

# Noise Management Around Airports, a view from UK Air Traffic Control

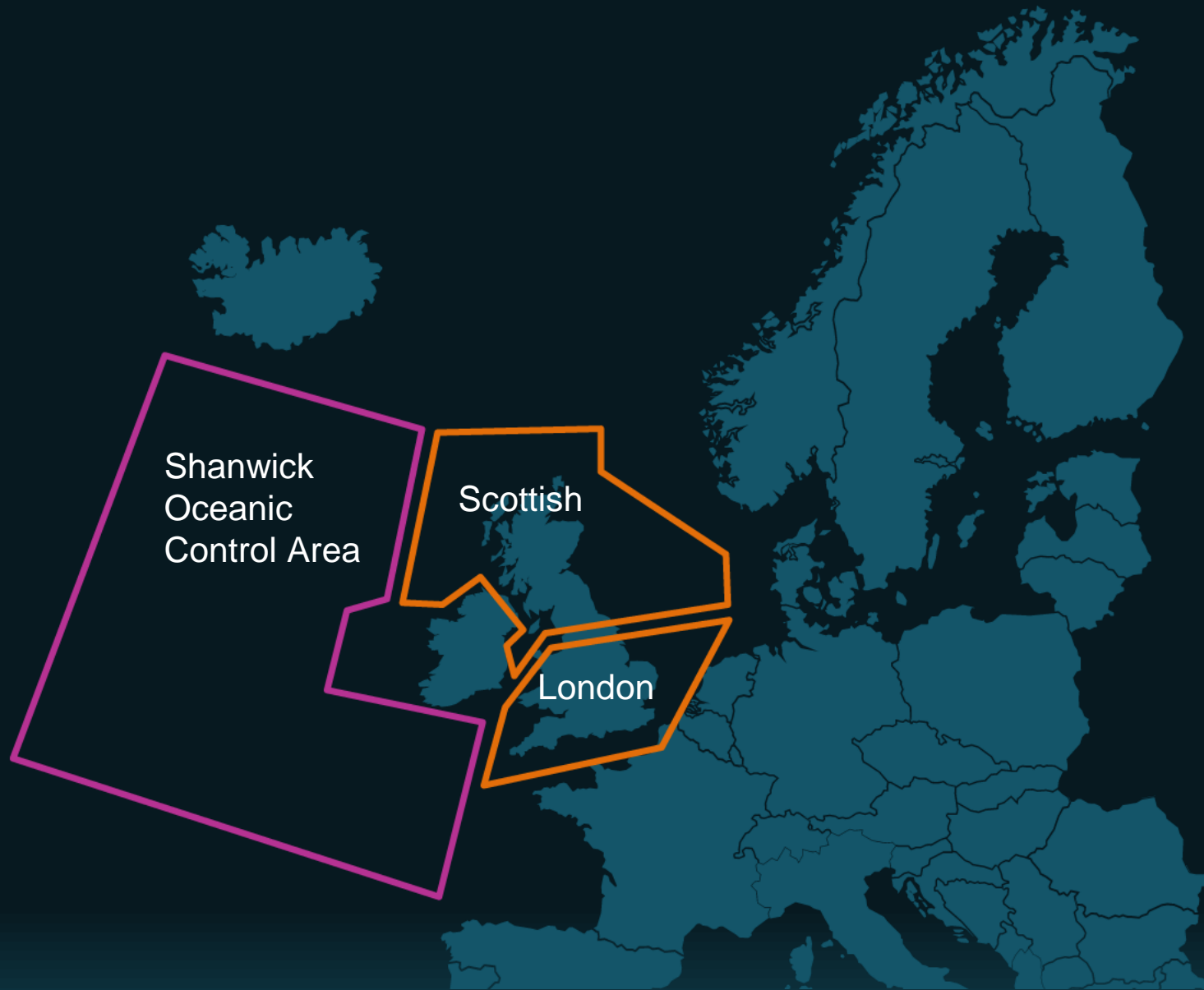
Ian Jopson

Head of Environmental and Community Affairs

NATS

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- London & Scottish:  
1m km<sup>2</sup> – 11% of Europe's  
airspace and 25% of traffic
- Shanwick  
2.2m km<sup>2</sup> – 80% of North  
Atlantic traffic

# Management of UK Airspace



2.5 million flights.



Over 250 million  
passengers



13 of the busiest  
UK airports



World's first:  
environmental  
targets

# Context – UK's Aviation Strategy



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# UK Aviation Strategy - quicker, quieter and cleaner...



- UK Government's airspace modernisation objective ***to deliver quicker, quieter and cleaner journeys and more capacity***
- Progressively reduce the noise of individual flights, through quieter operating procedures
- Require that noise impacts are considered through the airspace design process
- Decisions over concentration vs respite - based on local circumstances in consultation with local communities
- An Independent Commission on Civil Aircraft Noise (ICCAN) to consider how they can best support communities in engaging with the airspace change process
- Legislation giving Secretary of State the power to direct airports or air navigation service providers to take forward airspace changes for reasons other than safety or capacity (...noise)



# UK Aviation Strategy – A Package of Measures on Noise

- Proposing a new objective to ***‘limit, and where possible, reduce total adverse effects on health and quality of life from aviation noise’***
  - A new national indicator to track the long term performance of the sector in reducing noise.
    - a noise quota? a total contour area?
  - ‘Balance noise and growth’ set noise caps as part of planning approvals; provide future certainty to communities
  - All major airports: plans to commits to future noise reduction, periodic review
  - Improved flight path information for prospective home buyers; better informed decisions
  - Statutory enforcement powers for Independent Commission on Civil Aircraft Noise or CAA
  - For airspace changes causing significantly increased overflight, a new minimum threshold of an increase of 3dB LAeq, which leaves a household in the 54dB LAeq contour or above as eligible for assistance with noise insulation
-

# Context – UK Sustainable Aviation Coalition

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# SUSTAINABLE AVIATION

Cleaner. Quieter. Smarter.

