LONDON GATWICK

POWERED BY VINCI AIRPORTS | GLOBAL INFRASTRUCTURE PARTNERS

Secretary of State for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

FAO: Transport Infrastructure Planning Unit

6 June 2025

Dear Sir / Madam

Application by Gatwick Airport Limited Seeking Development Consent for the Proposed Gatwick Airport Northern Runway Project (Ref: TR020005)

Applicant's response to Interested Parties' responses to the Secretary of State's letter dated 27 February 2025

We refer to the letter dated 27 February 2025 sent on behalf of the Secretary of State for Transport ("SoS") which sought comments from GAL and other parties on a number of matters, to be submitted on 24 April 2025.

GAL has two points to raise with the SoS in relation to the submissions made on 24 April, one in relation to the Applicant's own submissions on the noise envelope and the second in relation to submissions made by the bodies responsible for Protected/National Landscapes.

1. Publication of ERCD 2024 noise report for Gatwick Airport

In GAL's submission of 24 April, in Annex 1 relating to the SoS's proposed noise envelope, as part of the substantiation of our position on the appropriateness of our proposed 135km^2 initial daytime noise contour limit value (at Paragraph 3.6), we referenced data concerning fleet change at Gatwick Airport taken from the (then) forthcoming CAA ERCD Report 2502. This report is now published and publicly available on our website (ERCD REPORT 2502 - Noise Exposure Contours for Gatwick Airport 2024) and we also enclose a copy as an Annex to this letter to allow all interested parties to easily access it.

As previously explained, this CAA report, specifically the data at paragraph 2.28 showing the percentage of quieter Chapter 14 aircraft in the Gatwick fleet reducing from 69% in 2023 to 62% in 2024 (as shown in Figure 1 of Annex 1 in our 24 April submission) demonstrates that the ExA were incorrect in concluding that the speed of fleet change which would take place at Gatwick Airport would be as the Central Case rather than the Updated Central Case that GAL proposed. This incorrect assumption was used by the ExA

to support its proposal for a Requirement containing a 125km^2 initial daytime noise contour limit.

2. Responses from National/Protected Landscape bodies

The Applicant has noted the responses to the SoS's 'Minded To' letter which were submitted by the Protected/National Landscape bodies.

The letters from South Downs National Park Authority (SDNPA), Kent Downs National Landscape (KDNL) and Surrey Hills National Landscape (SHNL) are very similar and reflect the collaboration that has taken place between GAL and the bodies. GAL notes, however, that the letters assert that a joint fund of £750,000 is the minimum necessary size of a fund which must be required so that the SoS can conclude that her duty to "*seek to further*" the purpose of conserving and enhancing the protected landscapes has been satisfied. Unlike GAL, the bodies do not seek to substantiate their £750,000 figure by reference to specific projects or proposals.

GAL had anticipated in its own submission (see Section 2 of Annex 4 to GAL's submission of 24 April 2025) that the bodies would assert the need for a higher figure. The SoS is respectfully referred to the entirety of that Section and to paragraphs 2.29 onwards in particular, which address the sufficiency of the proposal put forward by GAL for a fund totalling £320,000.

Against that background, GAL's observations on the arguments advanced by the Protected/National Landscape bodies in their three letters for a larger fund are set out briefly below:

Bodies' argument that the fund awarded at Luton of £250,000 would not be sufficient here because:	**GAL Response**
The proposals at Gatwick will result in impacts over a much wider geographical area, impacting four Protected Landscapes.	It is not the case that the application proposals will generate noise impacts over a much larger area. The increment of air transport movements forecast at Luton as a result of its DCO is greater than that forecast at Gatwick – see GAL's 24 April submission, Annex 4, Section 2, paragraph 2.13.

	The relevance of the area impacted is addressed in Annex 4, Section 2 at paragraph 2.29.
There is a much higher volume of air traffic associated with Gatwick compared to Luton.	The issues in this case relate to the effects of the additional flights generated as a result of Gatwick's NRP application, not to the totality of Gatwick's operations. It is in the context of this DCO decision that the SoS must observe her duty. The 3 letters each recognise that it is appropriate to factor in that "*the harm may not be as significant* (here) *as identified from Luton*". The fact that potentially affected National Landscapes are divided into four in this case does not increase the level of harm arising from the application.

GAL also notes that the letters suggest that the National Landscape bodies would spend the fund on tranquillity and dark skies studies, with related education and public engagement. This is exactly the type of project that was identified and costed by SDNP (at £80,000) which informed GAL's proposal for a fund of £320,000 across the four National Landscapes (see Annex 4 paragraph 2.27). The letters vindicate the scale of the fund proposed by GAL, which GAL considers to be a more than proportionate response to the low or "minimal" levels of impact which neither the ExA nor Natural England considered required any mitigation at all.

The letter of 10 April 2025 from the High Weald National Landscape (HWNL) is different in emphasis. It states that it does not believe it is appropriate for the SoS to address the duty on her by relying upon 'measures' agreed (or otherwise) between the parties.[1]

Instead, HWNL asserts that the SoS must be satisfied that any harms are avoided / minimised before considering any compensatory measures.

The limited scale of harm to a small part of the HWNL is explained in GAL's Annex 4, including Appendix 1.[2]

HWNL suggest that the SoS should consider whether amendments to the proposal, "(*including any additional operational controls / conditions*)" would help minimise / mitigate any harm.

HWNL does not suggest what these additional controls might be, nor does it engage with the evidence submitted to and debated through the examination about the extent and sufficiency of existing and proposed noise management controls at Gatwick. These are perhaps most easily summarised in GAL's closing submissions [REP9-112] (see paragraphs 11.5.24-42), which included reference to Item 6 of the Applicant's response to the Procedural Decision issued on 1 December 2023 [AS-115]. Through that Procedural Decision the ExA had sought to satisfy itself on the sufficiency of the noise management regime at Gatwick. The closing submission summarises the existing noise controls for Gatwick Airport. Those paragraphs describe a comprehensive regime of control which has been effective over the years in helping to achieve a progressive reduction in Gatwick's noise footprint. Those paragraphs include an explanation of the duty that falls on the SoS to regulate the noise impacts of the airport and how that duty has been effectively exercised.

Additional controls are proposed, of course, through this DCO, including a cap on aircraft movements, a noise envelope and a detailed regime of receptor-based noise mitigation measures. Without any specific additional proposal from HWNL, it is not possible or appropriate to conclude that the relevant regimes to regulate noise at Gatwick are not already effective and consistent with both policy and the legal duties which fall on the government.

For the reasons set out here and in Annex 4, the SoS can be satisfied that the duty which falls on her in relation to National Landscapes would be observed in granting the DCO, and particularly (if the SoS deems it absolutely necessary) with the inclusion of the additional requirement proposed by GAL.

---

[1] HWNL wrongly assert that the duty is for the SoS "*to further the purpose*", rather than to "*seek to further*". The distinction is important, not least for the reasons set out GAL's Annex 4 paragraphs 2.14-2.16. The duty does not require the SoS to find that the application has enhanced the protected landscapes.

[2] The plans in Annex 4 Appendix 1 show how the LOAEL contours engage the outer edge of the HWNL. Note that Annex 4 paragraph 2.29.3 incorrectly describes this as "the outer fringes of KDNL" but should have read "the outer fringes of the HWNL", as shown clearly on the plans in Appendix 1.

Your sincerely

[redacted]

[redacted]
Chief Planning Officer
London Gatwick

LONDON GATWICK

POWERED BY VINCI AIRPORTS | GLOBAL INFRASTRUCTURE PARTNERS

ANNEX :

CAA ERCD REPORT 2502

Environmental Research and Consultancy Department

Noise Exposure Contours for Gatwick Airport 2024

ERCD REPORT 2502

Published by the Civil Aviation Authority, 2025
Aviation House, Beehive Ring Road, Crawley, West Sussex, RH6 0YR

Enquiries regarding the content of this publication should be addressed to: Environmental Research and Consultancy Department, Civil Aviation Authority, 5th Floor, 11 Westferry Circus, London E14 4HE

Contents

Summary

1. This report presents the 2024 average summer day and night noise exposure contours generated for London Gatwick Airport. The contours in 2024 reflect the return of air traffic during the summer period to largely pre-COVID-19 levels (95% of 2019 levels for daytime, and 96% for night-time).

2. The noise modelling used radar and noise data from Gatwick's Noise and Track Keeping (NTK) system. Mean flight tracks and lateral dispersions for each route, and average flight profiles of aircraft height, speed and thrust for each aircraft type, were calculated using these data. These model updates are undertaken every year to ensure the contours are fully representative of current operations.

3. Average daily movements for the 2024 summer 16-hour day period were 730.8, 2%[1] higher than the previous year (2023: 714.8). There were on average 121.3 movements per 8-hour night, a decrease of 3% from 2023 (124.5).

4. The area of the 2024 summer day actual modal split (78% W / 22% E) 51 dB $L_{Aeq,16h}$ contour increased by 1% to 114.2 km^2 (2023: 112.8 km^2). The population count within this contour increased by 7% to 17,500 (2023: 16,300).

5. The area of the 2024 summer night actual modal split (78% W / 22% E) 45 dB $L_{Aeq,8h}$ contour was 124.6 km^2, a decrease of 3% from the previous year (2023: 128.1 km^2). The contour enclosed a population of 17,500, which was 1% higher than in 2023 (17,300).

6. The area of the 2024 summer day standard modal split (75% W / 25% E) 51 dB $L_{Aeq,16h}$ contour increased by 2% to 113.8 km^2 (2023: 111.7 km^2). The population count within this contour of 17,600 was 7% higher than the previous year (2023: 16,400).

7. The increase in 51 dB $L_{Aeq,16h}$ standard modal split area of 2.1 km^2 can be broken down approximately as follows:

   - +1.0 km^2 due to changes in movement numbers and fleet mix.
   - +1.1 km^2 due to flight profile and noise updates (based on 2024 radar data analysis and noise measurements).

8. The 2024 summer night 45 dB $L_{Aeq,8h}$ contour area assuming the 10-year average runway modal split (73% W / 27% E) fell by 2% to 125.1 km^2 (2023: 128.3 km^2), enclosing a population of 17,300 (2023: 17,100), a 1% increase.

[1] The percentage traffic changes given in this report are based on unrounded movement numbers.

9. The area of the 2024 average summer day actual modal split (78% W / 22% E) N65 20-event contour was 122.3 km^2 (2023: 121.8 km^2) and the contour enclosed a population of 16,800 (2023: 14,800). Assuming the standard modal split (75% W / 25% E), the N65 20-event area was 129.8 km^2 (2023: 135.9 km^2) and the population count was 19,100 (2023: 18,800).

10. The area of the 2024 average summer night actual modal split (78% W / 22% E) N60 10-event contour was 185.8 km^2 (2023: 215.4 km^2) and the contour enclosed a population of 21,800 (2023: 25,500). Assuming the 10-year average modal split (73% W / 27% E), the N60 10-event contour area was 185.6 km^2 (2023: 212.6 km^2), enclosing a population of 24,300 (2023: 28,700).

Chapter 1

Introduction

Background

1.1 Each year the Environmental Research and Consultancy Department (ERCD) of the Civil Aviation Authority (CAA) calculates the noise exposure around London Gatwick Airport. Up until 2015, this work was carried out on behalf of the Department for Transport (DfT). Since the 2016 study, ERCD has been commissioned directly by Gatwick Airport Ltd (GAL).

1.2 The UK civil aircraft noise model ANCON, validated with noise measurements, is used to estimate the noise exposure. The model calculates the emission and propagation of noise from arriving and departing air traffic.

1.3 The primary noise exposure metric used is the Equivalent Continuous Sound Level (L_{Aeq}), and in particular $L_{Aeq,16h}$ (07:00-23:00 local time), which is calculated over the 92-day summer period from 16 June to 15 September inclusive. The background to the use of this index is explained in DORA Report 9023 (**Ref 1**).

1.4 Noise exposure is depicted in the form of noise contours, i.e. lines joining places of constant L_{Aeq}, akin to the height contours shown on geographical maps or isobars on a weather chart. Historically in the UK, $L_{Aeq,16h}$ noise contours have been plotted at levels from 57 to 72 dB, in 3 dB steps. However, the Survey of Noise Attitudes, SoNA 2014 (**Ref 2**) found that the degree of annoyance (based on the percentage of respondents highly annoyed) previously occurring at 57 dB, occurs at 54 dB. The $L_{Aeq,16h}$ contours have therefore been plotted down to the lower level of 54 dB since 2016. At the airport's request, the $L_{Aeq,16h}$ contours since 2022 have been plotted from 51 dB, this being defined in Government's Airspace and Noise Policy (**Ref 3**) as the daytime Lowest Observed Adverse Effect Level (LOAEL).

1.5 Following the publication of the Aviation Policy Framework in March 2013 (**Ref 4**), night-time (23:00-07:00 local time) $L_{Aeq,8h}$ noise contours have been produced on an annual basis for the designated[2] airports. Night-time $L_{Aeq,8h}$ contours have been calculated for Gatwick from 48 to 72 dB at 3 dB intervals in accordance with standard practice. Average summer night $L_{Aeq,8h}$ contours for Gatwick were first calculated for 2013. At the airport's request, the $L_{Aeq,8h}$

[2] Heathrow, Gatwick and Stansted airports have been designated for the purpose of avoiding, limiting or mitigating the effect of noise from aircraft since 1971. The Secretary of State's powers to designate airports in England and Wales, and to set noise controls, are contained within Section 78 of the Civil Aviation Act 1982. These powers are devolved in Scotland and Northern Ireland.

contours since 2022 have been plotted from the 45 dB level, this being defined in Government's Airspace and Noise Policy (**Ref 3**) as the night-time LOAEL.

