

Gatwick Route 4

Redesign of RNAV Standard Instrument Departures
Design Principles Focus Group

15/16 & 20 May 2019



Introduction

Welcome & Introductions

Domestics (Fire Alarm, Facilities, Refreshments)

Why are you here?

- Help develop our Design Principles for Route 4
 - Design Principles Questionnaire
 - Focus Groups
- Eager to hear your contributions to this process



Background - Strategic

UK is modernising its Instrument Flight Procedures (IFPs) by introducing Performance Based Navigation (PBN) by 2024.

Modernisation policy is specified by:

- International Civil Aviation Organisation (ICAO) Resolution 36/23

At the 36th General Assembly held in 2007, ICAO urged all States to implement routes & airport procedures in accordance with the ICAO PBN criteria.

- UK CAA Airspace Modernisation Strategy

Future procedures will be flown with reference to GPS

DVOR Rationalisation & NDB Withdrawal Programme



Background - Route 4 Change

Originally CAA approved RNAV procedures on all 9 departure routes

Post Implementation Review (PIR) conducted by CAA in 2015 determined that modification required to Route 4 design

Modification ratified by CAA in March 2016

Plane Justice challenged CAA's PIR decision

CAA asked court to quash its decision and Route 4 reverted to a temporary status in line with the design as of 6 Apr 17

This new ACP is an opportunity to re-design existing Route 4 (temporary) RNAV procedures from first principles to further reduce the impact experienced by local communities from aircraft departing Gatwick Airport



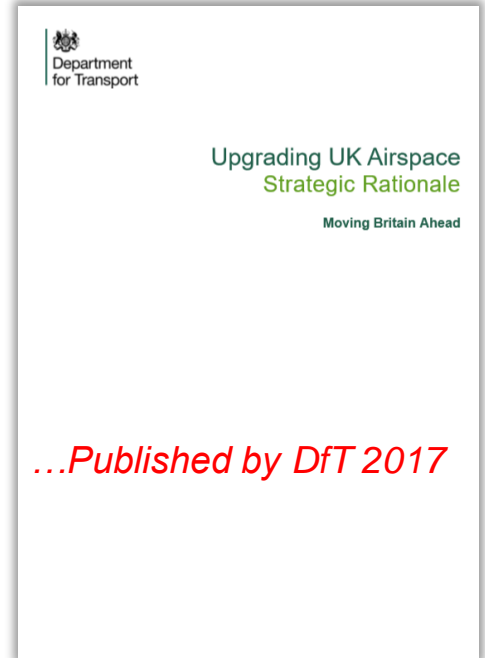
Background - FASI-S Airspace Change

DfT recognised that the modernisation of airspace over Southern England was now necessary to ensure capacity to meet anticipated future demand

- NATS/NERL lead changes above 7,000 ft
- Airports lead on changes below 7,000 ft

Desired operational outcomes:

- Limit & reduce environmental impacts for local communities
- Systemised departure & arrival procedures
- Improved safety and resilience
- Increased capacity
- Improved operational agility (in line with government policy)
- Efficient integration with LAMP (NERL above 7,000 ft)



Items Beyond the Scope of this Change

Gatwick Airport Ltd Draft Masterplan Scenarios

FASI (S) Airspace Changes

Any Airspace Changes that may be required in support of the scenarios within the GAL Draft Masterplan

Heathrow Airport expansion

Any other local ACPs (e.g. Biggin Hill IAP)