## 90,095

tonnes of CO<sub>2</sub> saved due to more efficient flights in UK airspace since 2014

## 63,267

more continuous descent approaches in 2015/16 than 2014, reducing noise and CO<sub>2</sub>



The **Airbus A350-900** and **Boeing 787-9**

have reduced the area impacted by noise by at least 2.4km<sup>2</sup> than the aircraft they replace

## 12,200

fewer people in noise contour areas at 5 SA airports than in 2014 despite 13% passenger growth

### UK industry

has taken a key role in the development of global aviation industry carbon offset scheme

## Over 140

innovation and technology projects

are being supported by the UK aerospace industry, worth over

## £700 million

to cut future aircraft emissions and noise, including development of hybrid and electric aircraft



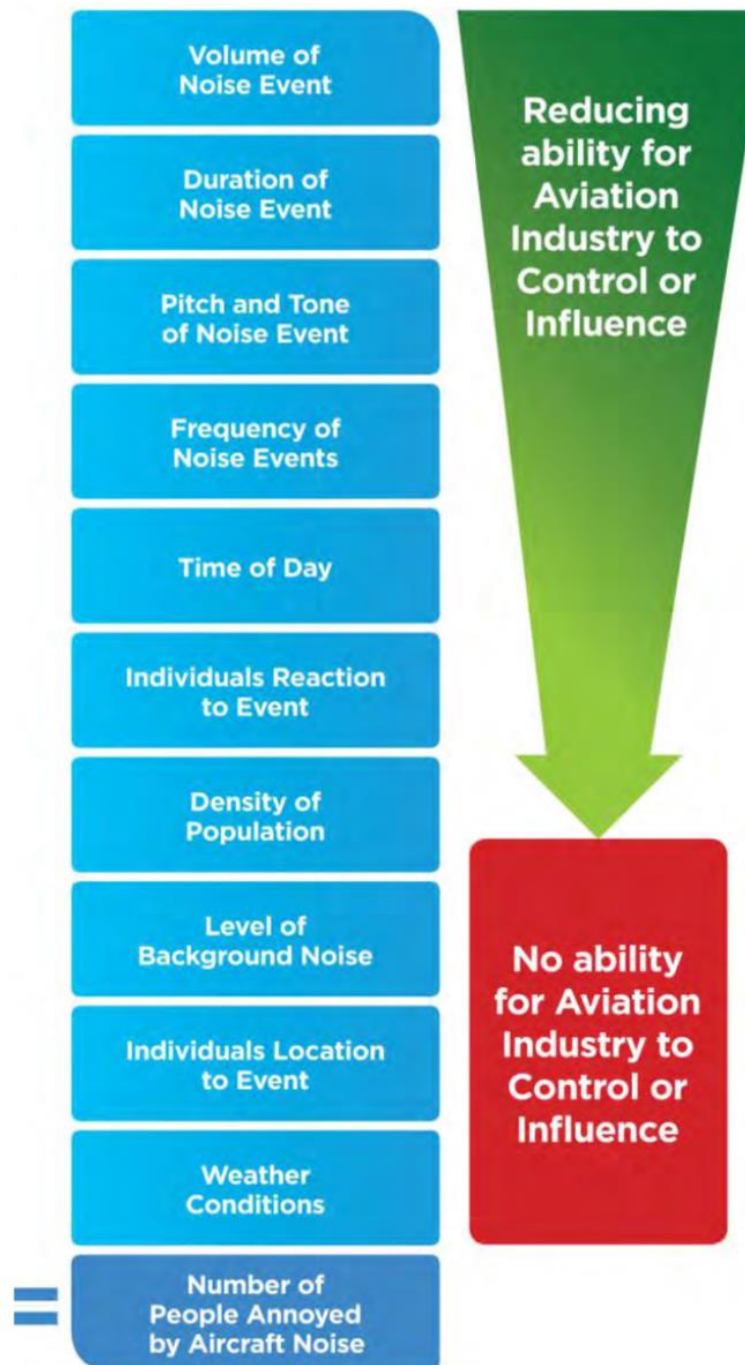
## 1%

of UK NO<sub>x</sub> emissions from aircraft



**Disconnecting growth** in UK aviation from growth in emissions and noise





## Aircraft noise.... a classic 'externality'

externality    *[ ek-ster-nal-i-tee ], noun*

'the cost or benefits of a transaction to parties who do not directly participate in it; can be either positive or negative'

'an external effect, often unforeseen or unintended, accompanying a process or activity'

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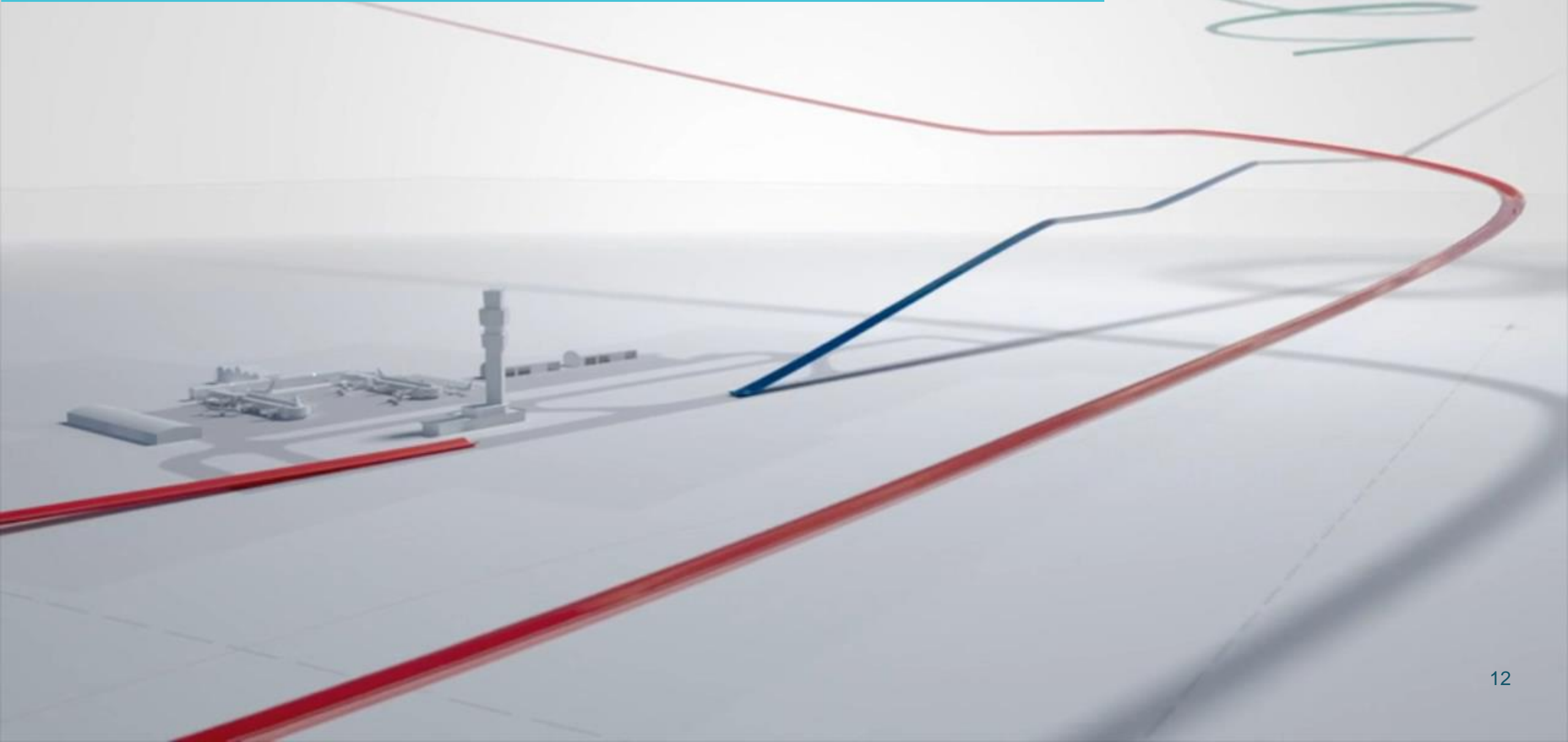
# UK Airspace Modernisation (PBN) – a noise opportunity...?