1.6 Day and night contours using the supplementary noise metrics N65 16-hour and N60 8-hour respectively have also been produced. N65 and N60 contours indicate the number of aircraft noise events exceeding a maximum sound level (L_{Amax}) of 65 and 60 dB respectively at a given location.

1.7 The objectives of this report are to explain the noise modelling methodology used to produce the 2024 contours for Gatwick Airport, to present the calculated noise contours and to assess the changes from the previous year (**Ref 5**). Long-term trends are also examined.

Gatwick Airport

1.8 Gatwick Airport is located approximately 28 miles (45 km) south of London and about 2 miles (3 km) north of Crawley. Aside from the nearby towns of Crawley and Horley it is situated in mostly lightly populated countryside (**Figure B1** of **Appendix B**).

1.9 Gatwick Airport has one main runway, designated 08R/26L, which is 3,316 m long. The Runway 26L landing threshold is displaced by 424 m, and the Runway 08R landing threshold displaced by 393 m.[3] There is also one standby runway (08L/26R) that is used when the main runway is out of operation, for example, due to maintenance work[4]. There are two passenger terminals. The layout of the runways, taxiways and passenger terminals is shown in **Figure B2**.[5]

1.10 In the 2024 calendar year there were approximately 265,000 aircraft movements at Gatwick (2023: 257,000) and the airport handled 42.8 million passengers (2023: 40.9 million).[6]

[3] The runway threshold marks the beginning of the runway available for landing aircraft. A *displaced* threshold is a runway threshold that is not located at the physical end of the runway. A displaced threshold is often employed to give arriving aircraft sufficient clearance over an obstacle.

[4] The main runway was last resurfaced in 2022.

[5] NATS UK AIP, AD 2.EGKK-2-1

[6] Source: Civil Aviation Authority (https://www.caa.co.uk/airportstatistics)

Chapter 2

Noise modelling methodology

ANCON model

2.1 Noise contours were calculated with the UK civil aircraft noise model ANCON (version 2.4), which is developed and maintained by ERCD on behalf of the DfT. A technical description of ANCON is provided in R&D Report 9842 (**Ref 6**). The ANCON model is also used to produce annual contours for Heathrow and Stansted airports, and a number of other UK airports.

2.2 ANCON is fully compliant with the latest European guidance on noise modelling, ECAC.CEAC Doc 29 (Fourth edition), published in December 2016 (**Ref 7**). This guidance document represents internationally agreed best practice as implemented in modern aircraft noise models. The Fourth edition introduced some minor changes to the modelling of start-of-roll noise, which were incorporated in the 2017 software update to ANCON (version 2.4).

2.3 The Gatwick modelling inputs are updated every year. The radar and noise monitoring data for the specific reporting period form the basis of the mean flight tracks, flight profiles and noise database.

Radar data

2.4 The noise modelling carried out by ERCD made extensive use of radar data extracted from Gatwick Airport's Noise and Track Keeping (NTK) system. The current ANOMS NTK system was installed in April 2019, replacing the previous Casper Noise NTK system. A study of the flight path information from the new ANOMS system confirmed that it continues to provide reliable flight data for the types of studies carried out by ERCD (**Ref 8**).

2.5 Most large airports have NTK systems, which take data from Air Traffic Control (ATC) radars and combine them with flight information such as call sign, aircraft registration, aircraft type and destination. Analyses of departure and arrival flight tracks and profiles were based on summer 2024 radar data.

Flight tracks

2.6 Aircraft departing Gatwick are required to follow specific flight paths called Noise Preferential Routes (NPRs) unless directed otherwise by ATC. NPRs were designed to avoid the overflight of built-up areas where possible. They establish a path from the take-off runway to the main UK air traffic routes and form the first

part of the Standard Instrument Departure (SID) routes. The Gatwick NPR/SID routes are illustrated in **Figure B3**.

2.7 Associated with each NPR is a lateral swathe, which is defined by a pair of lines that diverge at 10 degrees from a point 2,000 m from start-of-roll, leading to a corridor extending 1.5 km either side of the nominal NPR centreline. Within this swathe the aircraft are considered to be flying on-track. The swathe takes account of various factors that affect track-keeping, including tolerances in navigational equipment, type and weight of aircraft, and weather conditions – particularly winds that may cause drifting when aircraft are turning. Aircraft reaching an altitude of 3,000 or 4,000 ft (depending on the route) at any point along an NPR may be turned off the route by ATC onto more direct headings to their destinations – a practice known as 'vectoring'. ATC may also vector aircraft from NPRs below this altitude for safety reasons, to avoid storms for example.

2.8 Mean flight tracks were modelled with in-house software using 24-hour radar data extracted from the Gatwick NTK system over the 92-day summer period, 16 June to 15 September inclusive. Mean departure flight tracks and associated lateral dispersions for each NPR/SID, and arrival tracks for Runways 08R and 26L using evenly spaced 'spurs' about the extended runway centrelines, were calculated. Since 2021, separate sets of mean tracks have been produced for the day and night periods.

2.9 Operations on the standby runway were modelled for the night contours only, as daytime usage was insignificant. At night, around 17% of arrivals used the standby runway, so arrival 'spur' tracks were also generated for this runway.

2.10 **Figure B4** shows a 24-hour sample of radar flight tracks from 12 August 2024.

2.11 Based on a visual inspection of the radar flight tracks for summer 2024, the majority of arriving aircraft during the daytime period joined the runway centrelines at distances between 11 and 35 km (5.9 and 18.9 nm) from threshold for Runway 26L, and between 12 and 29 km (6.5 and 15.7 nm) from threshold for Runway 08R. In the night-time period, most arrivals joined between 12 and 37 km (6.5 and 20.0 nm) for Runway 26L, and between 13 and 30 km (7.0 and 16.2 nm) for Runway 08R.

Flight profiles

2.12 For each ANCON type, average flight profiles of height, speed and thrust versus track distance (for departures and arrivals separately) were reviewed and updated where necessary, using 2024 summer radar data. The engine power settings required for the aircraft to follow the average height and speed profiles were calculated from data describing aircraft performance characteristics within each of the different aircraft type categories.

2.13 The application of reverse thrust following touchdown was modelled for all ANCON types where applicable. Reverse thrust was included in both the day and night contours.

Noise emissions

2.14 At Gatwick, the NTK system captures data from both fixed and mobile noise monitors around the airport. Noise event data for individual aircraft operations were matched to operational data provided by the airport. The Gatwick NTK system employs 5 fixed monitors positioned approximately 6.5 km from start-of-roll, together with an array of mobile monitors that can be deployed anywhere within the NTK radar coverage area.[7]

2.15 The noise data collected were screened by ERCD with reference to several criteria so that only reliable data were used in the analysis.

- Noise data that fell outside a 'weather window' were discarded. This ensured that the data used were not affected by adverse meteorological conditions such as precipitation and strong winds[8].
- The maximum noise level of the aircraft event had to exceed the noise monitor threshold by at least 10 dB to avoid underestimates of the Sound Exposure Level (SEL).
- Only measurements obtained from aircraft operations that passed through a 60-degree inverted cone, centred at the noise monitor, were retained in order to minimise the effects of lateral attenuation and lateral directivity.[9]
- At a given noise monitor location, flight operations with valid noise measurements had to account for at least 75% of total overflights. This ensured that the resulting average noise level was not biased higher than the true average noise level due to missing measurements for quieter flights.

2.16 The ANCON model calculates aircraft noise using a noise database expressing SEL as a function of engine power setting and slant distance to the receiver – also known as the 'Noise-Power-Distance' (NPD) relationship. The ANCON noise database is continually reviewed and updated with adjustments made annually when measurements show this to be necessary.

[7] Further information on the noise monitors can be found in CAP 1149 (**Ref 9**).

[8] Wind speeds above 10 m/s, in accordance with ISO 20906 (**Ref 10**).

[9] *Lateral attenuation* is the excess sound attenuation caused by the ground surface, which can be significant at low angles of elevation. *Lateral directivity* is the non-uniform directionality of sound radiated laterally about the roll axis of the aircraft – this is influenced to a large extent by the positioning of the engines.

2.17 Starting from 2023, the previous EA320NEO type has now been split into the CFM LEAP-1A (EA320NC) and PW1100G (EA320NP) engine variants. Similarly, the EA321NEO has now been split into the EA321NC and EA321NP.

2.18 The significant SEL noise database updates for noise dominant types following noise measurements undertaken in 2024 were as follows:

- **B772R** – on departure, up to 0.5 dB quieter beyond about 9 km from start-of-roll.

2.19 Validation of L_{Amax} levels, which are the basis of the N65 and N60 contours (but not the L_{Aeq} contours), was also carried out. The significant L_{Amax} noise database updates for noise dominant types following noise measurements undertaken in 2024 were as follows:

- **B772R** – on departure, up to 1 dB quieter beyond about 8 km from start-of-roll.
- **EA319C** – on arrival, up to 0.5 dB quieter beyond about 9 km from threshold.
- **EA320C** – on arrival, up to 0.5 dB quieter beyond about 12 km from threshold.
- **EA320V** – on arrival, up to 1.5 dB quieter beyond about 6 km from threshold.
- **EA320NC** - on arrival, up to 0.5 dB quieter beyond about 9 km from threshold.
- **EA321NC** – on departure, up to 1.5 dB quieter beyond 10 km from start-of-roll. On arrival, up to 0.5 dB quieter beyond about 9 km from threshold.

Daytime traffic distributions by Noise Class

2.20 The L_{Aeq} contours were based on the daily average movements that took place during the 16-hour day (07:00-23:00 local time) and 8-hour night (23:00-07:00 local time), over the 92-day summer period from 16 June to 15 September inclusive. The source of this information was the Gatwick NTK system, which stores radar data supplemented by daily flight plans. Traffic statistics from NTK data were cross-checked with runway logs supplied by NATS[10] and close agreement was found.

2.21 The average number of daily movements at Gatwick over the 2024 summer day period was 730.8, 2% higher than the previous year (2023: 714.8) and 95% of 2019 pre-pandemic levels (765.7).

2.22 **Table C1** of **Appendix C** lists the average summer day movements by aircraft 'Noise Classes' (A to E), which are ranked in ascending order of noise emission, i.e. from least to most noisy. Starting from 2019, Noise Class C, D and E have been subdivided into 3rd and 4th generation subclasses (denoted 'C3' and 'C4' etc), with the 4th generation subclass covering the more modern, quieter aircraft as follows:

- Noise Class C4 = B738MAX, B739MAX, EA221, EA223, EA320NEO[11], EA321NEO[12]
- Noise Class D4 = B789, B7810, EA33NEO, EA359, EA3510
- Noise Class E4 = EA38GP, EA38R

2.23 In 2024, 88% of movements were within Noise Class C3/C4 (i.e. narrow-body ICAO Chapter 3/4 jet aircraft[13]), which was 3% lower than in 2023. The proportion of Noise Class C3 movements reduced from 72% in 2023 to 67% in 2024, but Noise Class C4 movements increased to 21% in 2024 from 18% in 2023.

2.24 Wide-body twin-engine aircraft (Noise Class D3/D4) represented 9% of total movements in 2024, 2% more than in 2023. The Noise Class D3 percentage was

[10] NATS is the provider of air traffic control services to Gatwick Airport.

[11] Includes EA320NC and EA320NP.

[12] Includes EA321NC and EA321NP.

[13] Aircraft certification noise levels are classified by the ICAO *Standards and Recommended Practices – Aircraft Noise: Annex 16 to the Convention on International Civil Aviation* into 'Chapter 3', 'Chapter 4' and 'Chapter 14' types. The Chapter 4 standard (applicable from 2006) is more stringent than the Chapter 3 standard (1977) and typically characterised by modern, quieter, high-bypass turbofan aircraft. The latest Chapter 14 standard is applicable to new large aircraft types presented for certification from 31 December 2017 and it represents a further level of stringency compared to the Chapter 4 standard.

1% higher in 2024 at 4%. Noise Class D4 comprised 4% of total movements, the same as 2023.

2.25 Wide-body 4-engine aircraft (Noise Class E3/E4) made up 1% of total movements in 2024, the same as 2023.

2.26 Movements by small and large propeller aircraft (Noise Classes A and B) represented less than 0.1%, and 3% of the total respectively.

2.27 There were no movements in Noise Classes F, G and H, which represent the oldest and noisiest aircraft types that no longer operate at Gatwick.

2.28 It is estimated that almost 100% of aircraft movements in the 2024 summer day period were compliant with the ICAO Chapter 4 noise standard. In addition, it is estimated that around 62%[14] of the aircraft movements during the 2024 summer day met the latest ICAO Chapter 14 noise standard (2023: 69%).

2.29 **Figure B5** illustrates the changing distribution of traffic among the 8 Noise Classes over the summer day period from 1988 to 2024 inclusive. The shift over the years to increasingly higher proportions of narrow-body jet aircraft (i.e. Noise Class C) can be clearly seen.