Gatwick Airport - Current Operations



Gatwick Local Area

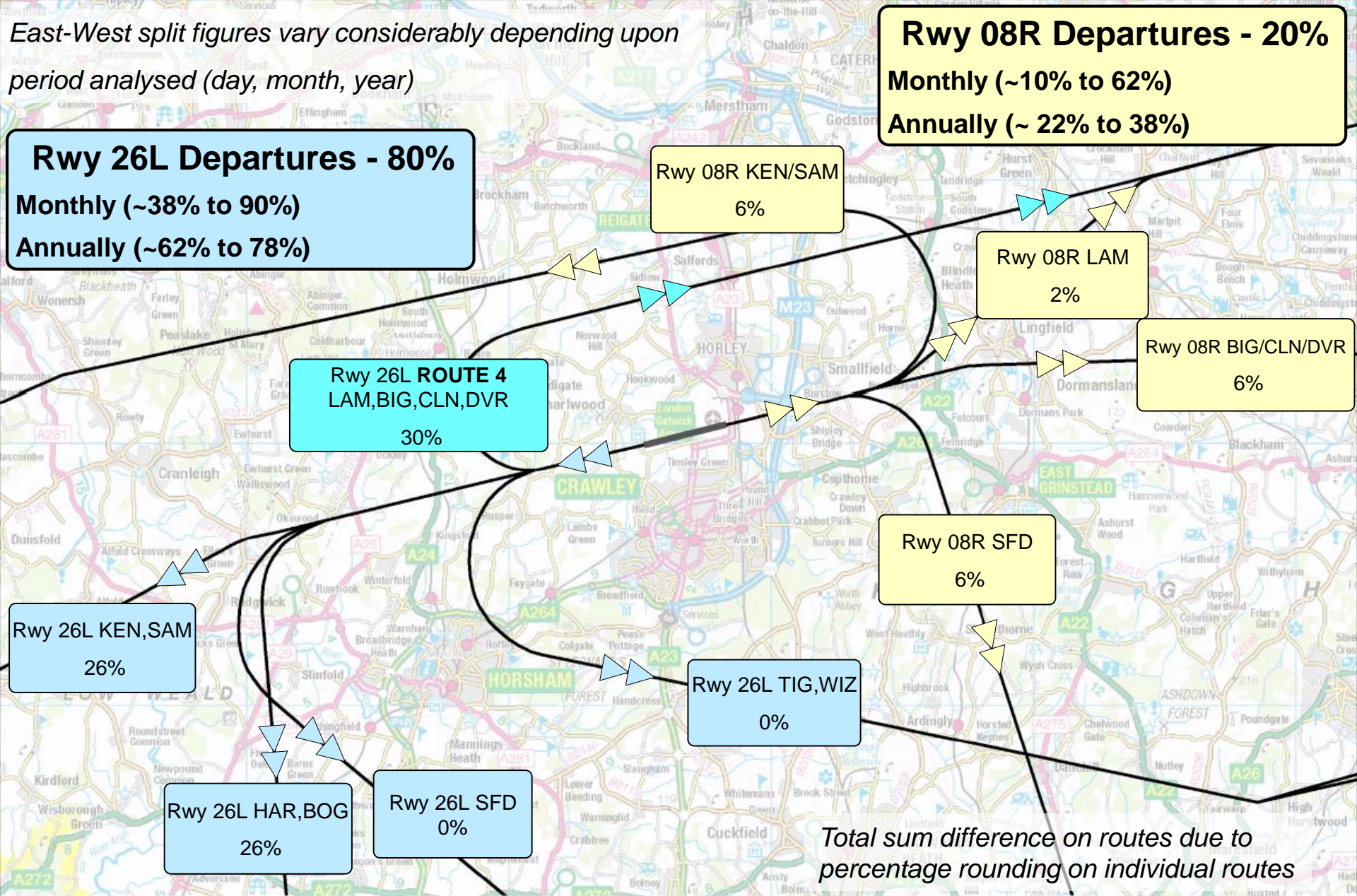


Typical Volumes of Gatwick Day Departures

East-West split figures vary considerably depending upon period analysed (day, month, year)

Rwy 08R Departures - 20%
 Monthly (~10% to 62%)
 Annually (~ 22% to 38%)

Rwy 26L Departures - 80%
 Monthly (~38% to 90%)
 Annually (~62% to 78%)



Total sum difference on routes due to percentage rounding on individual routes



Noise Preferential Route (NPR)

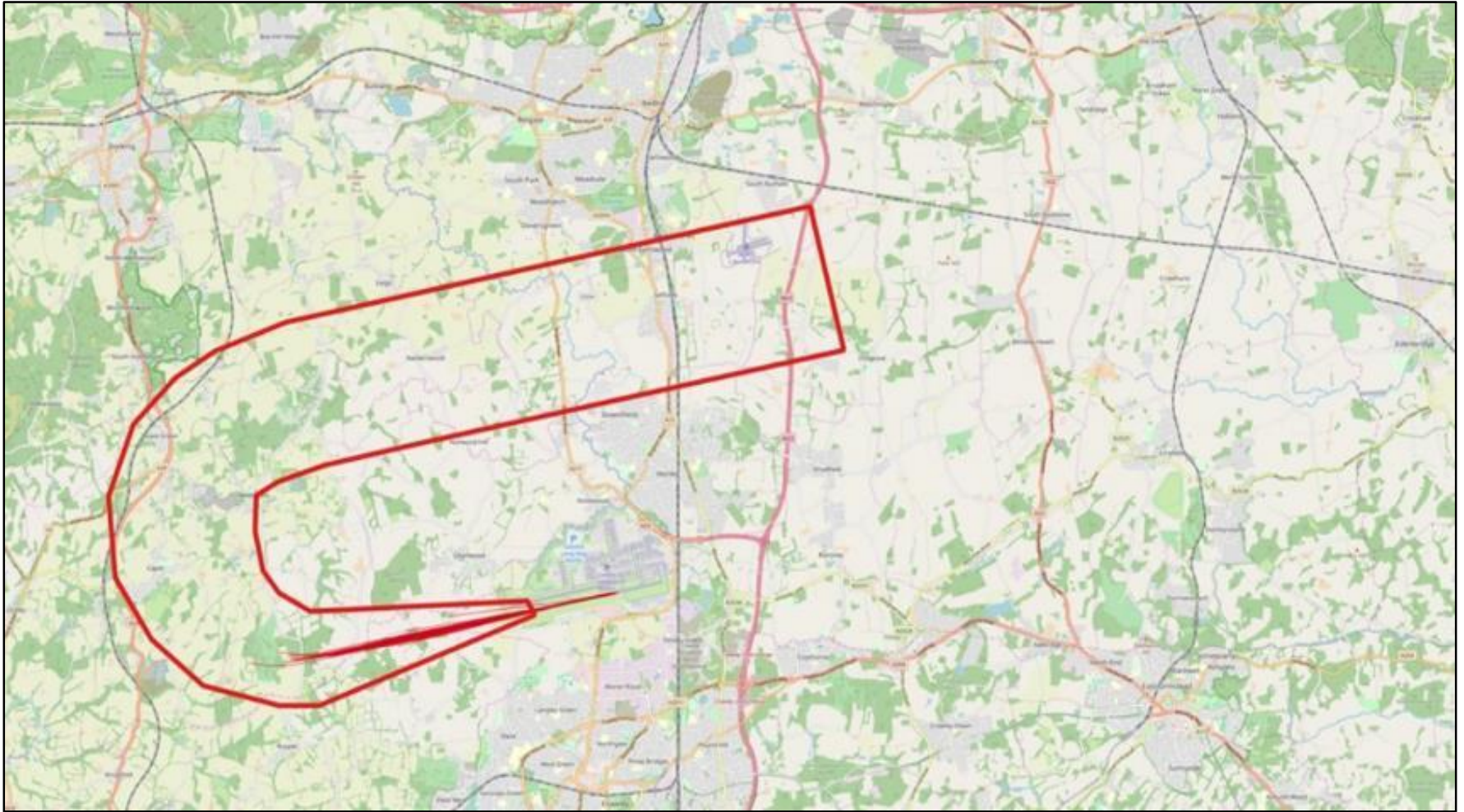


Route 4 is the predominant departure route

- Aligned to NPR & swathe
- Swathe around NPR to 4,000 ft
- Between Reigate & Horley
- Rolling 12-months to Feb 19:
 - 35,000 have used the route in the last 12 months
 - 30% of all Gatwick departures