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# Performance Based Navigation



# PBN – Noise Management Opportunities



- Sharing routes over a wider area with multiple PBN routes (although might increase the total number of people overflown)
  - Routing aircraft accurately over urban areas where there is higher general noise levels
  - Routing aircraft over rural areas where fewer people live
  - Protect parks and other quiet spaces by routing aircraft over built up areas or vice versa
  - Prioritise noise over CO<sub>2</sub> emissions in low level airspace; or the reverse in areas where noise has less impact
  - Use multiple PBN routes to alternate flights over different areas, possibly on a planned basis to give community predictable periods of respite or temporary relief from aircraft noise
  - Changing PBN routes at particular times of day to manage noise impacts
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## PBN – benefits...



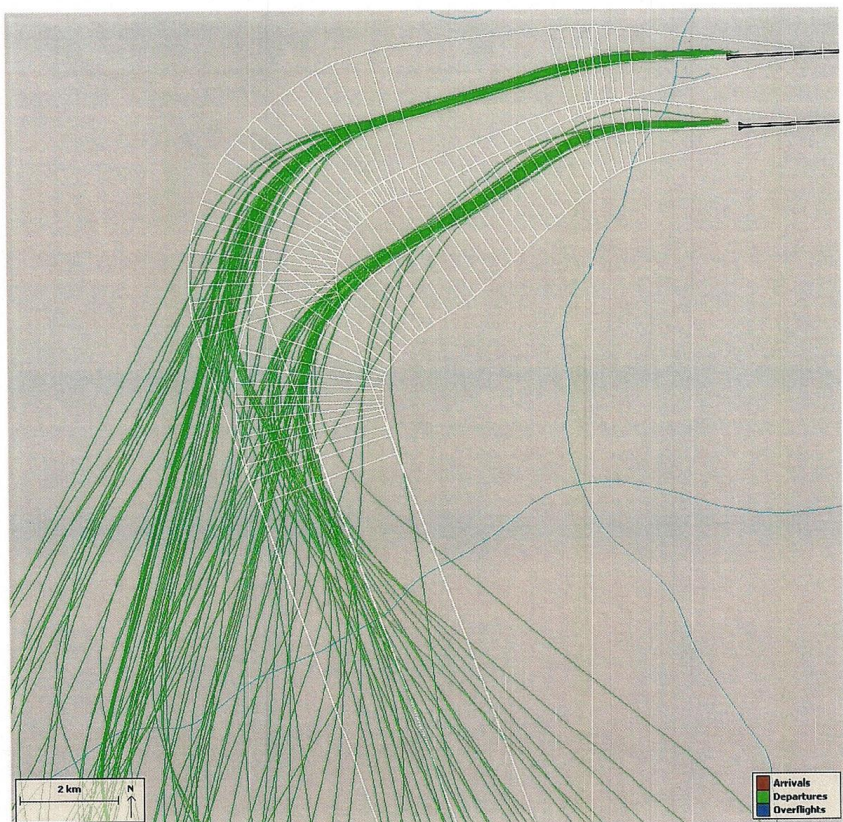
- London City PBN SID replications led to 1.2 million fewer people being overflown below 7,000ft
- Stansted PBN departure routes on two SIDs led to a 83% and 87% reduction in overflown population
- Edinburgh offered the potential to reduce the number of people overflown by up to 46%
- Possible 10-20% emissions reduction in UK airspace

	Potential % Reduction in Size of Noise Footprint per Flight at 55dB
Birmingham	10.3%
Cardiff	3.1%
Bristol	0.6%
Luton	27.8%
Gatwick	20.8%
London City	70.2%
Heathrow	34.2%
East Midlands	5.2%
Stansted	19.3%

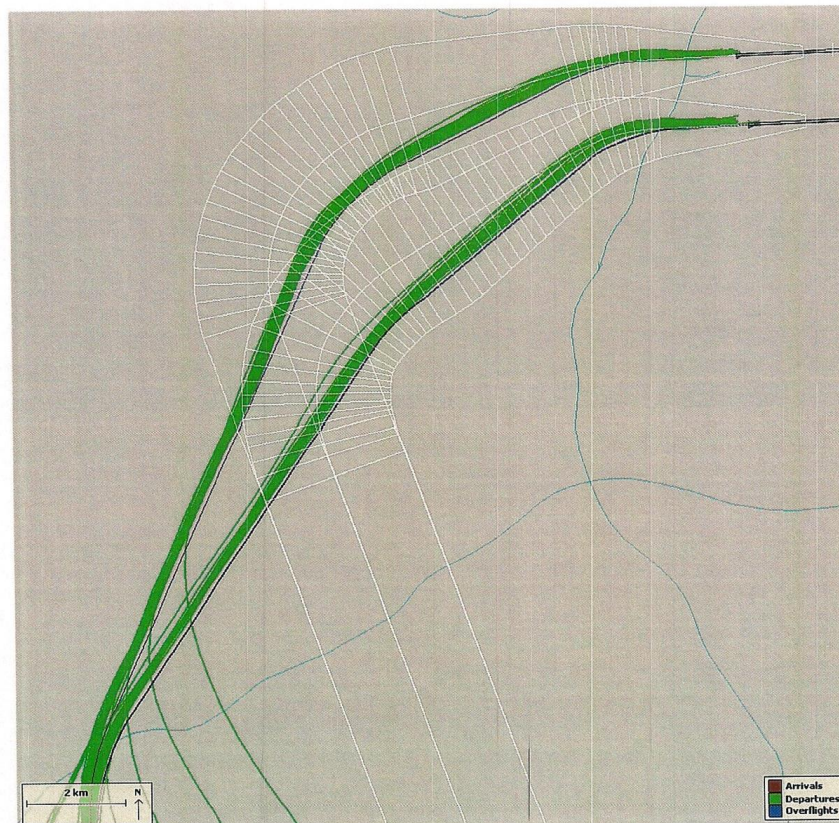


# All good...?

MID departures, 15 December 2013 (with NPRs shown)