Night-time traffic distributions by Noise Class

2.30 The average number of movements over the 2024 summer night period was 121.3, a 3% decrease from the previous year (2023: 124.5), and 4% lower than 2019 levels (126.6). Night departures decreased by 3%, and night arrivals, which accounted for 68% of total summer night movements in 2024, also decreased by 3%.

2.31 **Table C2** lists the average summer night movements by aircraft Noise Class, ranked in ascending order of noise emission. Additional subclasses were introduced from 2019 for Noise Class C, D and E (see section 2.22).

2.32 Narrow-body jet aircraft (Noise Classes C3/C4) were responsible for 89% of movements at night in 2024, 4% less than in 2023. Noise Class C3 accounted for 60% of total night movements, a reduction from 71% in 2023, whilst Noise Class C4 made up 29% of total night movements, a 7% rise from 2023.

2.33 Wide-body twin-engine aircraft (Noise Classes D3/D4) accounted for 12% of movements, 5% more than in 2023. Noise Class D3 comprised 4% of total

[14] These percentage figures should only be treated as an estimate because in many cases, detailed aircraft information (e.g. aircraft weight, engine modifications) were not readily available, so assumptions had to be made.

movements, 1% more than in 2023. Noise Class D4 made up 8% of total movements, 5% more than 2023.

2.34 Wide-body 4-engine aircraft movements (Noise Classes E3/E4) at night comprised 0.1% of the total (2023: 0.2%).

2.35 There were insignificant numbers of large propeller aircraft movements (Noise Class B) and no movements within Noise Classes A, F, G and H.

2.36 It is estimated that almost 100% of aircraft in the 2024 summer night period were compliant with the ICAO Chapter 4 noise standard. It is also estimated that approximately 65% of aircraft movements at night met the ICAO Chapter 14 noise standard (2023: 73%).

Daytime traffic distributions by ANCON type

2.37 A breakdown of the 2024 average summer day movements by ANCON type is provided in **Table C3**. The largest daily increases in movements were for the ANCON types LTT (+9.8), EA321NP (+9.4) and B738MAX (+5.2) (note: descriptions of all the ANCON types can be found in **Table D1** of **Appendix D**). The largest decreases were for the EA319C (-15.0) and EA320V (-7.6).

2.38 The Airbus A320[15] and A320neo[16] aircraft families together accounted for 73% of total daytime movements in 2024.

2.39 **Figure B6** illustrates the movements by ANCON type for the 2024 average summer day. The most frequent ANCON types were the EA320C (164.8 movements), EA319C (148.7), B738 (73.5) and EA320V (59.1).

2.40 The noise dominant ANCON types on departure were, in descending order, the EA320C, EA319C and B738. For arrivals, the noise dominant ANCON types were also the EA320C, EA319C and B738. They were responsible for the highest contributions of ‘noise energy’, which is a function of both aircraft noise level and movement numbers.

Night-time traffic distributions by ANCON type

2.41 A breakdown of the 2024 average summer night movements by ANCON type is provided in **Table C4**. The largest night-time movement increases were for the EA320NC (+4.2) and EA359 (+2.8). The largest movement decreases were for the EA319C (-8.6) and EA320V (-5.8).

[15] A319/A320/A321 (there were no A318 movements in the 2024 summer day period)

[16] A320neo/A321neo (there were no A319neo movements in the 2024 summer day period)

2.42 **Figure B7** illustrates the numbers of movements by ANCON aircraft type for the 2024 average summer night. The most frequent types were the EA320C (29.7), EA319C (19.8) and EA320NC (13.3).

2.43 The noise dominant ANCON types on departure in descending order were the EA320C, EA319C and B738. For arrivals, the noise dominant types were the EA320C, EA319C, EA320NC and EA321NC. They were responsible for the highest contributions of 'noise energy', which is a function of both aircraft noise level and movement numbers.

Daytime traffic distributions by NPR/SID route

2.44 **Figure B8** shows the percentage distribution of aircraft departures by NPR/SID route for the 2024 average summer day period, with distribution figures from 2023 for comparison. Route loadings were influenced by the shift to a lower proportion of westerly operations in 2024 (78%) compared to 2023 (82%).

2.45 The 'wrap-around' route 26LAM (Route 4) had the highest loading of departure traffic in 2024 (34%), a 1% decrease from the previous year. The other most heavily-loaded routes were 26SAM (Route 1) and 26BOG (Route 7), both with 22% of total departures. Each of the easterly routes saw a 1% increase in loading for 2024.

Night-time traffic distributions by NPR/SID route

2.46 **Figure B9** shows the percentage distribution of aircraft departures by NPR/SID route for the 2024 average summer night period, with distribution figures from 2023 for comparison. As for daytime, route loadings were influenced by the shift to a lower proportion of westerly operations in 2024 (77%) compared to 2023 (83%).

2.47 The 'wrap-around' route 26LAM (Route 4) had the highest loading of departure traffic in 2024 (33%), which was a decrease of 5% from the previous year. The other most heavily-loaded routes were 26BOG (Route 7) and 26SAM (Route 1), with 21% and 15% of total departures respectively.

2.48 The highest loadings on the easterly routes were for 08CLN (Route 5) and 08SFD (Route 2), with 10% and 8% respectively. These loadings were both 3% higher than in 2023.

Runway modal splits

2.49 In general, aircraft will take-off and land into a headwind to maximise lift during take-off and landing. The wind direction, which varies over the course of a year, will therefore have an important influence on the usage of runways. The ratio of westerly (i.e. Runway 26L) and easterly (i.e. Runway 08R) operations is referred to as the runway modal split.

2.50 Two sets of contours have been produced for the 2024 summer day:

(a) Using the 'actual' modal split over the $L_{Aeq,16h}$ day period; and

(b) Assuming the 'standard' modal split over the $L_{Aeq,16h}$ day period, i.e. the long-term modal split calculated from the 20-year rolling average. For 2024, this is the 20-year period from 2005 to 2024. Use of the standard modal split enables year-on-year comparisons without the runway usage significantly affecting the contour shape.

2.51 The actual and standard daytime west / east (W / E) percentage modal splits for 2024 and 2023 are summarised in **Table 1**. The daytime actual modal split in 2024 (78% west / 22% east) had a 4% lower percentage of westerly operations compared to 2023. The 2024 standard modal split was 75% west / 25% east, the same as 2023. Historical runway modal splits at Gatwick for the past 20 years are summarised in **Figure B10**.

Table 1 Gatwick summer day runway modal splits

Year	Actual (W / E percentage)	Standard (W / E percentage)
2024	78 / 22	75 / 25
2023	82 / 18	75 / 25

2.52 The actual and 10-year average night-time modal splits for 2024 and 2023 are summarised in **Table 2**. The night-time actual runway modal split for the 2024 summer period was 78% west / 22% east. The percentage of westerly operations was 3% lower compared to 2023. The summer night 10-year (2015-2024) average modal split was 73% west / 27% east (2023: 71% west / 29% east).

Table 2 Gatwick summer night runway modal splits

Year	Actual (W / E percentage)	10-year average (W / E percentage)
2024	78 / 22	73 / 27
2023	81 / 19	71 / 29

Topography

2.53 The topography around Gatwick Airport was modelled by accounting for terrain height. This was achieved by geometrical corrections for source-receiver distance and elevation angles. Other, more complex effects, such as lateral attenuation from uneven ground surfaces and noise screening/reflection effects due to topographical features, were not taken into account.

2.54 OS terrain height data on a 50-metre grid were used to determine the heights at each of the calculation points on the receiver grid used by the ANCON noise model. The terrain heights in the vicinity of Gatwick Airport are shown in **Figure B11**.

Population and 'Points of Interest' databases

2.55 Estimates were made of the numbers of people and households enclosed within the noise contours. The population data used in this report for the summer contours are a 2024 update of the 2021 Census supplied by CACI Limited.

2.56 The CACI population database contains data referenced at postcode level. Population and household numbers for each postcode are assigned to a single coordinate located at the postcode's centroid. The postcode data points and associated population counts for the area around Gatwick Airport are illustrated in **Figure B12**.

2.57 Within the extent of the 2024 average summer day standard 51 dB $L_{Aeq,16h}$ contour, the population count using the 2024 population database (updated from the 2021 Census) was 4% higher than with the 2023 database (updated from the 2021 Census). The population change provides an indication of the effects of population changes in the vicinity of the airport on the results presented in Chapter 3.

2.58 Estimates have also been made of the numbers of noise sensitive buildings situated within the contours, using the PointX 'Points of Interest' (2024) database. For this study, the noise sensitive buildings that have been considered are community buildings, hospitals, schools (including nurseries) and places of worship.

Chapter 3
Results

2024 summer day actual $L_{Aeq,16h}$ contours

3.1 The Gatwick 2024 summer day $L_{Aeq,16h}$ noise contours generated with the actual runway modal split (78% W / 22% E) are shown in **Figure B13**. The contours are plotted from 51 to 72 dB at 3 dB intervals.

3.2 Cumulative estimates of the areas, populations and households within the 2024 summer day actual contours are provided in **Table 3**.

Table 3 Gatwick 2024 summer day actual $L_{Aeq,16h}$ contours – area, population and household estimates

$L_{Aeq,16h}$ (dB)	Area (km^2)	Population	Households
> 51	114.2	17,500	7,000
> 54	60.0	7,300	2,900
> 57	33.0	1,900	800
> 60	18.6	1,100	400
> 63	10.0	300	100
> 66	5.2	100	< 100
> 69	2.5	< 100	0
> 72	1.4	0	0

Note: Populations and households are given to the nearest 100. The population count within the 69 dB contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.3 The 2024 summer day actual 51 dB $L_{Aeq,16h}$ contour enclosed an area of 114.2 km^2 and a population of 17,500.

3.4 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer day actual $L_{Aeq,16h}$ contours are provided in **Table 4**.

Table 4 Gatwick 2024 summer day actual $L_{Aeq,16h}$ contours – noise sensitive building estimates

$L_{Aeq,16h}$ (dB)	Community buildings	Hospitals	Schools	Places of worship
> 51	9	1	24	17
> 54	2	0	16	10
> 57	1	0	4	3
> 60	0	0	1	3
> 63	0	0	1	3
> 66	0	0	0	1
> 69	0	0	0	0
> 72	0	0	0	0

2024 summer night actual $L_{Aeq,8h}$ contours

3.5 The Gatwick 2024 summer night $L_{Aeq,8h}$ noise contours generated with the actual runway modal split (78% W / 22% E) are shown in **Figure B14**. The contours are plotted from 45 to 63 dB at 3 dB intervals (note: the 66, 69 and 72 dB contours have been omitted for clarity).

3.6 Cumulative estimates of the areas, populations and households within the 2024 summer night actual $L_{Aeq,8h}$ contours are provided in **Table 5**.

Table 5 Gatwick 2024 summer night actual $L_{Aeq,8h}$ contours – area, population and household estimates

$L_{Aeq,8h}$ (dB)	Area (km^2)	Population	Households
> 45	124.6	17,500	7,000
> 48	71.6	8,800	3,500
> 51	36.4	4,700	1,800
> 54	19.9	1,200	500
> 57	10.9	500	200
> 60	5.7	100	< 100
> 63	2.8	100	< 100
> 66	1.6	0	0
> 69	1.0	0	0
> 72	0.5	0	0

Note: Populations and households are given to the nearest 100.

3.7 The 2024 summer night actual 45 dB $L_{Aeq,8h}$ contour enclosed an area of 124.6 km^2 and a population of 17,500.

3.8 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer night actual $L_{Aeq,8h}$ contours are provided in **Table 6**.

Table 6 Gatwick 2024 summer night actual $L_{Aeq,8h}$ contours – noise sensitive building estimates

$L_{Aeq,8h}$ (dB)	Community buildings	Hospitals	Schools	Places of worship
> 45	8	1	25	17
> 48	3	1	16	10
> 51	2	0	10	7
> 54	1	0	1	3
> 57	0	0	1	2
> 60	0	0	0	2
> 63	0	0	0	1
> 66	0	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2024 summary day standard $L_{Aeq,16h}$ contours

3.9 The Gatwick 2024 summer day $L_{Aeq,16h}$ noise contours generated with the standard runway modal split (75% W / 25% E) are shown in **Figure B15**. The contours are plotted from 51 to 72 dB at 3 dB intervals.

3.10 Cumulative estimates of the areas, populations and households within the 2024 summer day standard $L_{Aeq,16h}$ contours are provided in **Table 7**.

Table 7 Gatwick 2024 summer day standard $L_{Aeq,16h}$ contours – area, population and household estimates

$L_{Aeq,16h}$ (dB)	Area (km^2)	Population	Households
> 51	113.8	17,600	7,000
> 54	59.9	7,200	2,900
> 57	33.0	1,900	800
> 60	18.6	1,100	400
> 63	10.0	300	100
> 66	5.1	100	< 100
> 69	2.5	< 100	0
> 72	1.4	0	0

Note: Populations and households are given to the nearest 100. The population count within the 69 dB contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.11 The 2024 summer day standard 51 dB $L_{Aeq,16h}$ contour enclosed an area of 113.8 km^2 and a population of 17,600.

3.12 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer day standard $L_{Aeq,16h}$ contours are provided in **Table 8**.