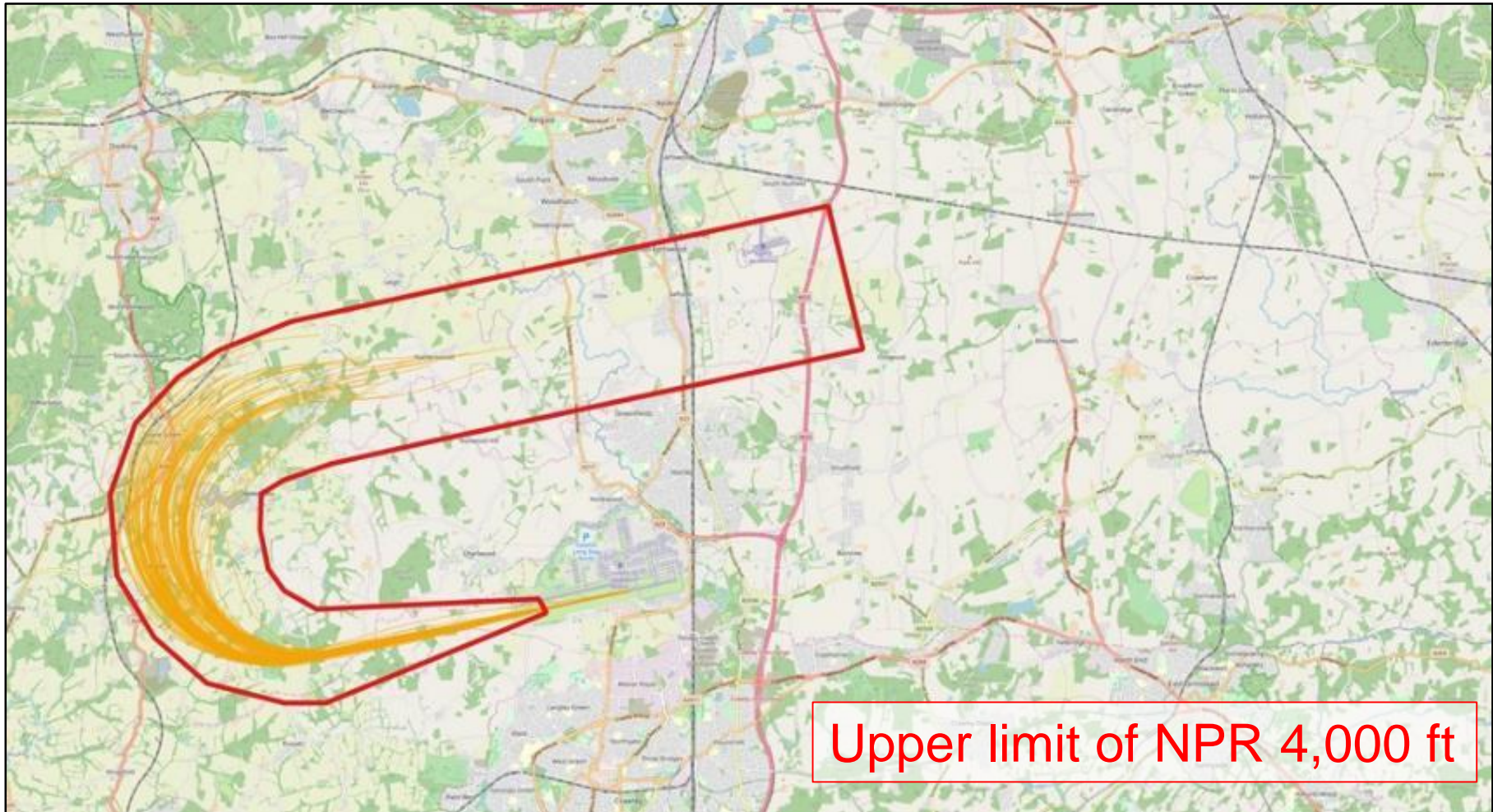
Route 4 NTK Data $\leq 2,000$ ft



Typical busy single summer day (22nd July 2018)