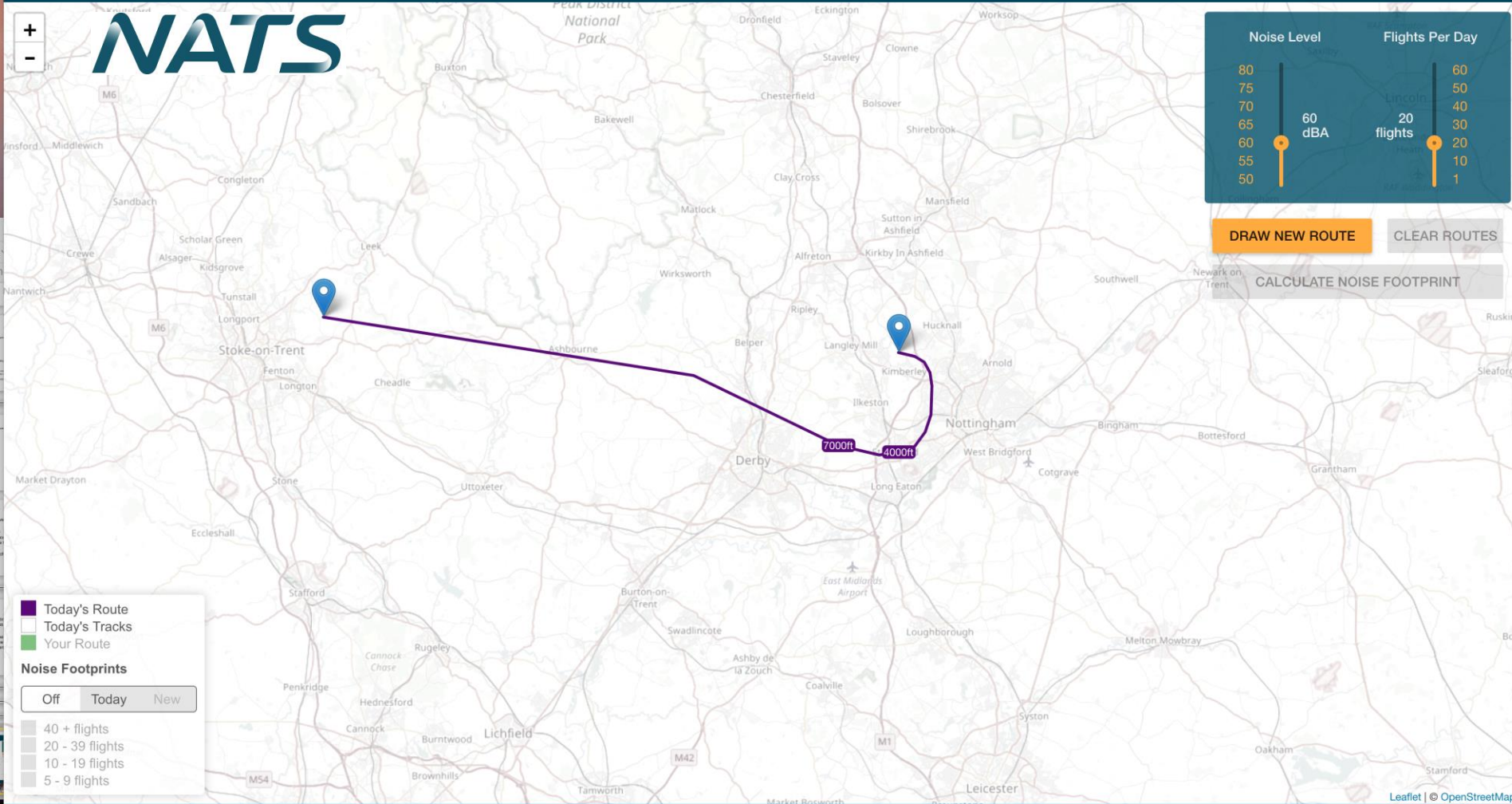


MID departures, 16 December 2013 (with NPRs and DOKEN routes shown)