Table 8 Gatwick 2024 summer day standard $L_{Aeq,16h}$ contours – noise sensitive building estimates

$L_{Aeq,16h}$ (dB)	Community buildings	Hospitals	Schools	Places of worship
> 51	8	1	23	17
> 54	2	0	14	10
> 57	1	0	4	3
> 60	0	0	1	3
> 63	0	0	1	3
> 66	0	0	0	1
> 69	0	0	0	0
> 72	0	0	0	0

2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours

3.13 The Gatwick 2024 summer night $L_{Aeq,8h}$ noise contours generated with the 10-year average (2015-2024) summer night period runway modal split (73% W / 27% E) are shown in **Figure B16**. The contours are plotted from 45 to 63 dB at 3 dB intervals (note: the 66, 69 and 72 dB contours have been omitted for clarity).

3.14 Cumulative estimates of the areas, populations and households within the 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours are provided in **Table 9**.

Table 9 Gatwick 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours – area, population and household estimates

$L_{Aeq,8h}$ (dB)	Area (km^2)	Population	Households
> 45	125.1	17,300	6,900
> 48	71.4	8,600	3,400
> 51	36.1	4,400	1,700
> 54	19.9	1,100	500
> 57	10.9	500	200
> 60	5.7	100	< 100
> 63	2.8	100	< 100
> 66	1.6	0	0
> 69	0.9	0	0
> 72	0.5	0	0

Note: Populations and households are given to the nearest 100.

3.15 The 2024 summer night 10-year average modal split 45 dB $L_{Aeq,8h}$ contour enclosed an area of 125.1 km^2 and a population of 17,300.

3.16 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours are provided in **Table 10**.

Table 10 Gatwick 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours – noise sensitive building estimates

$L_{Aeq,8h}$ (dB)	Community buildings	Hospitals	Schools	Places of worship
> 45	8	1	25	17
> 48	3	1	15	10
> 51	2	0	10	6
> 54	1	0	1	3
> 57	0	0	1	2
> 60	0	0	0	2
> 63	0	0	0	1
> 66	0	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2024 summer day actual $L_{Aeq,16h}$ contours – comparison with 2023

3.17 The Gatwick 2023 and 2024 summer day actual modal split $L_{Aeq,16h}$ contours are compared in **Figure B17**.

3.18 **Table 11** summarises the areas, populations and percentage changes from 2023 to 2024.

Table 11 Gatwick 2023 and 2024 summer day actual $L_{Aeq,16h}$ contours – area and population estimates

$L_{Aeq,16h}$ (dB)	2023 area (km^2)	2024 area (km^2)	Area change	2023 population	2024 population	Population change
> 51	112.8	114.2	+1%	16,300	17,500	+7%
> 54	58.5	60.0	+3%	6,700	7,300	+9%
> 57	32.1	33.0	+3%	1,800	1,900	+6%
> 60	18.0	18.6	+3%	700	1,100	+57%
> 63	9.7	10.0	+3%	300	300	0%
> 66	4.9	5.2	+6%	100	100	0%
> 69	2.4	2.5	+4%	0	< 100	(n/a)
> 72	1.4	1.4	0%	0	0	(-)

Note: The 2023 and 2024 summer day actual runway modal splits were 82% W / 18% E and 78% W / 22% E respectively.

3.19 The 51 dB $L_{Aeq,16h}$ contour area increased by 1% in 2024 and area increases of up to 6% were also found at the higher contour levels. This resulted mainly from the 2% rise in daytime movements.

3.20 The population count for the 51 dB contour increased by 7% in 2024 and there were also increases at some of the higher contour levels of up to 57%. The 57% increase at the 60 dB level was largely caused by a single postcode point with a relatively high population count being brought into the 2024 contour.

3.21 Percentage changes in contour area are not necessarily accompanied by similar changes in enclosed population because of the uneven distribution of populations around the airport.

2024 summer night actual $L_{Aeq,8h}$ contours – comparison with 2023

3.22 The Gatwick 2023 and 2024 summer night actual modal split $L_{Aeq,8h}$ contours are compared in **Figure B18**. For clarity, the 2023 and 2024 contours are only plotted at levels 45 to 63 dB.

3.23 **Table 12** summarises the areas, populations and percentage changes from 2023 to 2024.

Table 12 Gatwick 2023 and 2024 summer night actual $L_{Aeq,8h}$ contours – area and population estimates

$L_{Aeq,8h}$ (dB)	2023 area (km^2)	2024 area (km^2)	Area change	2023 population	2024 population	Population change
> 45	128.1	124.6	-3%	17,300	17,500	+1%
> 48	72.7	71.6	-2%	8,500	8,800	+4%
> 51	36.8	36.4	-1%	4,000	4,700	+18%
> 54	20.3	19.9	-2%	1,100	1,200	+9%
> 57	10.9	10.9	0%	500	500	0%
> 60	5.6	5.7	+2%	100	100	0%
> 63	2.8	2.8	0%	100	100	0%
> 66	1.6	1.6	0%	0	0	(-)
> 69	1.0	1.0	0%	0	0	(-)
> 72	0.6	0.5	-17%	0	0	(-)

Note: The 2023 and 2024 summer night actual runway modal splits were 81% W / 19% E and 78% W / 22% E respectively.

3.24 The 45 dB $L_{Aeq,8h}$ contour area in 2024 decreased by 3% compared to 2023 following the 3% movement decrease. There were also area decreases at some of the higher contour levels.

3.25 Despite the area decreases, the population count increased by 1% within the 45 dB $L_{Aeq,8h}$ contour and there were also population increases of up to 18% at some of the higher contour levels. Examination of the underlying population data indicates that the increases seen at the 45 to 51 dB levels were mainly due to population database changes between 2023 and 2024. For example, the 45 dB population count for 2024 would have been 16,900, 3% lower than 2023, using the 2023 database.

2024 summer day standard $L_{Aeq,16h}$ contours – comparison with 2023

3.26 The Gatwick 2023 and 2024 summer day standard modal split $L_{Aeq,16h}$ contours are compared in **Figure B19**.

3.27 **Table 13** summarises the areas, populations and percentage changes from 2023 to 2024.

3.28 The standard contours normally provide a clearer indication than the actual contours of 'fleet noise level' changes from year to year, because they minimise the effects of any differences between the ratios of westerly to easterly operations.

Table 13 Gatwick 2023 and 2024 summer day standard $L_{Aeq,16h}$ contours – area and population estimates

$L_{Aeq,16h}$ (dB)	2023 area (km^2)	2024 area (km^2)	Area change	2023 population	2024 population	Population change
> 51	111.7	113.8	+2%	16,400	17,600	+7%
> 54	58.3	59.9	+3%	6,700	7,200	+7%
> 57	32.2	33.0	+2%	1,900	1,900	0%
> 60	18.1	18.6	+3%	1,000	1,100	+10%
> 63	9.7	10.0	+3%	300	300	0%
> 66	4.9	5.1	+4%	100	100	0%
> 69	2.4	2.5	+4%	0	< 100	(n/a)
> 72	1.4	1.4	0%	0	0	(-)

Note: The 2023 and 2024 summer day standard runway modal splits were both 75% W / 25% E.

3.29 The 2024 standard modal split 51 dB $L_{Aeq,16h}$ contour area increased by 2% (+2.1 km^2) compared to 2023 following the 2% daytime movement rise. There were area increases of up to 4% at the higher contour levels.

3.30 The 2.1 km^2 increase in the 51 dB $L_{Aeq,16h}$ area can be broken down approximately as follows:

- +1.0 km^2 due to changes in movement numbers and fleet mix.
- +1.1 km^2 due to flight profile and noise updates (based on 2024 radar data analysis and noise measurements).

3.31 There was a 7% population increase in 2024 at the 51 dB contour level and increases of up to 10% at some of the higher contour levels.

2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours – comparison with 2023

3.32 The Gatwick 2023 and 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours are compared in **Figure B20**. For clarity, the 2023 and 2024 contours are only plotted at levels 45 to 63 dB.

3.33 **Table 14** summarises the areas, populations and percentage changes from 2023 to 2024.

Table 14 Gatwick 2023 and 2024 summer night 10-year average modal split $L_{Aeq,8h}$ contours – area and population estimates

$L_{Aeq,8h}$ (dB)	2023 area (km^2)	2024 area (km^2)	Area change	2023 population	2024 population	Population change
> 45	128.3	125.1	-2%	17,100	17,300	+1%
> 48	72.0	71.4	-1%	8,100	8,600	+6%
> 51	36.5	36.1	-1%	3,800	4,400	+16%
> 54	20.1	19.9	-1%	1,100	1,100	0%
> 57	11.0	10.9	-1%	500	500	0%
> 60	5.7	5.7	0%	100	100	0%
> 63	2.8	2.8	0%	100	100	0%
> 66	1.6	1.6	0%	0	0	(-)
> 69	1.0	0.9	-10%	0	0	(-)
> 72	0.6	0.5	-17%	0	0	(-)

Note: The 2023 and 2024 summer night 10-year average runway modal splits were 71% W / 29% E and 73% W / 27% E respectively.

3.34 The 45 dB $L_{Aeq,8h}$ contour area in 2024 decreased by 2% (-3.2 km^2) compared to 2023 following the 3% fall in movements. There were also area decreases of up to 17% at some of the higher contour levels.

3.35 The 3.2 km^2 decrease in the 45 dB $L_{Aeq,8h}$ area can be broken down approximately as follows:

- -3.2 km^2 due to changes in movement numbers and fleet mix.
- 0.0 km^2 due to flight profile and noise updates (based on 2024 radar data analysis and noise measurements).

3.36 Despite the area decreases, the population count increased by 1% within the 45 dB $L_{Aeq,8h}$ contour and there were also increases at the 48 and 51 dB contour levels of up to 16%. Examination of the underlying population data indicates that the increases seen at the 45 to 51 dB levels were mainly due to population database changes between 2023 and 2024. For example, the 45 dB population count for 2024 would have been 16,700, 3% lower than 2023, using the 2023 database.

Daytime $L_{Aeq,16h}$ noise contour historical trend

3.37 **Figure B21** shows how the 57 dB $L_{Aeq,16h}$ day actual modal split contour has changed in area and population terms since 1988 by comparison with the total annual (365-day) aircraft movements. Actual modal split data are used in this figure because standard modal split contours were not produced prior to 1995.

Movements

3.38 Aircraft movements reached a low in 1991 (the year of the First Gulf War) and did not return to 1990 levels until 1995. From 1995 to 2000 they increased steadily. From 2000 to 2002 movements decreased, possibly as a consequence of the terrorist attacks on 11 September 2001. There was little change in the total annual number of movements from 2002 to 2003, but annual movements rose steadily from 2004 to 2007. However, the annual movement figure for 2008 fell by 1% from 2007 - this may be attributed to the fluctuating oil price and economic downturn. The annual movements fell even further in 2009, by 4%, as the global recession continued to impact upon the aviation industry.

3.39 Movements dropped for the third year in a row in 2010, by a further 5%. This was due in part to the volcanic ash crisis in April and adverse winter weather conditions. However, there was a recovery in 2011 from the adverse events of the previous year as traffic levels rose by 4%. In 2012 traffic levels fell by 2% following a reduction in charter flights at Gatwick. However, movement numbers increased from 2013 through to 2017 as demand returned. Movements then reduced by 1% in 2018, caused in part by serious disruptions in December 2018 following drone sightings at the airport. Movements rose slightly (by 0.4%) in 2019.

3.40 The COVID-19 global pandemic in 2020 caused a 72% fall in annual movements at Gatwick. There was a further 30% drop in annual movements in 2021 as the pandemic severely reduced flights in the first half of the year and international travel restrictions only started to ease at the start of the summer. However, in 2022 there was a major rise in annual movements as air travel recovered and movements also rose again in 2023, and by 2024, movements were 7% below 2019 levels.

Areas

3.41 From 1988 to 1993, the area within the 57 dB $L_{Aeq,16h}$ contour diminished and then increased until 1996. From 1996 onwards the area decreased each year but levelled off between 1999 and 2000. In 2001, the area fell by 22% relative to the previous year, and in 2002, the contour area decreased by 19% relative to 2001. From 2002 to 2008 the contour area fluctuated within a narrow range from 45 to 49 km^2. However, the area fell below this range to 41 km^2 in 2009, and dropped further in 2010 to 39.6 km^2, which at the time was the smallest ever area

calculated for Gatwick, as the global recession impacted upon the aviation industry.

3.42 Since 2011 the contour area has fluctuated within the range 40-44 km^2. The contour area increased by 2% in 2011 to 40.4 km^2 as movements started to recover. In 2012 the area was again higher by 2%, this time mainly due to some changes in the fleet mix. The 2013 contour area reduced by 1% from 2012 despite a rise in movements, largely because of fleet mix changes in favour of quieter types. However, in 2014 the contour area increased by 3% as total movements rose again and some large twin-turboprop aircraft were replaced by narrow-body jets. There was a 1% area increase in 2015 as higher numbers of movements were largely offset by noise adjustments to some of the ANCON aircraft types in the light of monitoring data. In 2016 the area increased again to 44.2 km^2 as movements rose by 4%. However, in 2017 the area fell by 3% as noise levels reduced for the Airbus A319/A320 aircraft on arrival, which was likely the result of most of these types having received the FOPP (Fuel Over Pressure Protector) modification to reduce approach noise. In 2018 the area fell again, this time by 6%, primarily because noise measurements showed that the noise dominant aircraft types were quieter on arrival. The area decreased for the third year running in 2019 (by 3%) to its lowest ever level of 38.7 km^2, as the proportion of more modern, quieter types (such as the Airbus A320neo and A321neo) in the fleet mix increased.

