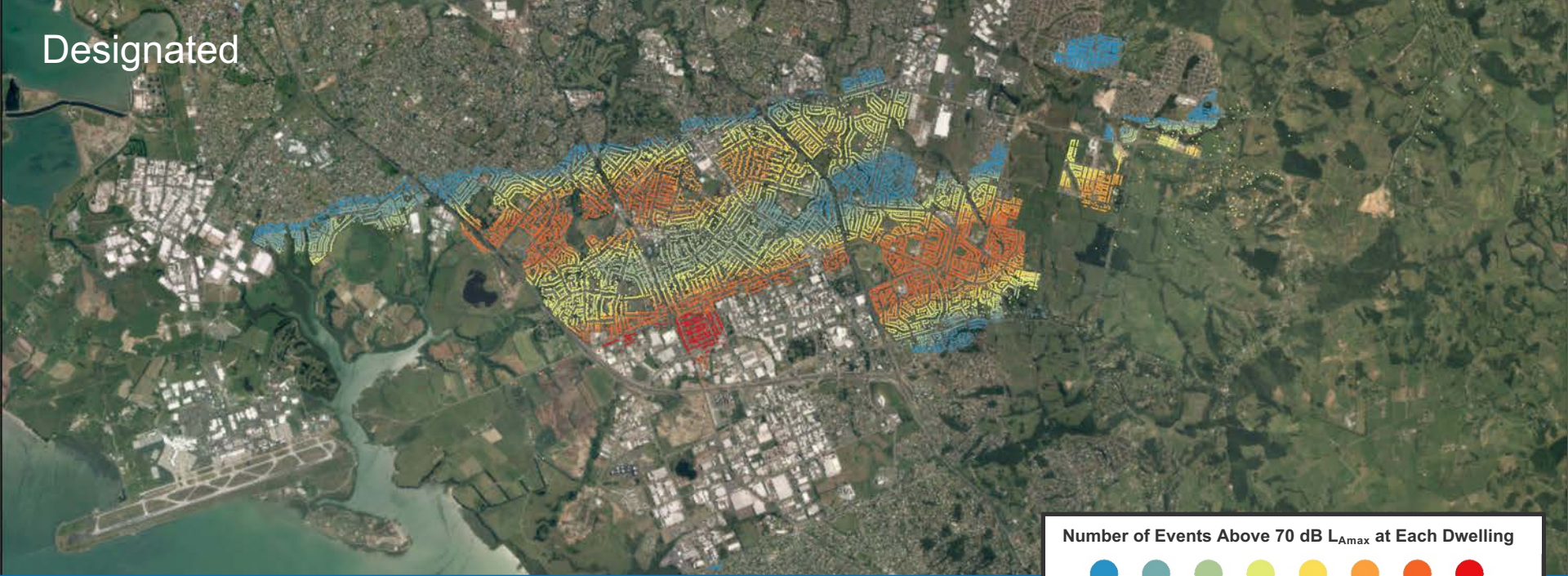
Sourced from the LINZ Data

Method 3

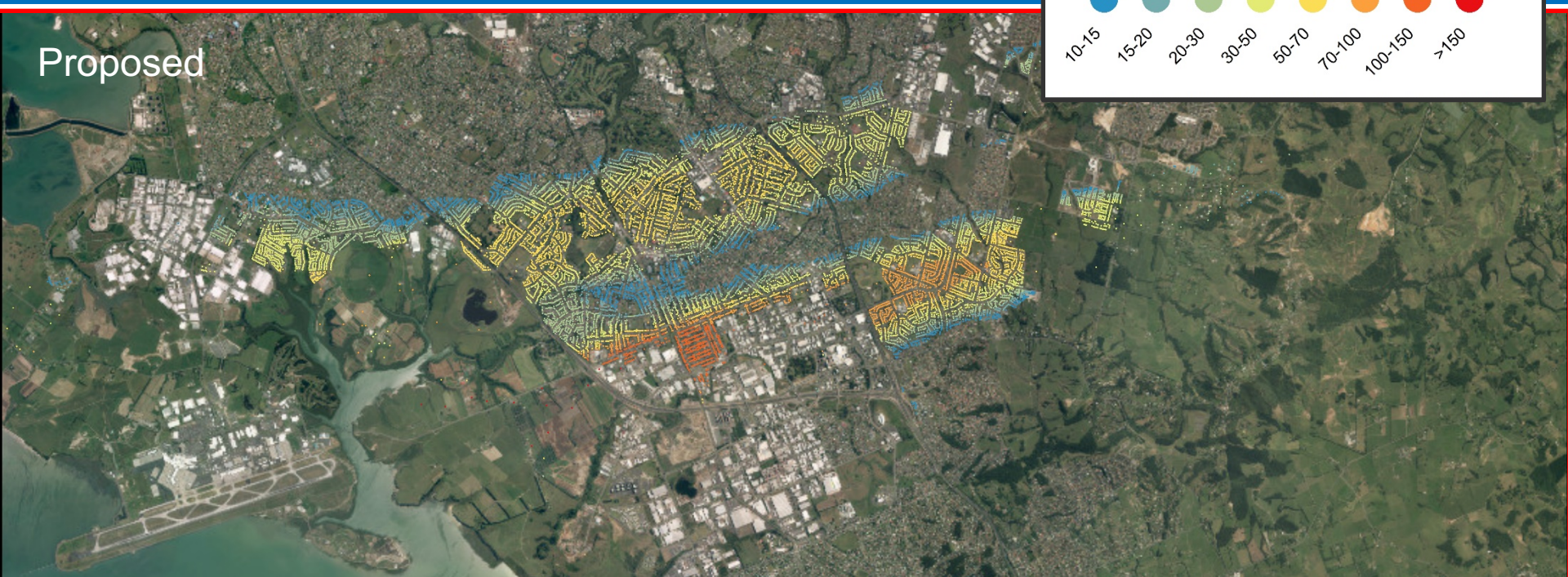
Number of Aircraft Overflights

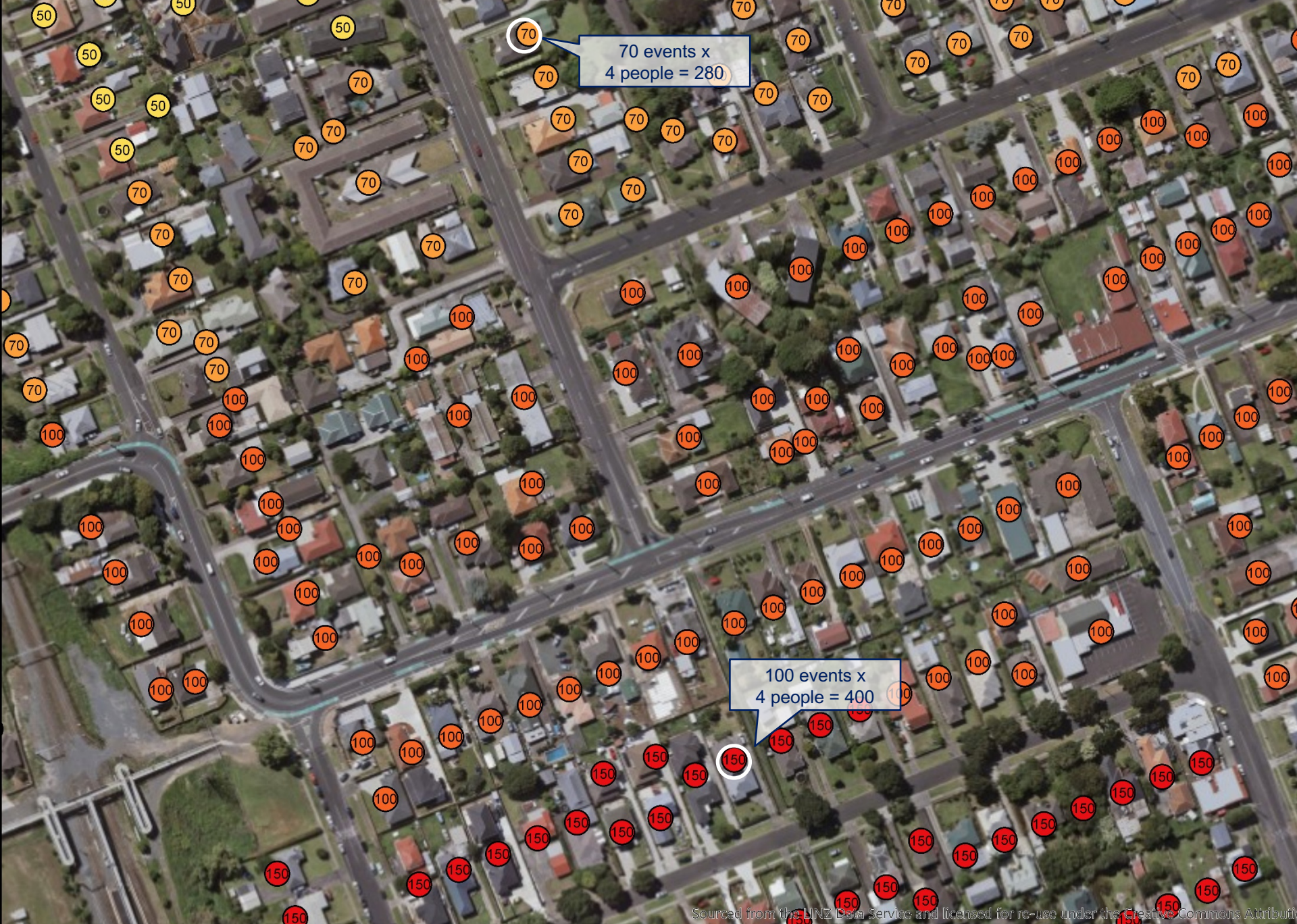


Designated



Proposed





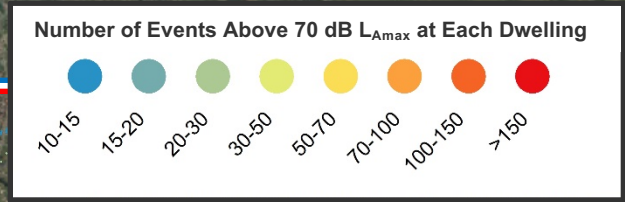