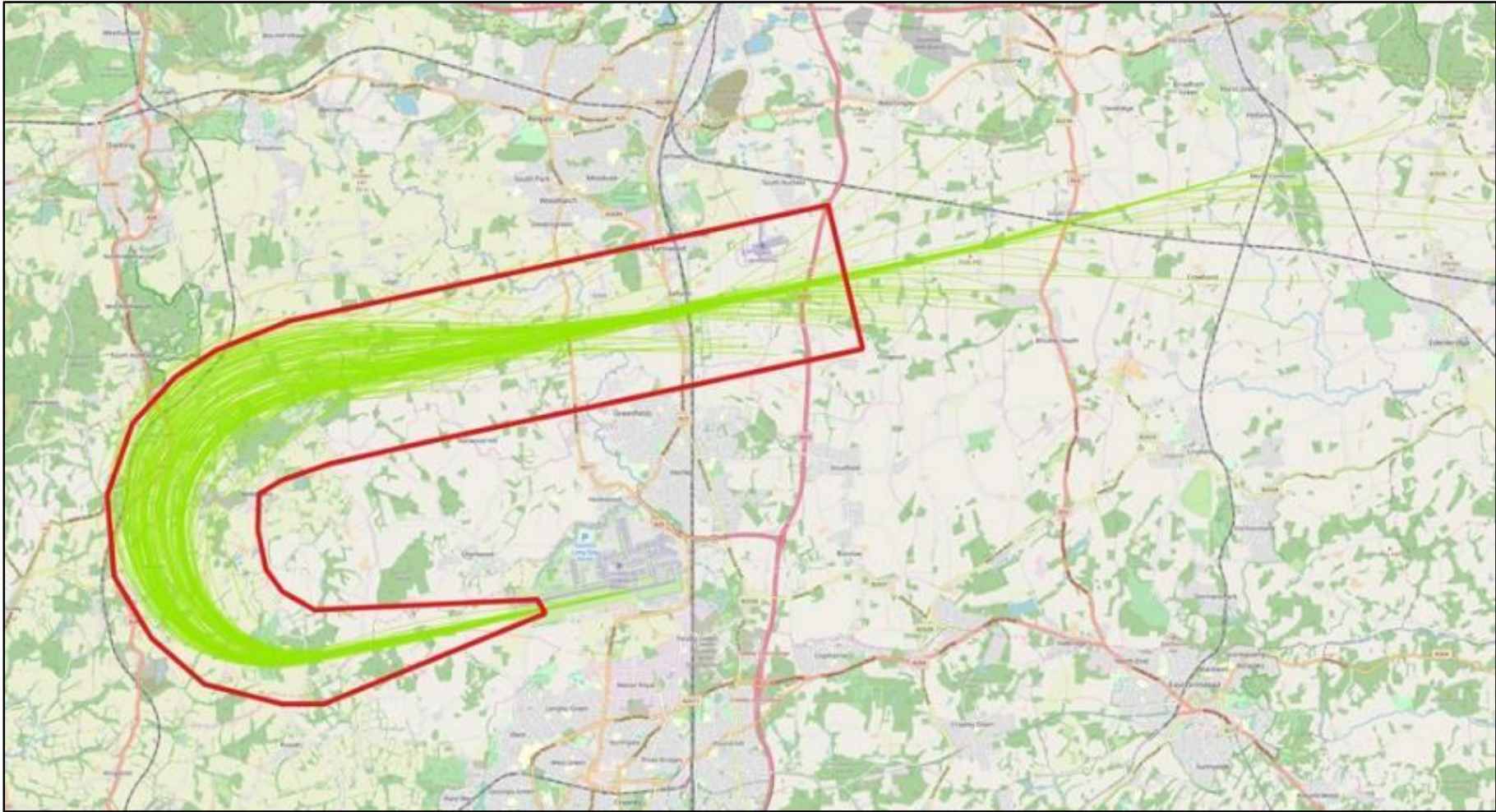
Route 4 NTK Data $\leq 4,000$ ft



Typical busy single summer day (22nd July 2018)



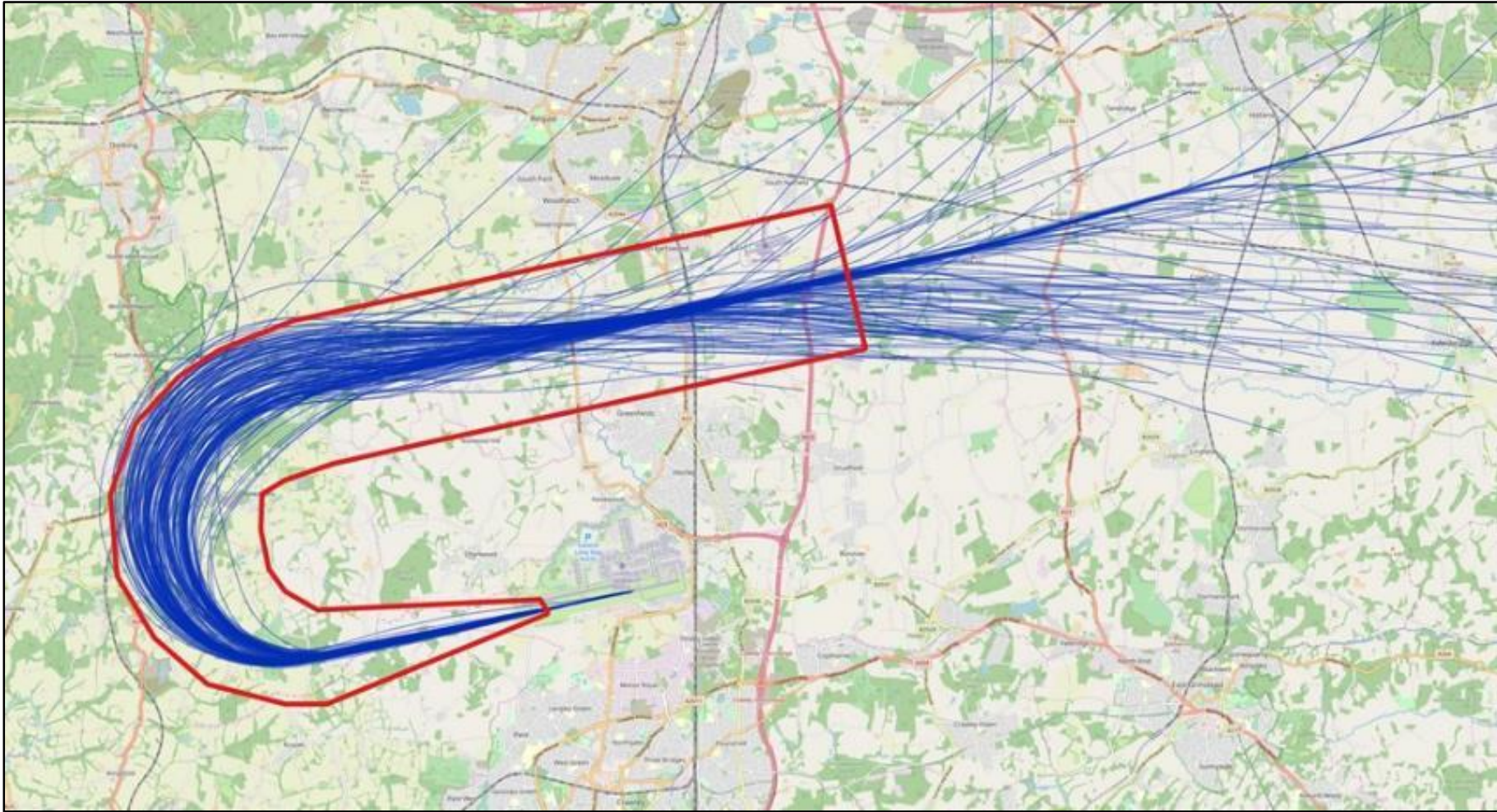
Route 4 NTK Data $\leq 6,000$ ft



Typical busy single summer day (22nd July 2018)