3.43 The COVID-19 pandemic had unprecedented impacts on air travel in 2020, causing a 72% drop in annual movements at Gatwick and an 82% reduction in the 57 dB contour area, which fell to an all-time low of 7.0 km^2. In 2021, the contour area increased by 38% as movements recovered during the summer, and 2022 saw a 179% area increase following a sustained recovery in air travel. The area increased further in 2023 and 2024 as movements continued to rise.

Populations

3.44 The population numbers within the contours have generally moved in line with the areas. They dropped to the lowest ever level in 2010 when the area was also at its lowest, but since 2011 have fluctuated between approximately 3,000-4,000. The 19% rise in population for 2012 was largely the result of the contour extending over a densely populated area (Lingfield). In 2013, the population dropped by 11% as the higher proportion of easterly movements caused the contour to retreat from Lingfield. The population count increased by 2% in 2014 following the inclusion of Gatwick immigration removal centre residents in the population database for the first time. An 11% rise in population occurred in 2015 as the contour extended over Lingfield, after a shift in the runway modal split back to a more typical figure. The population increased again in 2016 as an 11% higher proportion of westerly operations extended the contour over parts of Lingfield. However, in 2017 the population decreased by 2% following an area

reduction. The population also fell in 2018 (this time by 31%) as quieter aircraft on arrival and a 10% reduction in westerly movements shifted the contour away from Lingfield. The population count decreased (by 9%) for the third year running in 2019 to its lowest ever level of 2,550 as the contour area also fell to its lowest level since 1988.

3.45 The 82% contour area reduction in 2020 meant the population within the 57 dB contour also fell to the lowest level ever recorded (150). In 2021, the 38% increase in contour area caused the population to increase by 100%. The population rose further in 2022 by 325% as the contour area expanded by 179%. In 2023, the population increase was only 6% as the 57 dB contour expanded over less densely populated areas, and the population count stayed at a similar level in 2024.

Supplementary noise metric – N65 day contours

3.46 Contours using the supplementary noise metric N65[17] have been produced for the 2024 summer day period, using the same modelling input data as the $L_{Aeq,16h}$ day actual modal split (78% W / 22% E) contours. The contours are shown in **Figure B22**, plotted at levels 20, 50, 100, 200 and 500 events, and overlaid onto the 2023 results plotted at the 20-event level only, for clarity. Estimates of area, population and households are summarised in **Table 15**.

Table 15 Gatwick 2024 summer day actual modal split N65 contours – area, population and household estimates

N65	Area (km^2)	Population	Households
> 20	122.3	16,800	6,900
> 50	89.0	12,000	5,000
> 100	64.7	7,900	3,300
> 200	47.4	5,200	2,000
> 500	2.1	< 100	0

Note: Populations and households are given to the nearest 100. The 2024 summer day actual runway modal split was 78% W / 22% E. The population count within the 500-event contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.47 The 2024 summer day actual N65 20-event contour enclosed an area of 122.3 km^2 (2023: 121.8 km^2) and a population of 16,800 (2023: 14,800).

3.48 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer day actual N65 contours are provided in **Table 16**.

Table 16 Gatwick 2024 summer day actual modal split N65 contours – noise sensitive building estimates

N65	Community buildings	Hospitals	Schools	Places of worship
> 20	7	0	22	17
> 50	6	0	18	10
> 100	4	0	13	9
> 200	3	0	9	8
> 500	0	0	0	1

[17] N65 contours show the number of aircraft noise events exceeding 65 dB L_{Amax}.

3.49 N65 contours have also been produced for the 2024 summer day period with the standard modal split (75% W / 25% E). The contours are shown in **Figure B23**, plotted at levels 20, 50, 100, 200 and 500 events, and overlaid onto the 2023 results plotted at the 20-event level only, for clarity. Estimates of area, population and households are summarised in **Table 17**.

Table 17 Gatwick 2024 summer day standard modal split N65 contours – area, population and household estimates

N65	Area (km^2)	Population	Households
> 20	129.8	19,100	7,800
> 50	88.7	12,100	5,000
> 100	65.1	7,600	3,100
> 200	47.3	5,100	2,000
> 500	2.1	< 100	0

Note: Populations and households are given to the nearest 100. The 2024 summer day standard runway modal split was 75% W / 25% E. The population count within the 500-event contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.50 The 2024 summer day standard N65 20-event contour enclosed an area of 129.8 km^2 (2023: 135.9 km^2) and a population of 19,100 (2023: 18,800).

3.51 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer day standard N65 contours are provided in **Table 18**.

Table 18 Gatwick 2024 summer day standard modal split N65 contours – noise sensitive building estimates

N65	Community buildings	Hospitals	Schools	Places of worship
> 20	8	0	24	22
> 50	6	0	18	10
> 100	4	0	16	9
> 200	3	0	9	8
> 500	0	0	0	1

Supplementary noise metric – N60 night contours

3.52 Contours using the supplementary noise metric N60[18] have been produced for the 2024 summer night period, using the same modelling input data as the $L_{Aeq,8h}$ night actual modal split (78% W / 22% E) contours.

3.53 **Figure B24** shows the 2024 N60 contours plotted at the 10, 20, 50 and 100-event levels, along with the 2023 contours. Estimates of area, population and households are summarised in **Table 19**.

Table 19 Gatwick 2024 summer night actual modal split N60 contours – area, population and household estimates

N60	Area (km^2)	Population	Households
> 10	185.8	21,800	8,800
> 20	119.7	12,900	5,100
> 50	46.0	7,700	3,000
> 100	2.5	< 100	0

Note: Populations and households are given to the nearest 100. The 2024 summer night actual runway modal split was 78% W / 22% E. The population count within the 100-event contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.54 The 2024 summer night actual N60 10-event contour enclosed an area of 185.8 km^2 (2023: 215.4 km^2) and a population of 21,800 (2023: 25,500).

3.55 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer night actual N60 contours are provided in **Table 20**.

Table 20 Gatwick 2024 summer night actual modal split N60 contours – noise sensitive building estimates

N60	Community buildings	Hospitals	Schools	Places of worship
> 10	16	1	29	22
> 20	8	1	21	15
> 50	3	1	15	9
> 100	0	0	0	1

3.56 N60 contours have also been produced for the 2024 summer night period with the $L_{Aeq,8h}$ night 10-year average modal split (73% W / 27% E). The contours are

[18] N60 contours show the number of aircraft noise events exceeding 60 dB L_{Amax}.

shown in **Figure B25**, plotted at the 10, 20, 50 and 100-event levels, along with the 2023 contours. Estimates of area, population and households are summarised in **Table 21**.

Table 21 Gatwick 2024 summer night 10-year average modal split N60 contours – area, population and household estimates

N60	Area (km^2)	Population	Households
> 10	185.6	24,300	9,800
> 20	120.7	13,100	5,200
> 50	55.9	7,900	3,100
> 100	1.1	< 100	0

Note: Populations and households are given to the nearest 100. The 2024 summer night 10-year average runway modal split was 73% W / 27% E. The population count within the 100-event contour is associated with the Brook House Immigration Removal Centre, thus there are zero households.

3.57 The 2024 summer night 10-year average modal split N60 10-event contour enclosed an area of 185.6 km^2 (2023: 212.6 km^2) and a population of 24,300 (2023: 28,700).

3.58 'Number Above' (N) contours can be highly sensitive to small changes in movement numbers or differences in runway modal splits. Because N-contours are based on counts of aircraft events above a specified maximum noise level threshold, step changes in area can occur if the Number Above count just goes above or below the event level of interest (e.g. 10 events) at a particular location. Changes in area enclosed by L_{Aeq} contours due to such changes, by contrast, are more gradual, due to contour area being proportional to noise energy, i.e. not subject to specific threshold requirements.

3.59 Estimates of the cumulative numbers of noise sensitive buildings within the 2024 summer night 10-year average runway modal split N60 contours are provided in **Table 22**.

Table 22 Gatwick 2024 summer night 10-year average modal split N60 contours – noise sensitive building estimates

N60	Community buildings	Hospitals	Schools	Places of worship
> 10	16	1	31	22
> 20	8	1	21	15
> 50	3	1	15	9
> 100	0	0	0	0

Chapter 4
Conclusions

4.1 Year 2024 average summer day $L_{Aeq,16h}$ and night $L_{Aeq,8h}$ noise exposure contours have been generated for Gatwick Airport using the ANCON noise model.

4.2 Movements over the 2024 summer day period rose by 2% to 730.8 from 2023 (714.8). The 2024 summer day actual modal split (78% W / 22% E) 51 dB $L_{Aeq,16h}$ contour area increased by 1% to 114.2 km^2 (2023: 112.8 km^2). The population count within this contour rose by 7% in 2024 to 17,500 (2023: 16,300).

4.3 The 2024 summer 8-hour night movements decreased by 3% to 121.3 from 2023 (124.5). The 2024 summer night actual modal split (78% W / 22% E) 45 dB $L_{Aeq,8h}$ contour area was 124.6 km^2, a 3% decrease from 2023 (128.1 km^2). The population count within this contour was 17,500, a 1% increase from 2023 (17,300).

4.4 The 2024 summer day standard modal split (75% W / 25% E) 51 dB $L_{Aeq,16h}$ contour area increased by 2% to 113.8 km^2 (2023: 111.7 km^2). The population enclosed by this contour (17,600) was 7% higher than the previous year (2023: 16,400). The 2.1 km^2 increase in the 51 dB $L_{Aeq,16h}$ area can be broken down approximately as follows:

- +1.0 km^2 due to changes in movement numbers and fleet mix.
- +1.1 km^2 due to flight profile and noise updates (based on 2024 radar data analysis and noise measurements).

4.5 The 2024 summer night 10-year average modal split (73% W / 27% E) 45 dB $L_{Aeq,8h}$ contour area was 125.1 km^2, a 2% decrease from 2023 (128.3 km^2). The population count within this contour was 17,300, a 1% increase from 2023 (17,100).

4.6 Contours for the supplementary noise metric N65 have been produced for the 2024 average summer 16-hour day period. The area of the N65 20-event actual modal split (78% W / 22% E) contour was 122.3 km^2 (2023: 121.8 km^2), enclosing a population of 16,800 (2023: 14,800). With the standard modal split (75% W / 25% E), the N65 20-event contour area was 129.8 km^2 (2023: 135.9 km^2), enclosing a population of 19,100 (2023: 18,800).

4.7 Supplementary noise metric N60 contours have also been produced for the 2024 average summer 8-hour night period. The area of the N60 10-event actual modal split (78% W / 22% E) contour was 185.8 km^2 (2023: 215.4 km^2), enclosing a population of 21,800 (2023: 25,500). Assuming the 10-year average modal split

(73% W / 27% E), the N60 10-event area was 185.6 km^2 (2023: 212.6 km^2), enclosing a population of 24,300 (2023: 28,700).

APPENDIX A

References

1. Critchley J B, Ollerhead J B, *The Use of Leq as an Aircraft Noise Index*, DORA Report 9023, September 1990.
2. Civil Aviation Authority, *Survey of Noise Attitudes (2014): Aircraft*, CAP 1506, February 2017.
3. Department for Transport, *Consultation Response on UK Airspace Policy: A framework for balanced decisions on the design and use of airspace,* Cm 9520, October 2017.
4. Department for Transport, *Aviation Policy Framework*, Cm 8584, March 2013.
5. Civil Aviation Authority, *Noise Exposure Contours for Gatwick Airport 2023*, ERCD Report 2402, October 2024.
6. Ollerhead J B, Rhodes D P, Viinikainen M S, Monkman D J, Woodley A C, *The UK Civil Aircraft Noise Contour Model ANCON: Improvements in Version 2*, R&D Report 9842, June 1999.
7. European Civil Aviation Conference, *Report on Standard Method of Computing Noise Contours around Civil Airports*, ECAC.CEAC Doc 29, Fourth edition, December 2016.
8. Civil Aviation Authority, *Flight path accuracy of the Gatwick Noise and Track Keeping System*, CAP 1878, March 2020.
9. Civil Aviation Authority, *Noise Monitor Positions at Heathrow, Gatwick and Stansted Airports*, CAP 1149, 11th edition, February 2025.
10. ISO 20906:2009 *Acoustics - Unattended monitoring of aircraft sound in the vicinity of airports*.