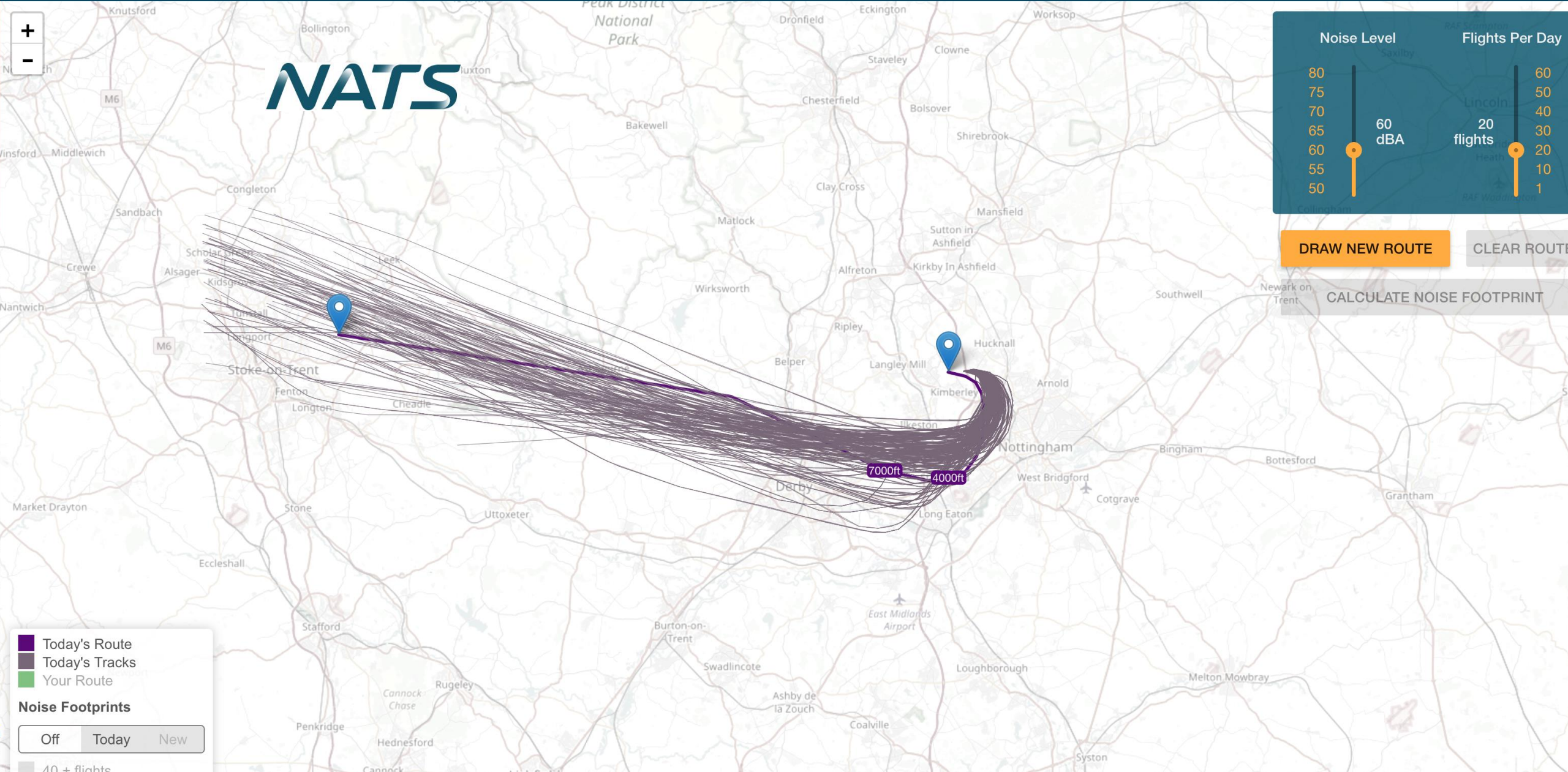


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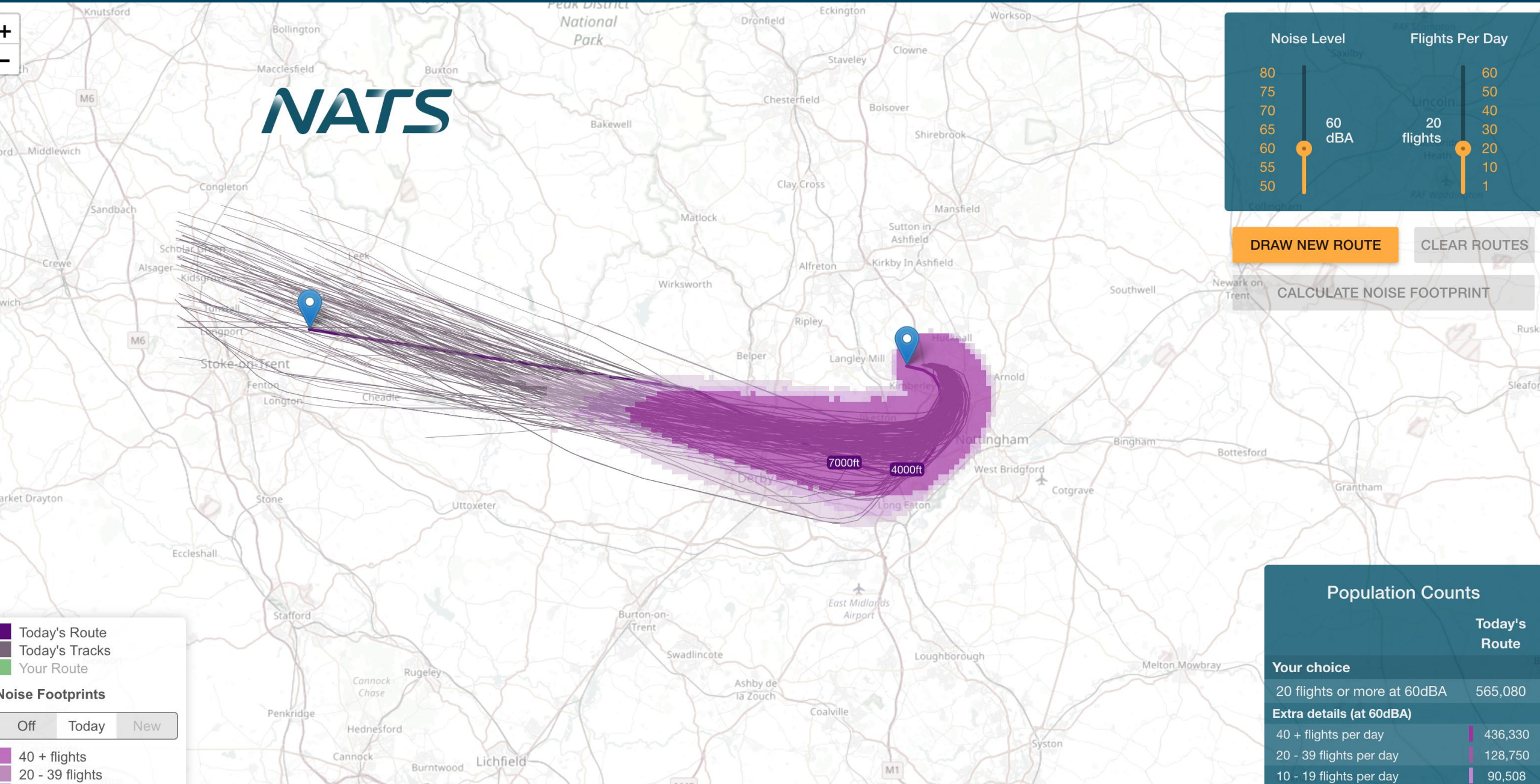