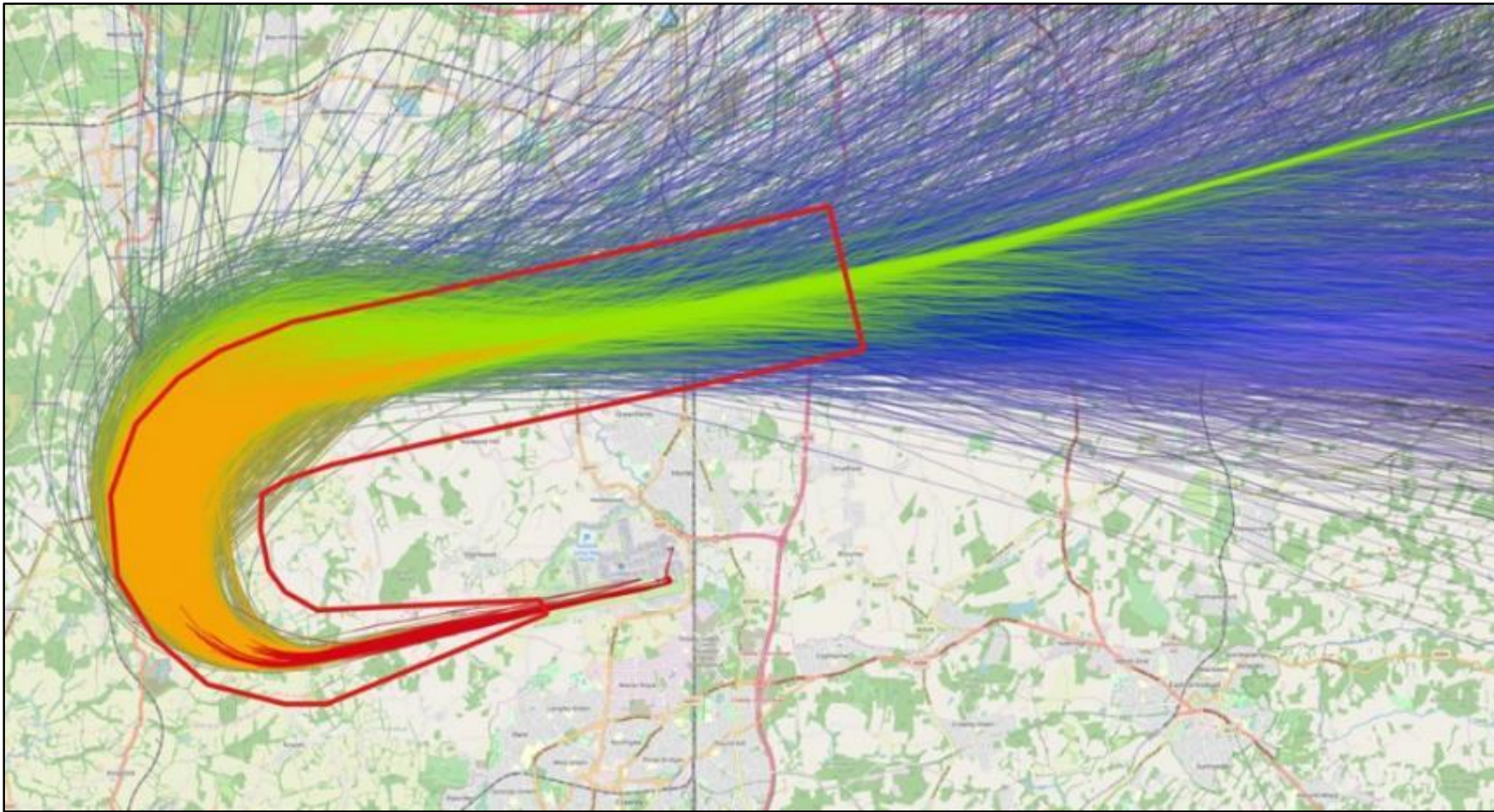
Route 4 NTK Data $\leq 8,000$ ft



Typical busy single summer day (22nd July 2018)