APPENDIX B

Figures

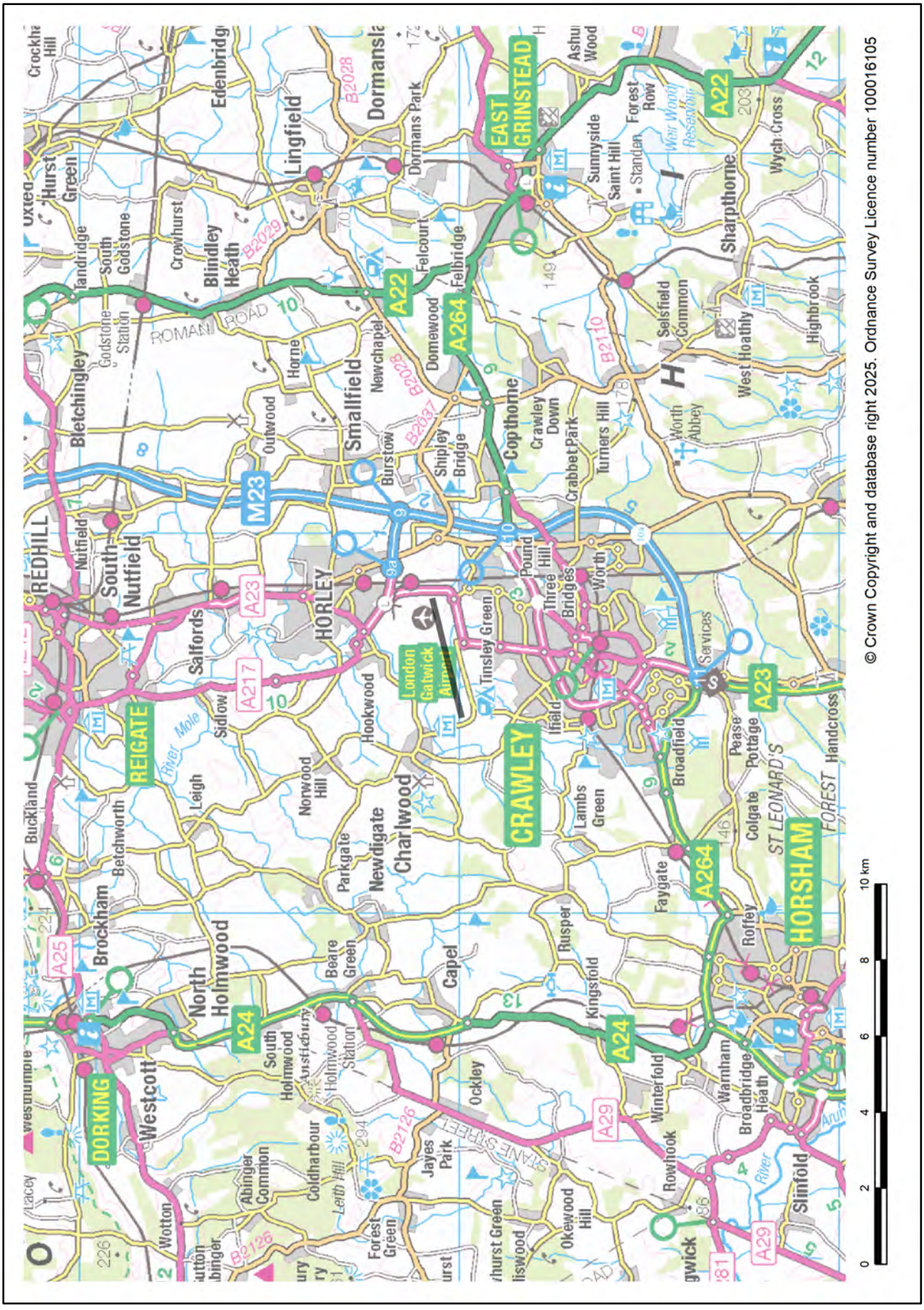


Figure B1 Gatwick Airport and the surrounding area

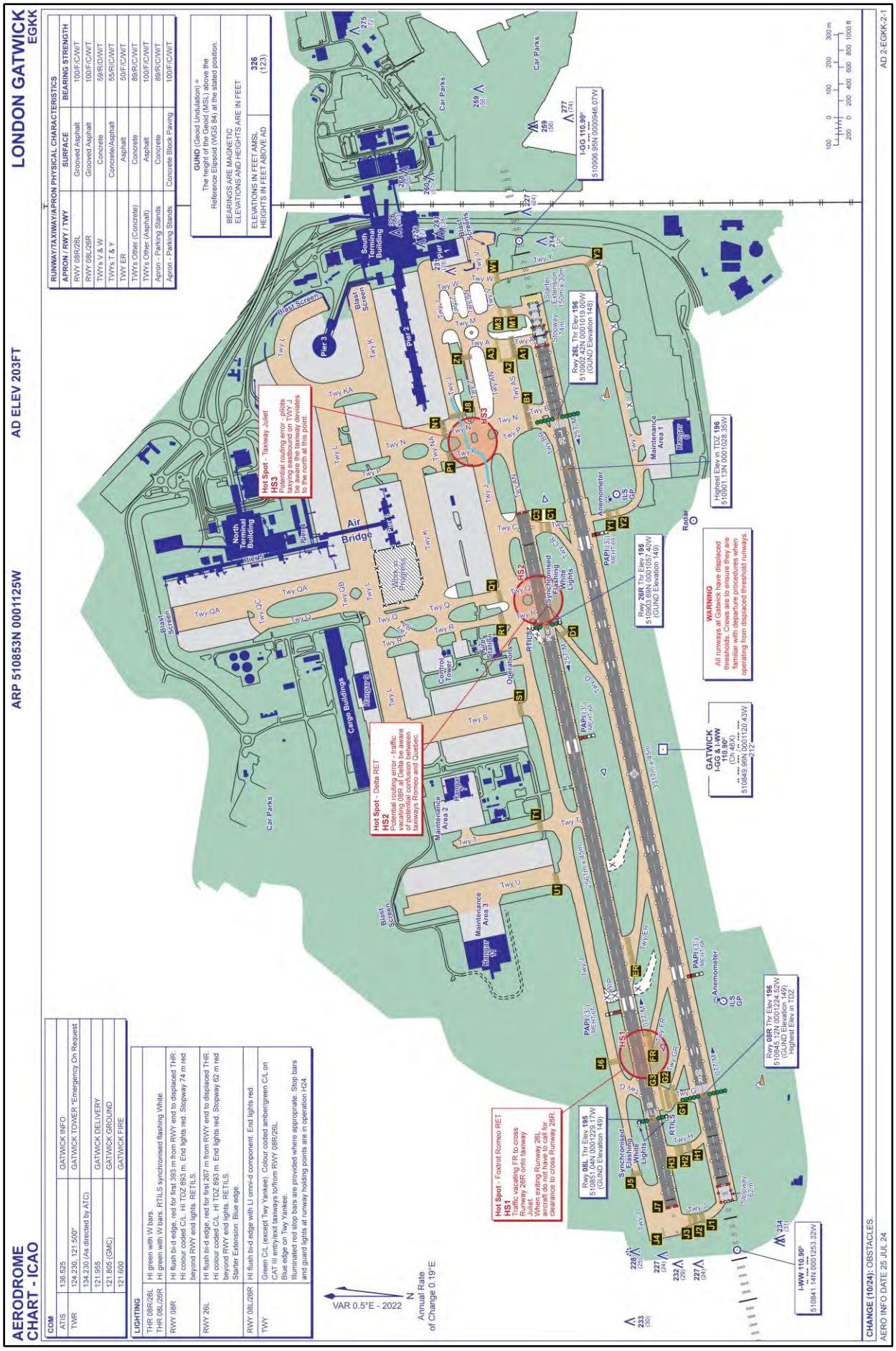
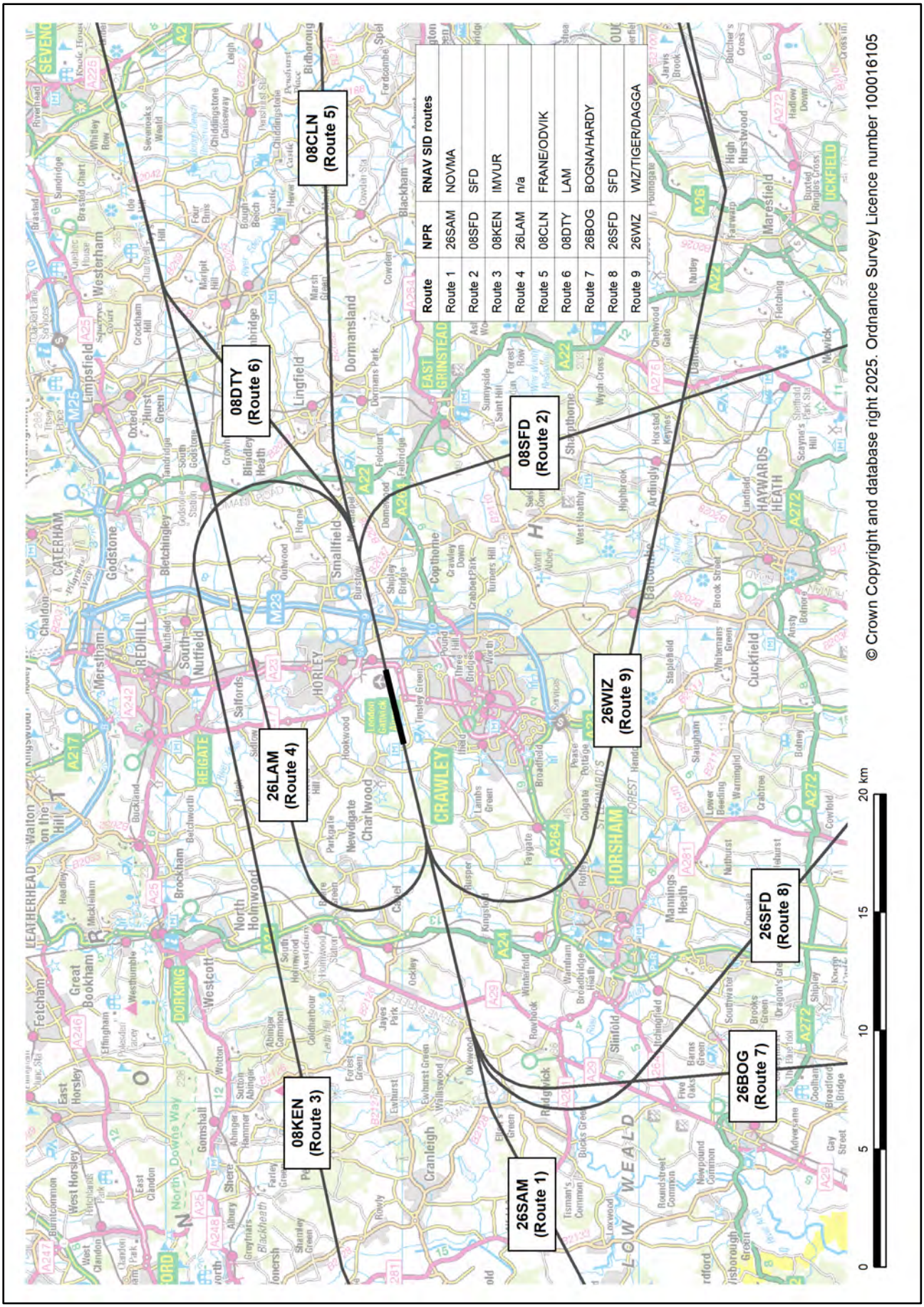


Figure B2 Gatwick Airport layout



Route	NPR	RNAV SID routes
Route 1	26SAM	NOVMA
Route 2	08SFD	SFD
Route 3	08KEN	IMVUR
Route 4	26LAM	n/a
Route 5	08CLN	FRANE/ODVIK
Route 6	08DTY	LAM
Route 7	26BOG	BOGNA/HARDY
Route 8	26SFD	SFD
Route 9	26WIZ	WIZ/TIGER/DAGGA