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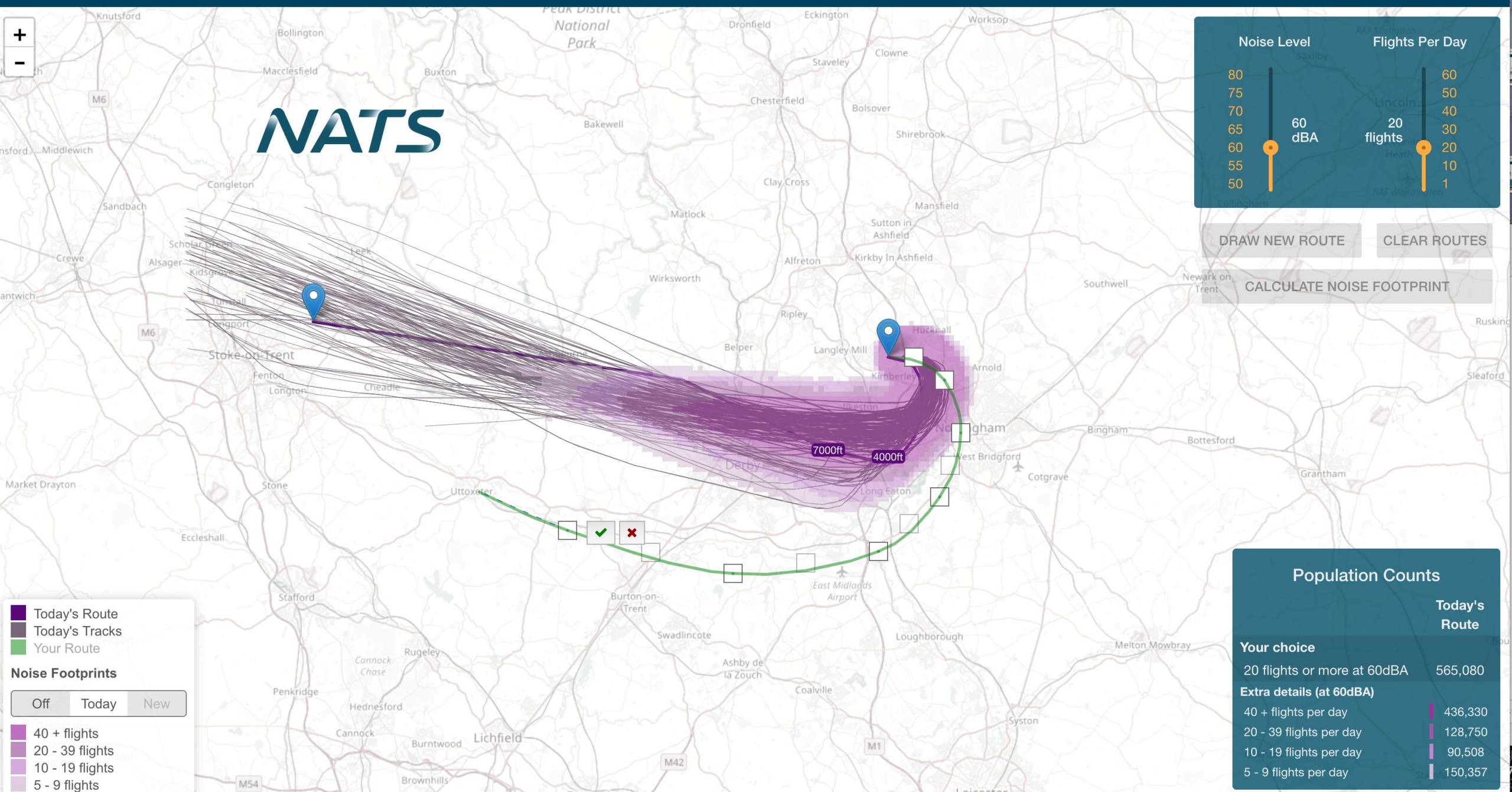




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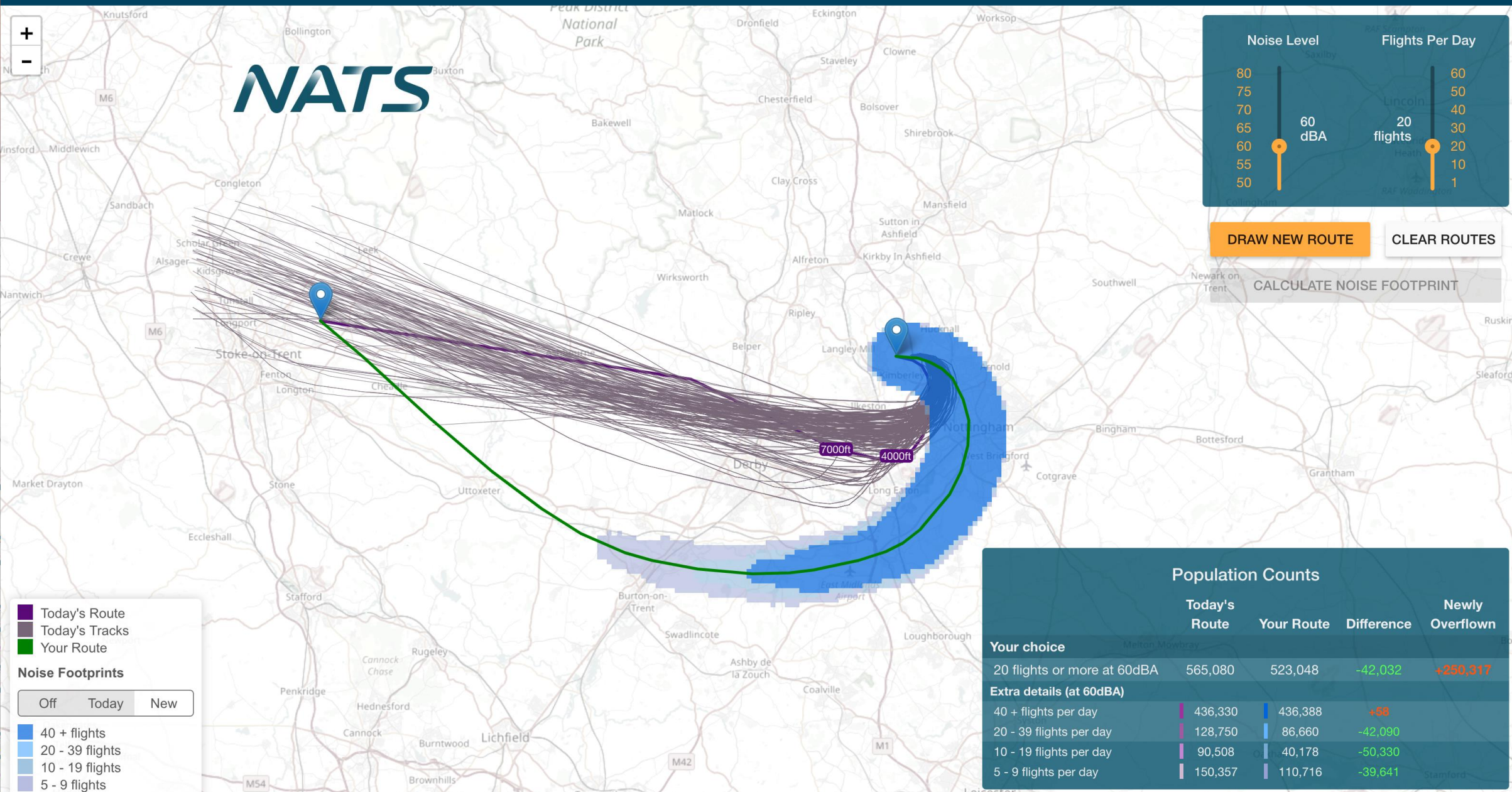