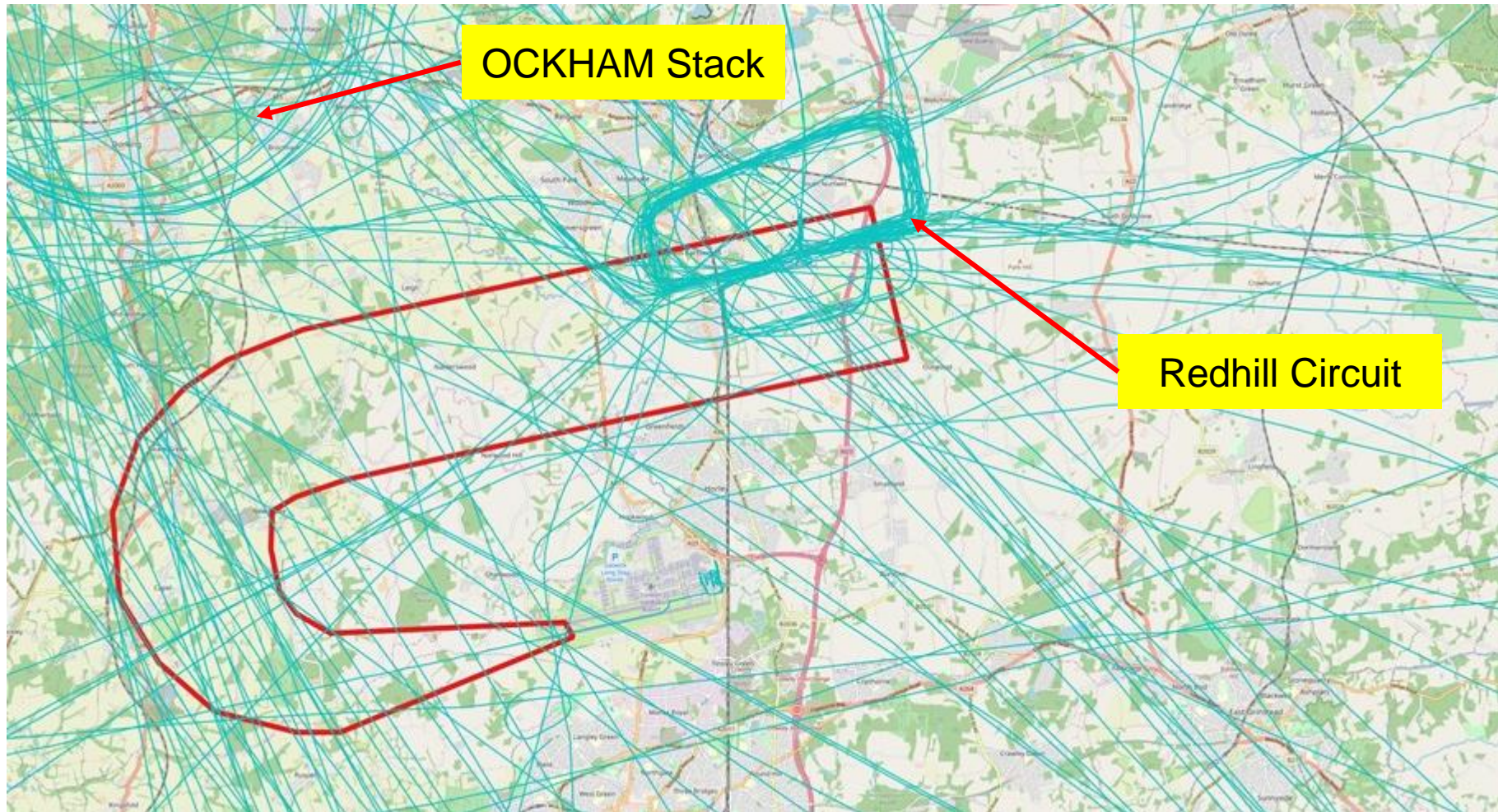
Route 4 NTK Data $\leq 10,000$ ft



Typical busy summer month (July 2018)



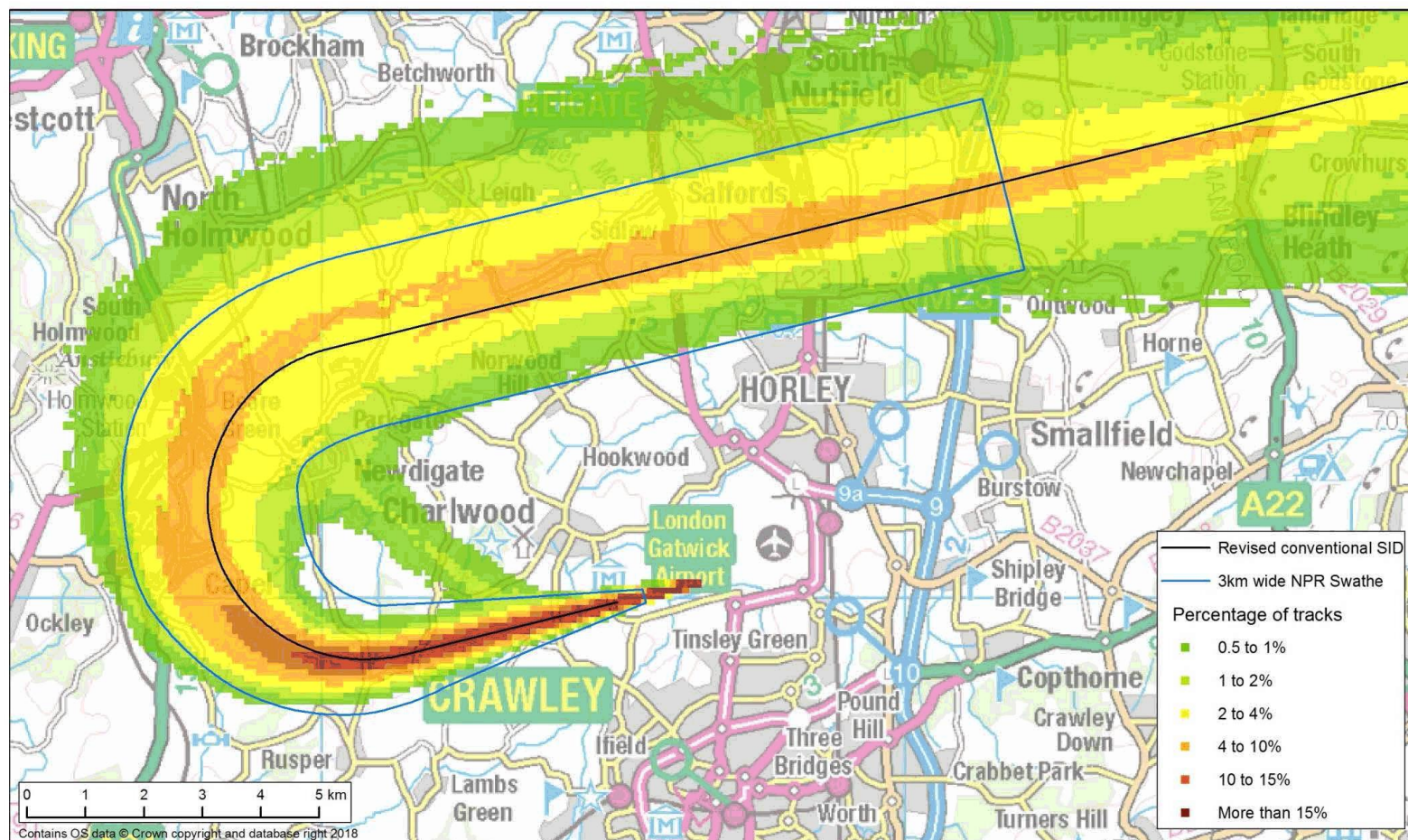
Non Gatwick Transit Traffic < 30,000ft



Typical busy single summer day (22nd July 2018)



Gatwick Route 4 departure track density diagram, Summer 1996



CAP 1616 Process



CAP 1616 - Airspace Design

New process introduced in Jan 2018

- Developed by CAA and independent third party
- Endorsed by DfT:
 - Secretary of State
 - Baroness Sugg of Coldharbour (Aviation)

Replaced CAP 725 (2002)