Figure B3 Gatwick NPR/SID routes

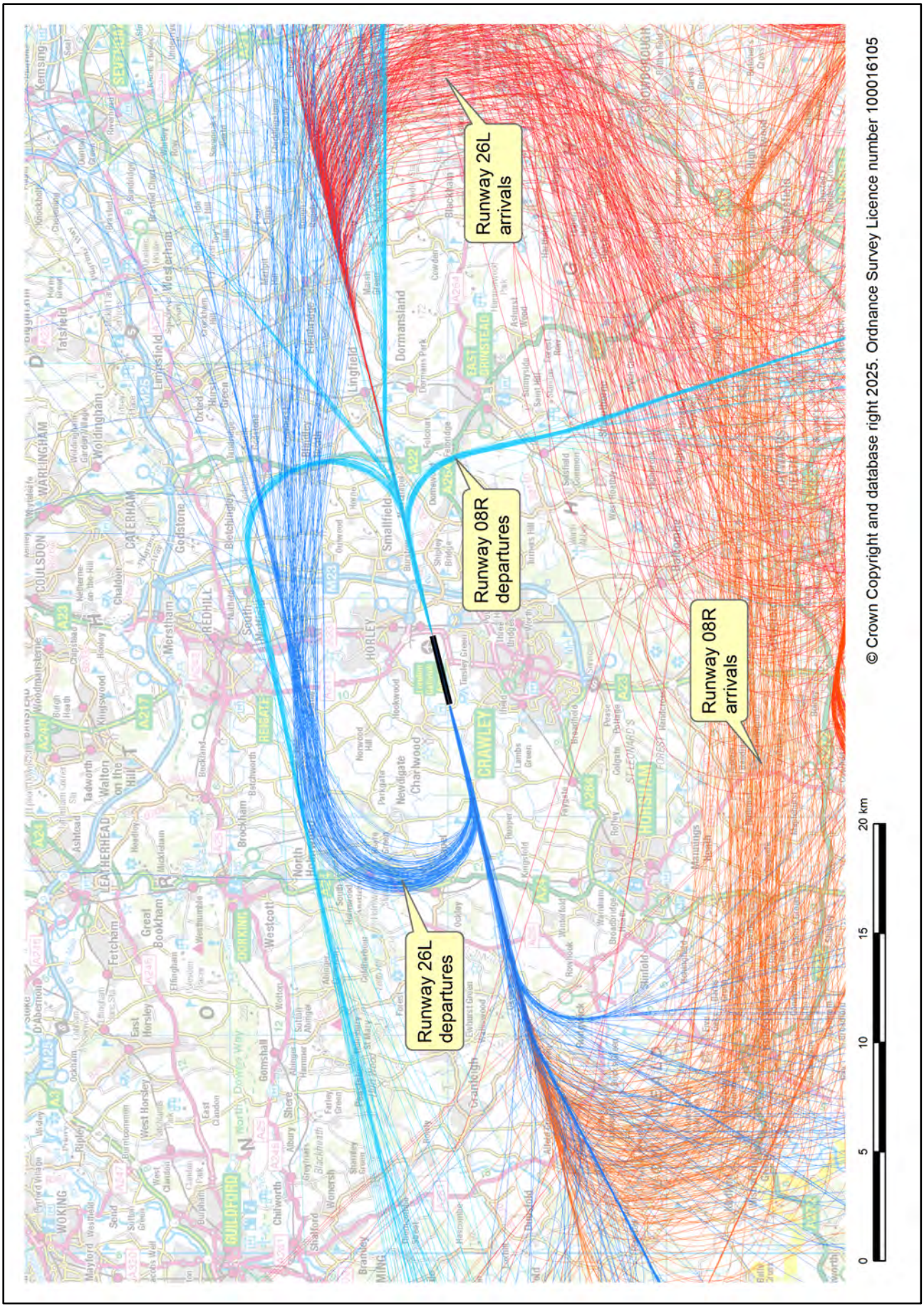
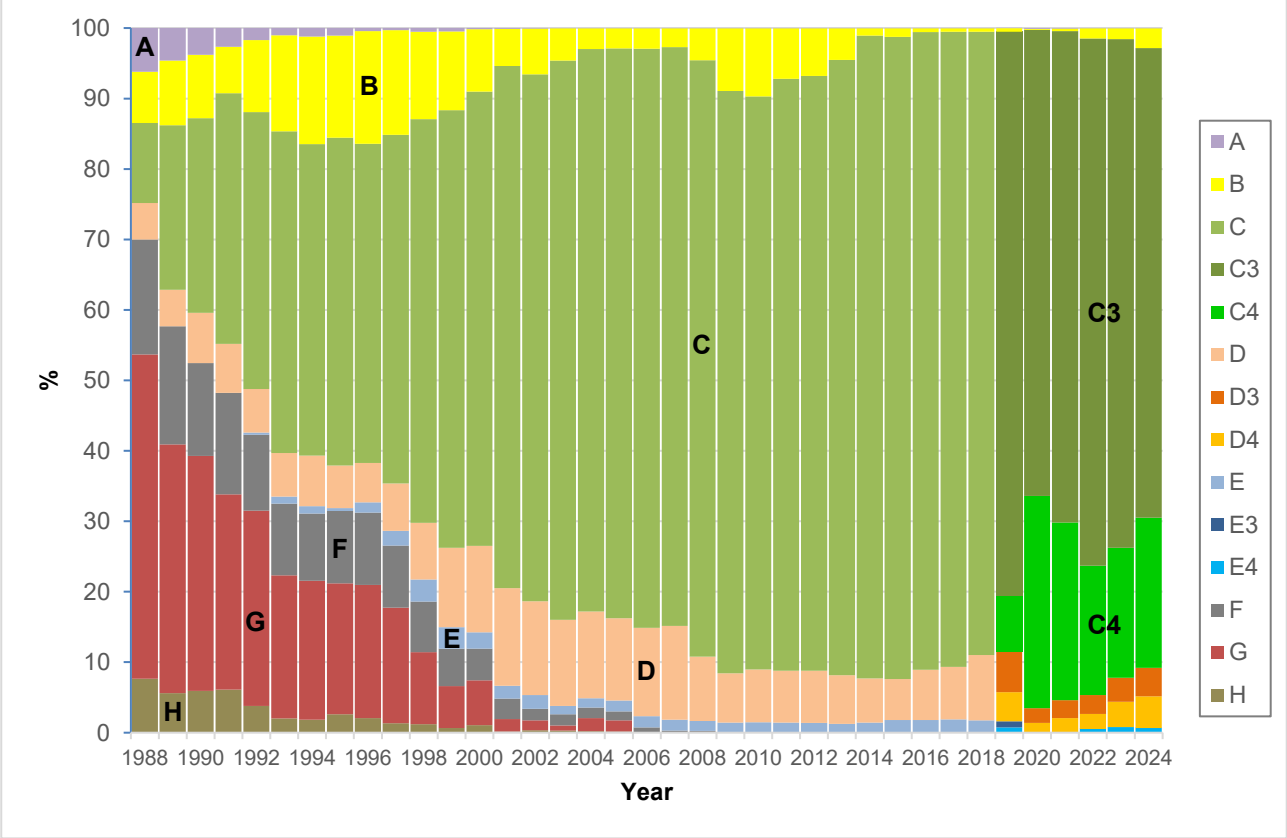


Figure B4 Typical arrival and departure radar tracks at Gatwick

Figure B5 Gatwick Noise Class trend 1988-2024



Note: The percentages from 1990 onwards relate to the average 16-hour L_{eq} day; before 1990 the percentages relate to the average 12-hour NNI day (07:00-19:00 local time). Also, the percentages before 1992 are based on departures only, from 1992 they relate to total movements.

Key to Noise Classes

Noise Class	Description
A	Small propeller (single/twin piston and turboprop light aircraft)
B	Large propeller (twin and 4-propeller aircraft), e.g. ATR-42, BAe ATP
C	Narrow-body aircraft (up to 2018), e.g. Airbus A319, Boeing 737-800
C3	3rd generation narrow-body aircraft (from 2019), e.g. Airbus A319, Boeing 737-800
C4	4th generation narrow-body aircraft (from 2019), e.g. Airbus A320neo
D	Wide-body twins (up to 2018), e.g. Airbus A330, Boeing 777-200
D3	3rd generation wide-body twins (from 2019), e.g. Airbus A330, Boeing 777-200
D4	4th generation wide-body twins (from 2019), e.g. Airbus A350-900, Boeing 787-9
E	Wide-body 3 or 4-engine aircraft (up to 2018), e.g. Airbus A380, Boeing 747-400
E3	3rd generation wide-body 4-engine aircraft (from 2019), e.g. Boeing 747-400
E4	4th generation wide-body 4-engine aircraft (from 2019), e.g. Airbus A380
F	1st generation wide-body 3 or 4-engine aircraft, e.g. Boeing 747-200
G	2nd generation narrow-body twins (including Ch.2 and hush-kitted versions), e.g. Boeing 737-200
H	1st generation narrow-body 3 or 4-engine aircraft (including hush-kitted versions), e.g. Boeing 707