70 events x
4 people = 280

100 events x
4 people = 400

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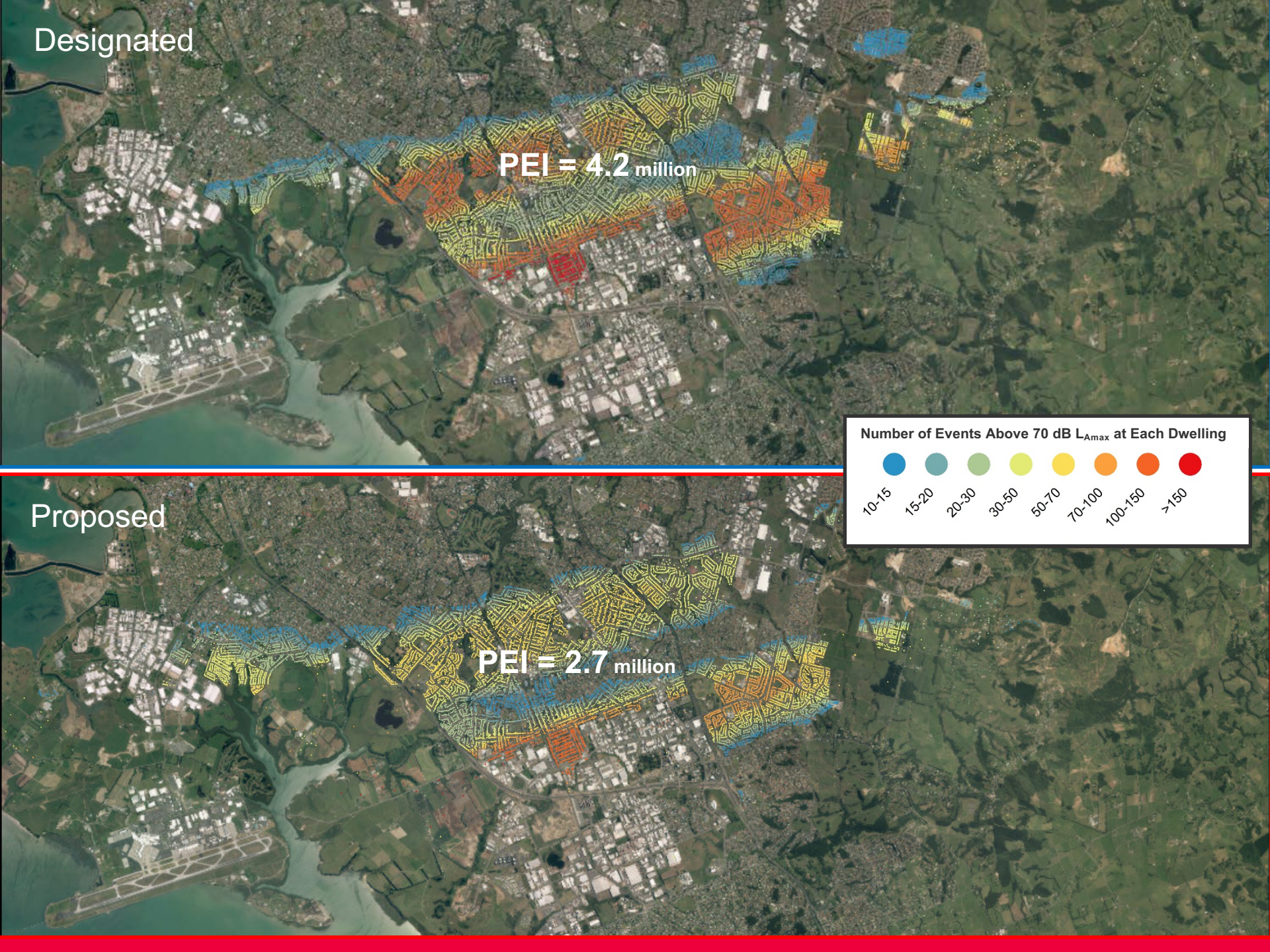
Designated

PEI = 4.2 million



Proposed

PEI = 2.7 million



Summary

- Method 1 – Number of People Highly Annoyed
 - Designated 10,065 HA
 - Proposed 10,318 HA
- Method 2 – Change in Noise Level
 - + 5-7 dB for 2,228 people
 - >+8 dB for 990 people
- Method 3 – Number of Noise Events
 - Designated 4.2 million
 - Proposed 2.7 million



Questions?