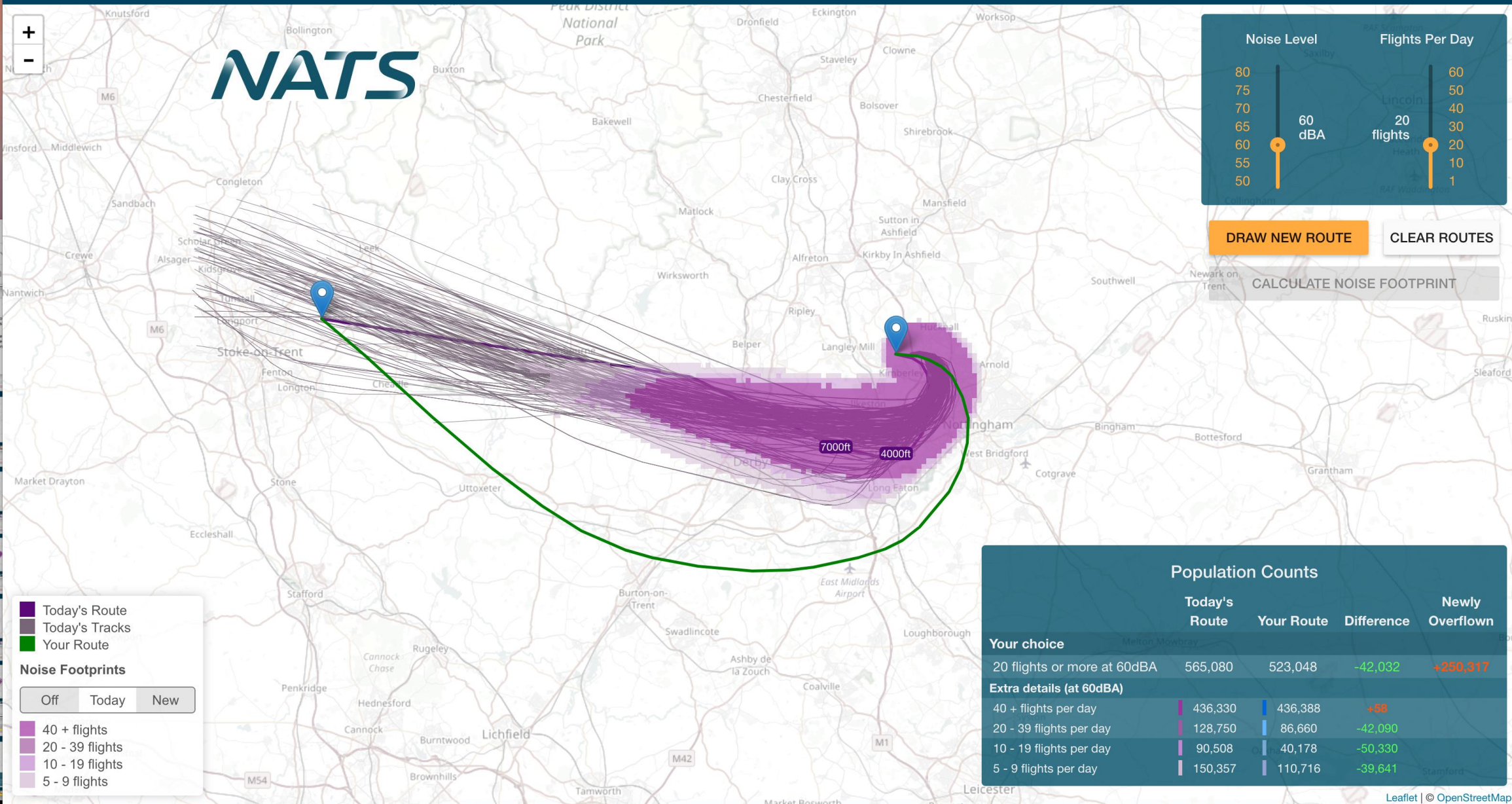


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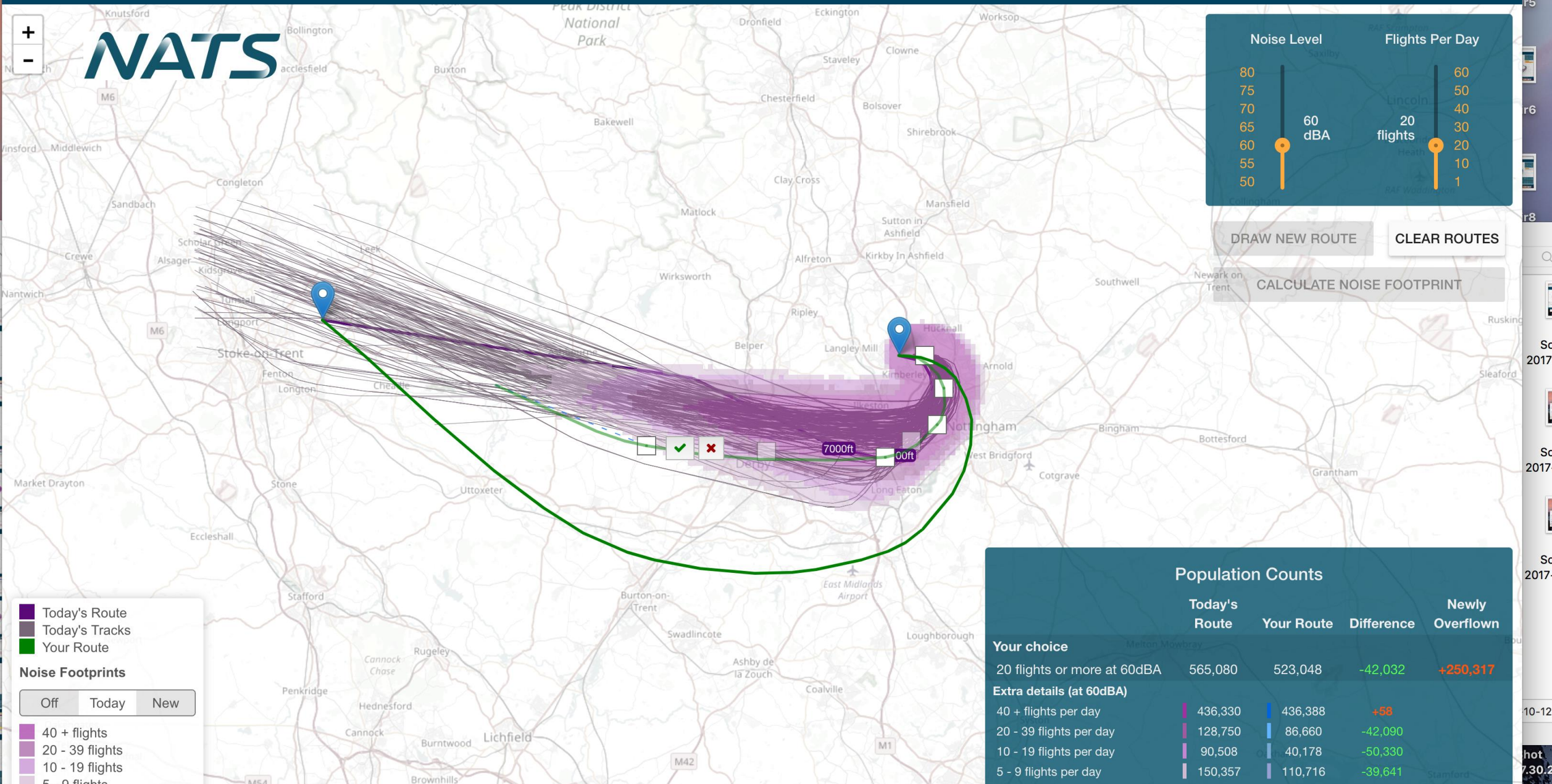


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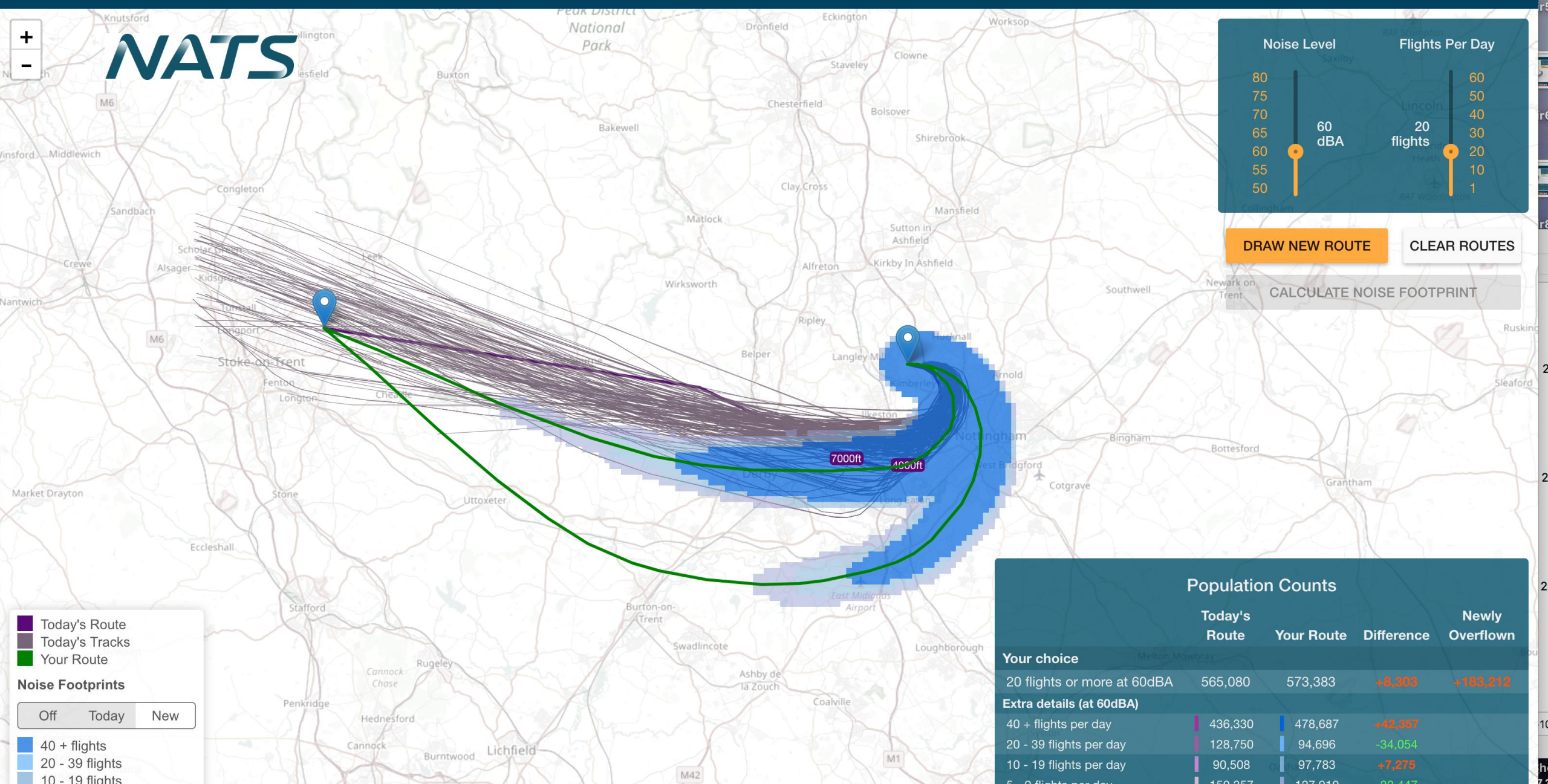


# Comp-Air





# Comp-Air



# Summary



- UK's Aviation Strategy sets out a framework for aviation to grow sustainably
  - As an industry, aviation has made great strides in reducing noise at source, improving operational procedures
  - In the UK noise has been disconnected from growth in traffic
  - But has the noise problem gone away...?
  - Airspace modernisation (PBN) is coming - and offers significant operational benefits
  - Community reaction to PBN is likely to be significant a blocker to improvements
  - Is this about externalities? How can we bring communities closer to the airspace modernisation debate to deliver future growth and capacity in a sustainable way
-

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