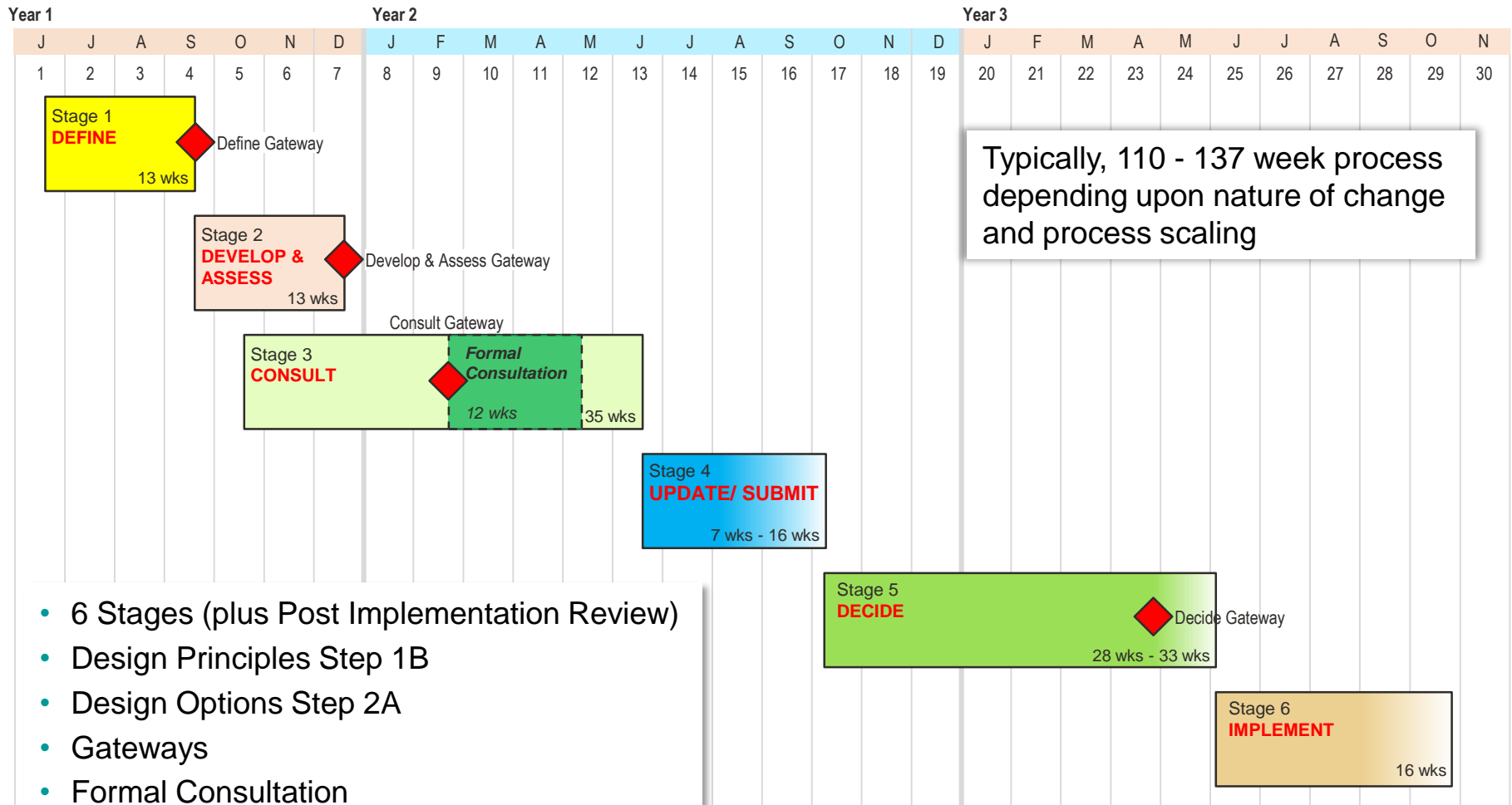
Stated Aim of CAP 1616:

- More transparency
- Greater engagement with stakeholders

Available on CAA website



Cap 1616 - Seven Stage Process



- 6 Stages (plus Post Implementation Review)
- Design Principles Step 1B
- Design Options Step 2A
- Gateways
- Formal Consultation



Cap 1616 - Level of Change

Assessment Meeting 24th January 2019 (end of Step 1A)

Minutes available on CAA portal

CAA anticipated this was a **Level 1** change

Level 1: High impact* changes to notified airspace design

A change that does have the potential to alter traffic patterns below 7,000 feet over a populated area

Level 2: Medium to low impact* changes to notified airspace design

A change that does not have the potential to alter traffic patterns below 7,000 feet over a populated area

The Government's Air Navigation Guidance states that below 7,000 feet is the maximum height at which noise is a priority for consideration

Level 1 confirmed at end of Step 2B

- **Develop and Assess Gateway**

Any specific comments on Level and scaling...?



Design Principles Development

Gatwick eager to ensure Design Principles and Options are developed through demonstrable two-way engagement with local communities

Questionnaires sent to:

- Local Authorities (Town, District, County Councils)
- Local Planning Authorities
- Local MPs
- Airlines
- General Aviation Community
- Airports
- Air Navigation Service Providers (ANSPs)
- National Air Traffic Management Advisory Committee (NATMAC)

Focus Groups



Constraints

Integration with FASI-S

Integration with other local airspace users

Safety

PANS OPS 8168 design constraints

Airway system entry points

Runway position

NPR constraint

Overflight constraints



Focus Group Conversation



Focus Group Facilitation

Your help is required to identify your key areas of concern

We recognise you may have strong opinions

Please allow others time to voice their opinions

We are eager to hear all your concerns & record them

Note-takers may ask for clarification or names

As a group you may have diverse opinions

As a group you may have conflicting opinions

We will record common areas of agreement or priorities



Please Tell Us Your Views

Urban Areas/ Open areas

Rural Areas

Technology & Innovation

Noise Exposure vs Emissions (CO₂)

Timing of over flights (day/night)

Flight Path Principle (“**Overflown**” is defined in CAP 1498)

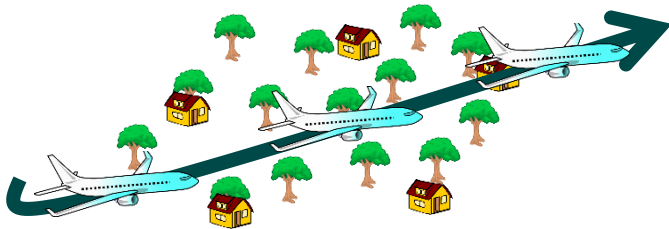
- Minimise the total number of people overflown
- Minimise the number of people newly overflown
- Share the routes over a wider area



Flight Path Preference - 1

PBN routes = Accuracy = Concentration

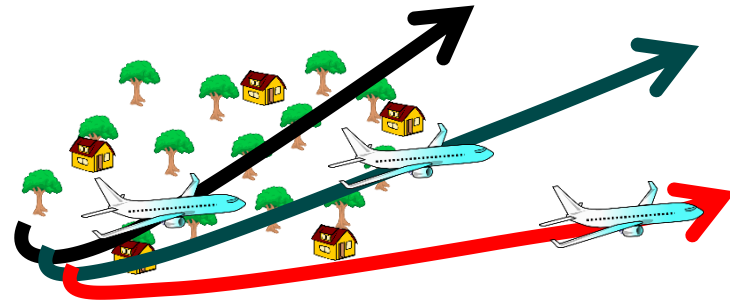
A Concentration



Aircraft follow the same route minimising the number of people exposed to aircraft noise

Potentially keeping the routes similar to current tracks, but minimising the numbers of new people exposed to noise

B Dispersion



Aircraft follow different routes sharing the noise exposure over more people, but less frequently in each location

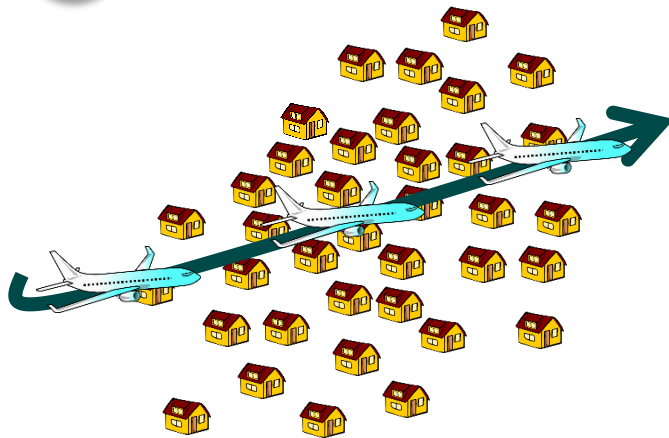
This would result in larger overall numbers of people being overflown



Flight Path Preference - 2

PBN routes = Accuracy = Concentration

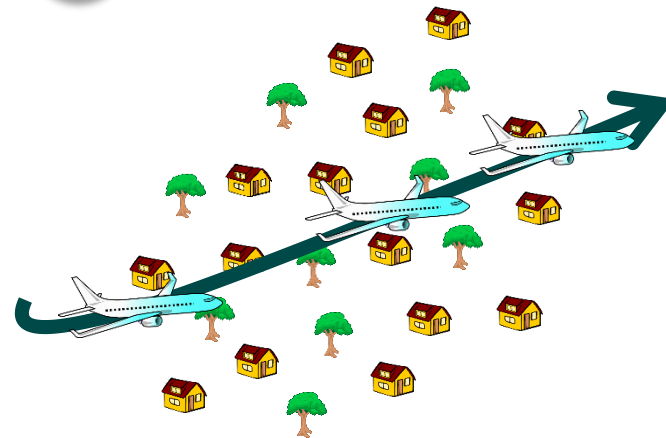
A Densely Populated



Urban Setting

More people overflow, but potential higher levels of general background noise

B Sparsely Populated



Rural Setting

Less people overflow, but potentially lower levels of general background noise



Flight Path Preference Urban Area -

3

Not all urban areas are equally populated. Should the route seek to overly commercial/residential areas and protect green space in urban areas?

A Densely Populated



Design routes over residential/ commercial areas avoiding parks and public open spaces

B Sparsely Populated



Design routes over parks and open spaces rather than residential/ commercial areas

Note: Ambient noise levels vary according to the location and time of day or night. In rural areas, ambient noise levels can be lower than in urban areas?



Flight Path Preference Noise vs Emissions -

4

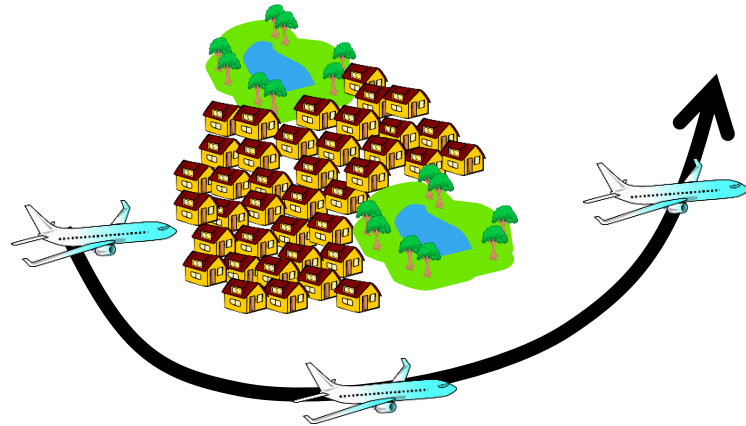
A Densely Populated



Design the most direct routes over areas exposing people to noise

This will **decrease** the track miles flown, fuel burnt and emissions

B Sparsely Populated



Design longer routes to avoid exposing people to noise

This will **increase** the track miles flown, the fuel burnt and emissions



Flight Path Considerations - Summary

Setting Type	Preference A	Preference B
Route Preference	Expose fewer people to noise more often	Expose more people to noise less frequently
Densely vs Sparsely Populated Areas	Urban – More people overflowed in areas with high background noise	Rural – Less people overflowed in areas with low background noise
Urban Areas	Routes over residential/ commercial avoiding parks & open spaces	Design routes over parks & open spaces avoiding residential/ commercial
Noise vs Emissions	Design direct routes exposing people to noise, but minimising other emissions	Design routes to avoid exposing people to noise, but increasing other emissions



Next Steps



Design Principles (Step 1B) Next Steps

Complete Focus Groups

Collate all questionnaire responses

Analyse all comments and questionnaire responses

Identify long list of Design Principles

Develop short list of Design Principles

Include rationale for selection/ rejection of individual principles

Test Design Principles with key stakeholders

Submit to CAA for publication on CAA Portal

CAA then conduct **Define Gateway Assessment**

Proceed to Stage 2, Step 2A Options Development

Consultation ~ December 2019



YOUR LONDON AIRPORT
Gatwick

Final comments or questions?