Figure B6 Gatwick 2024 summer day movements by ANCON type

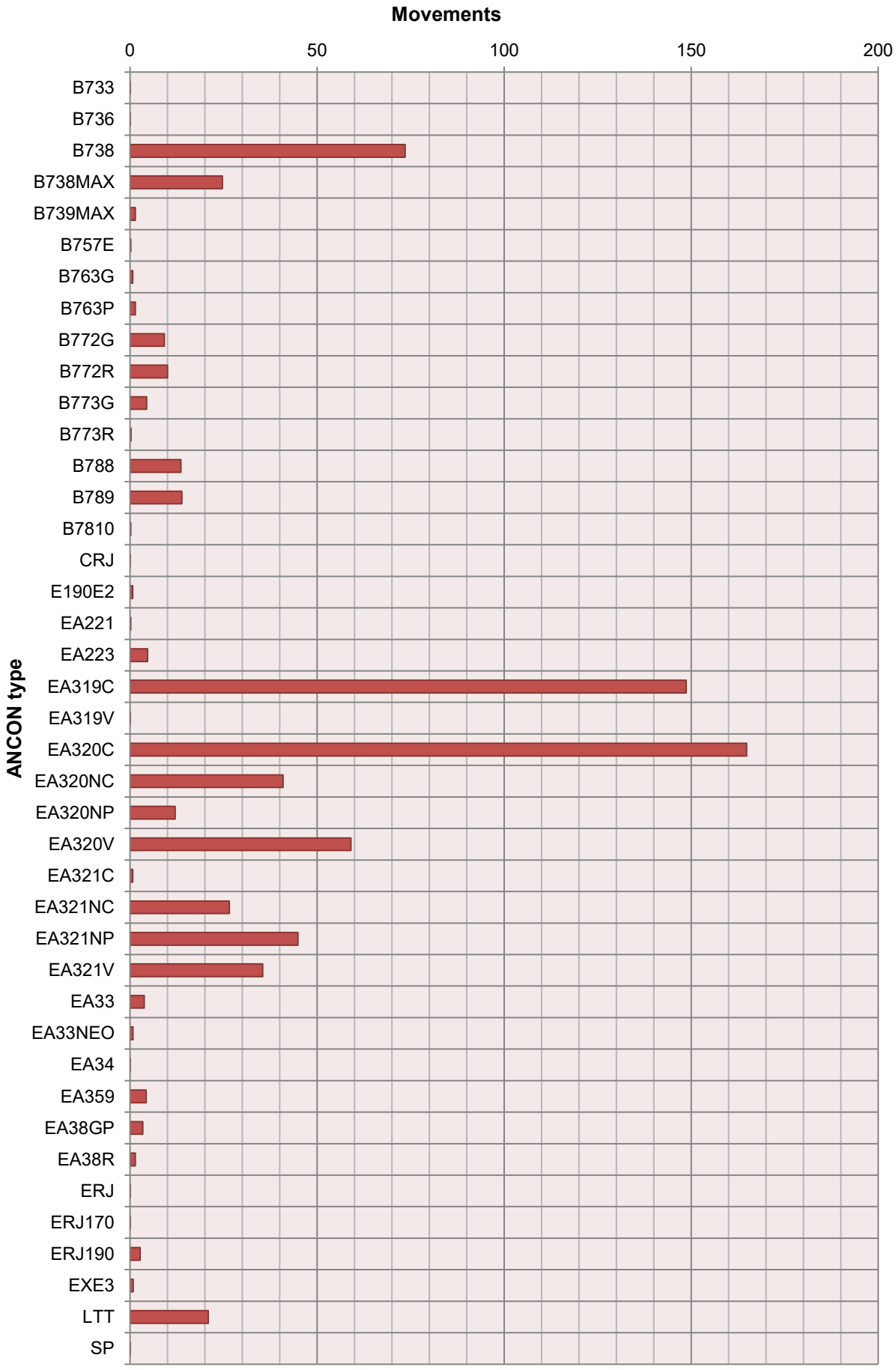


Figure B7 Gatwick 2024 summer night movements by ANCON type

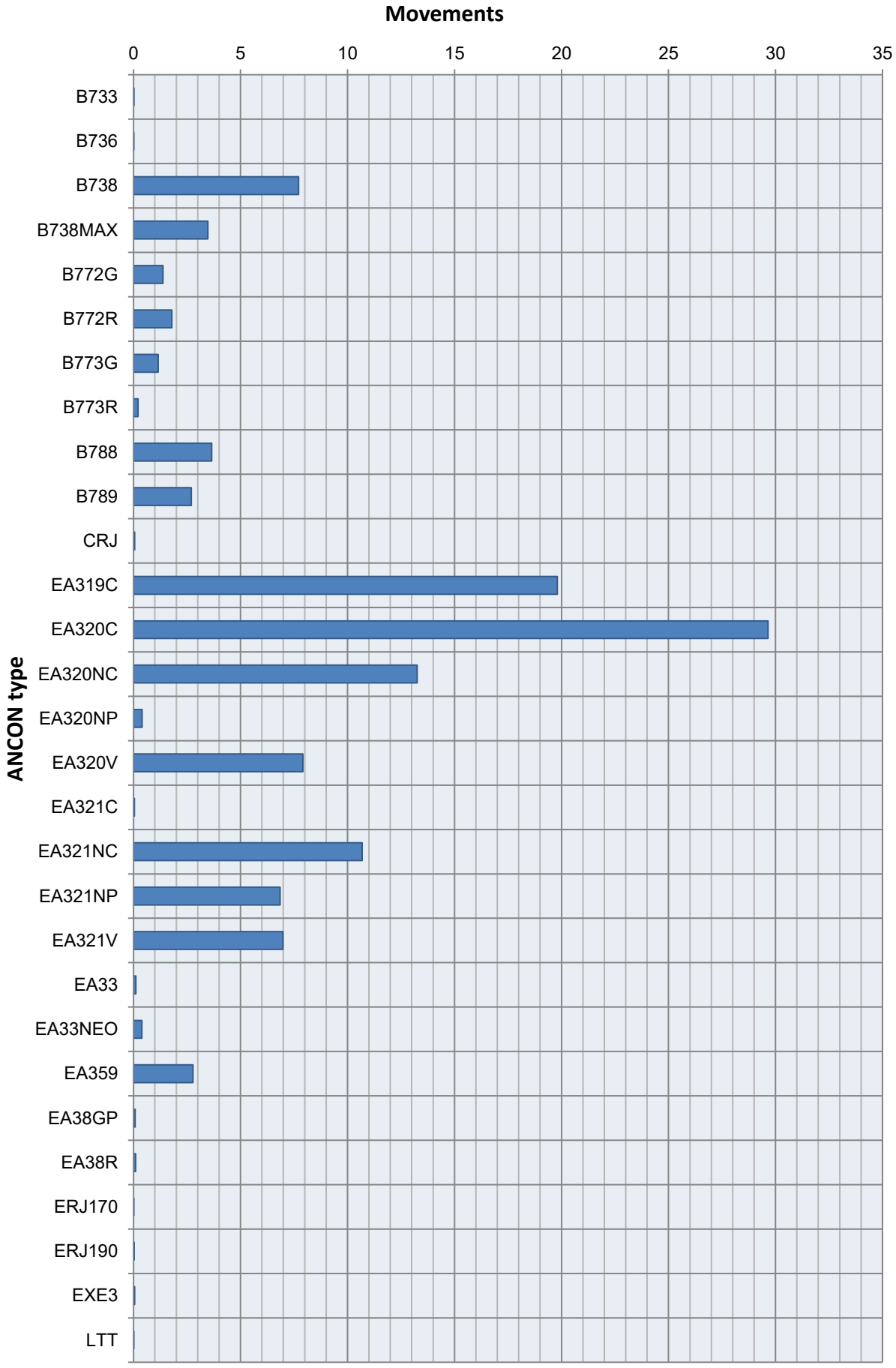


Figure B8 Gatwick 2024 summer day departure traffic distributions by NPR/SID

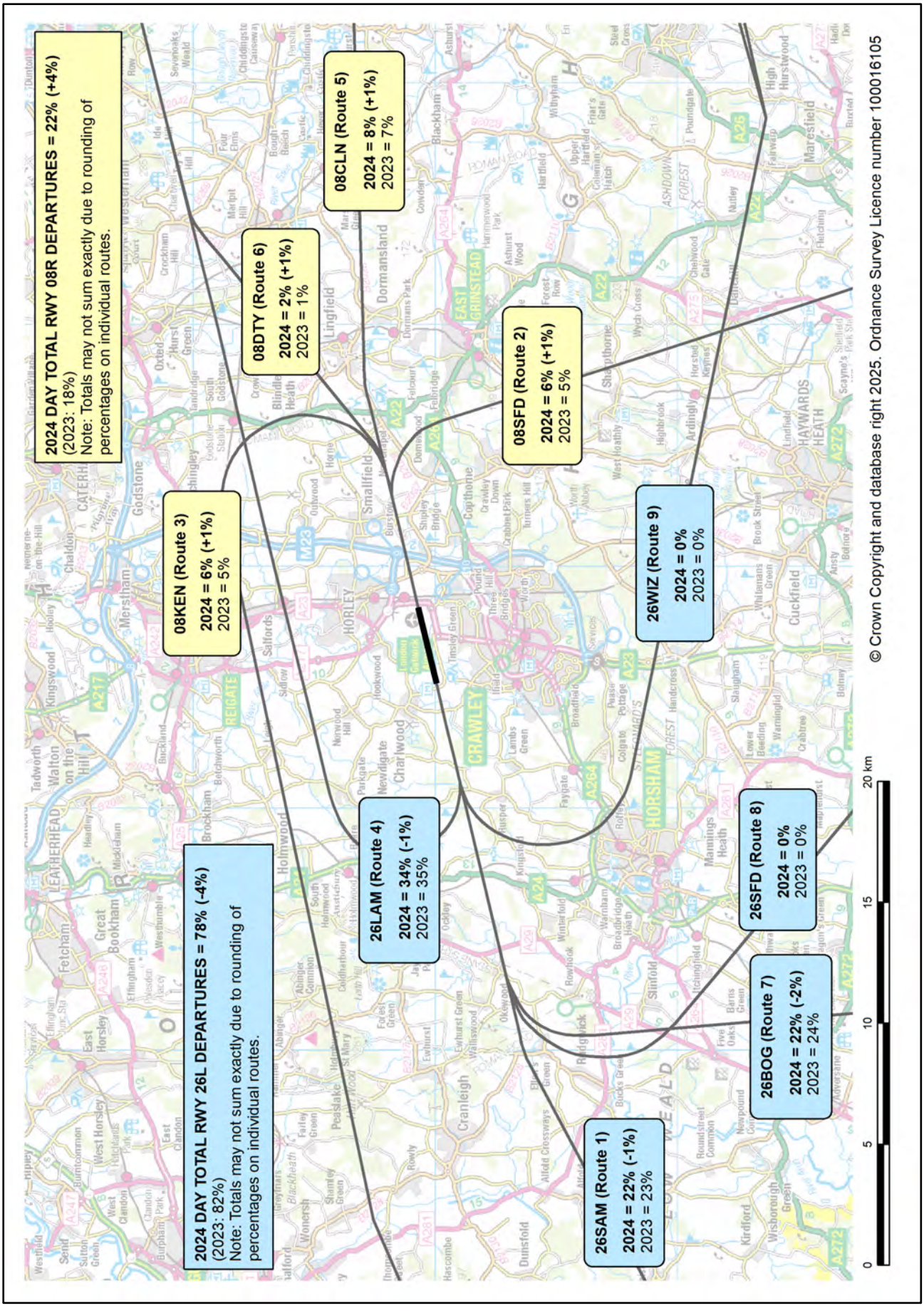


Figure B9 Gatwick 2024 summer night departure traffic distributions by NPR/SID

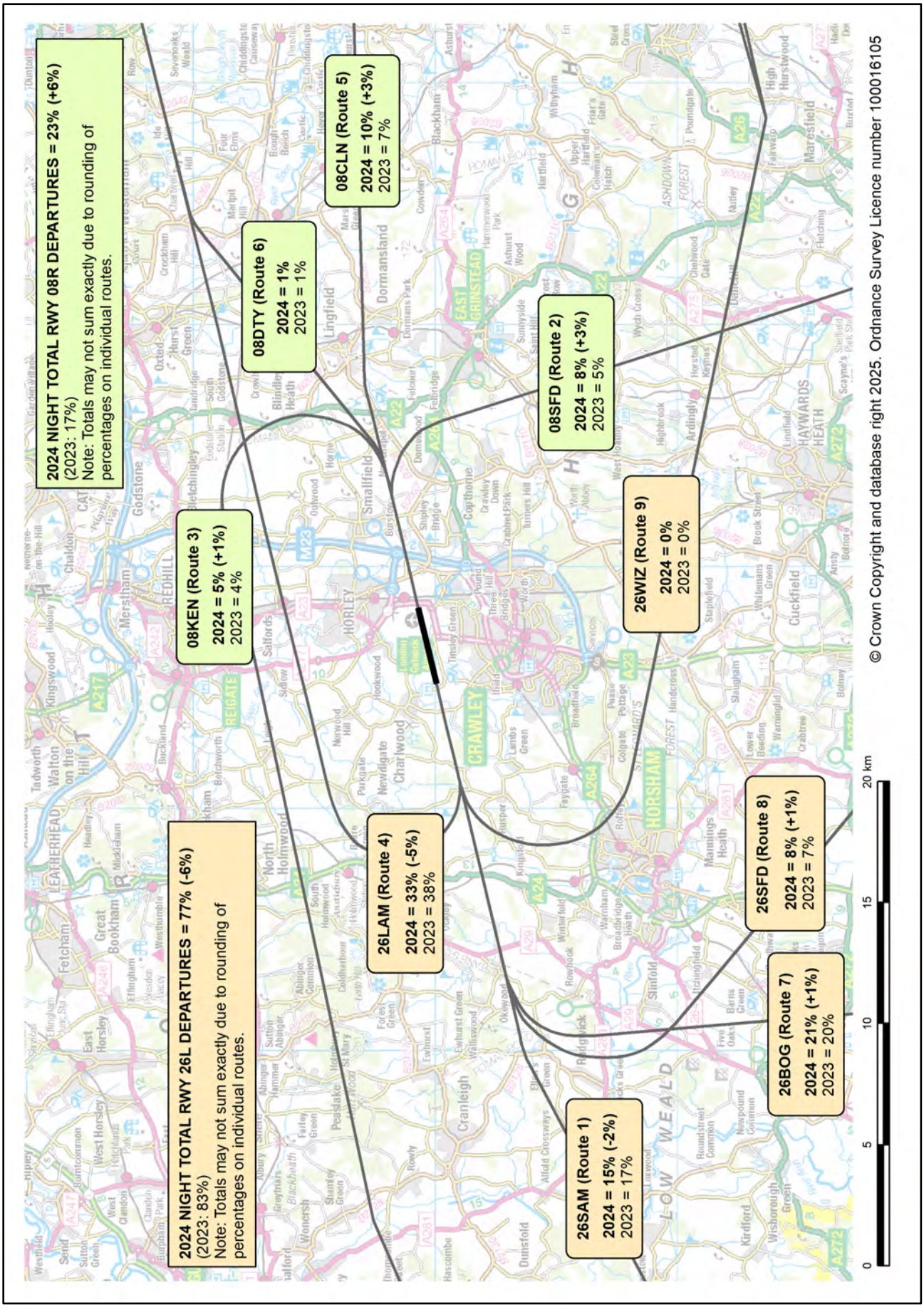
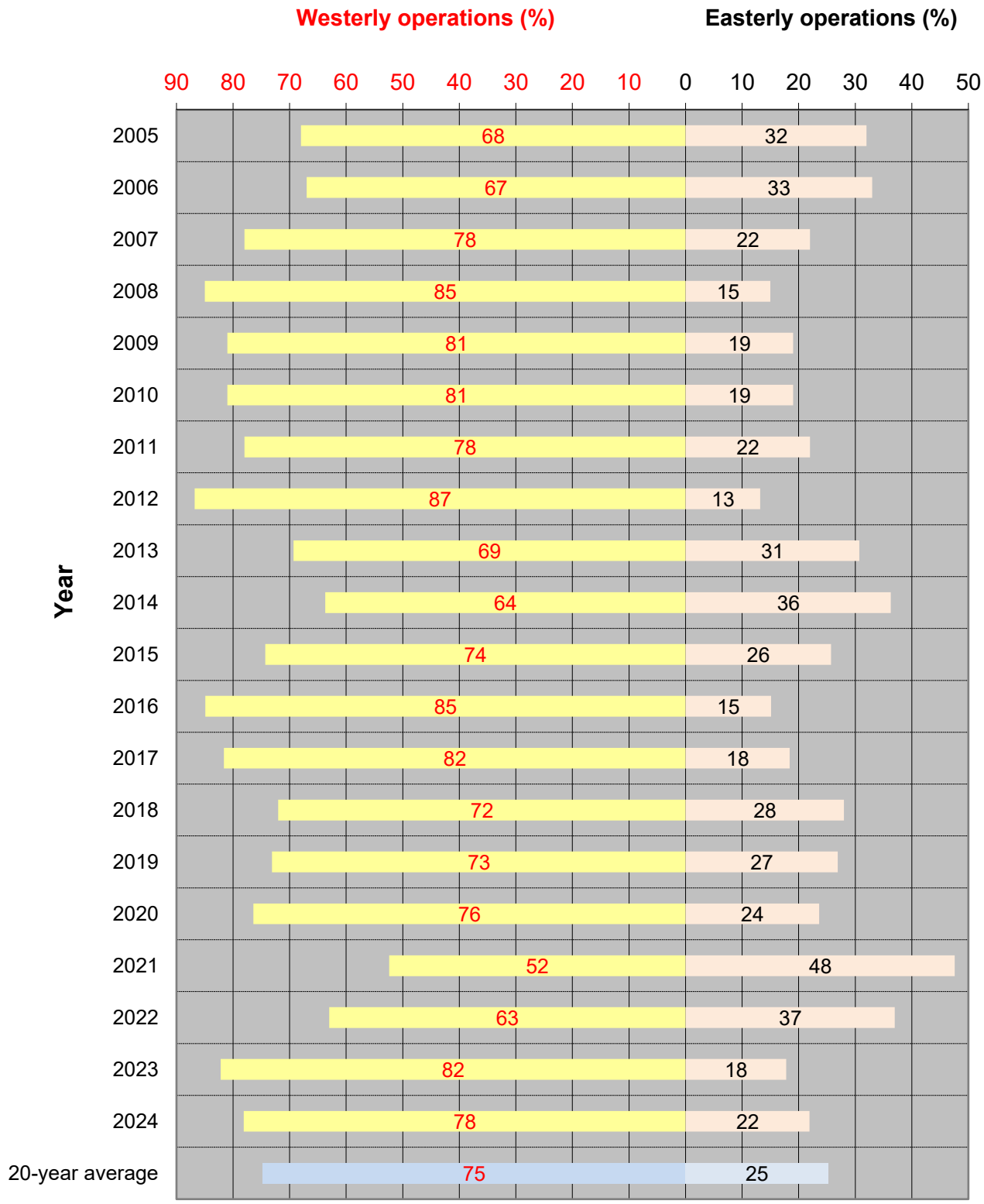


Figure B10 Gatwick summer day runway modal splits 2005-2024



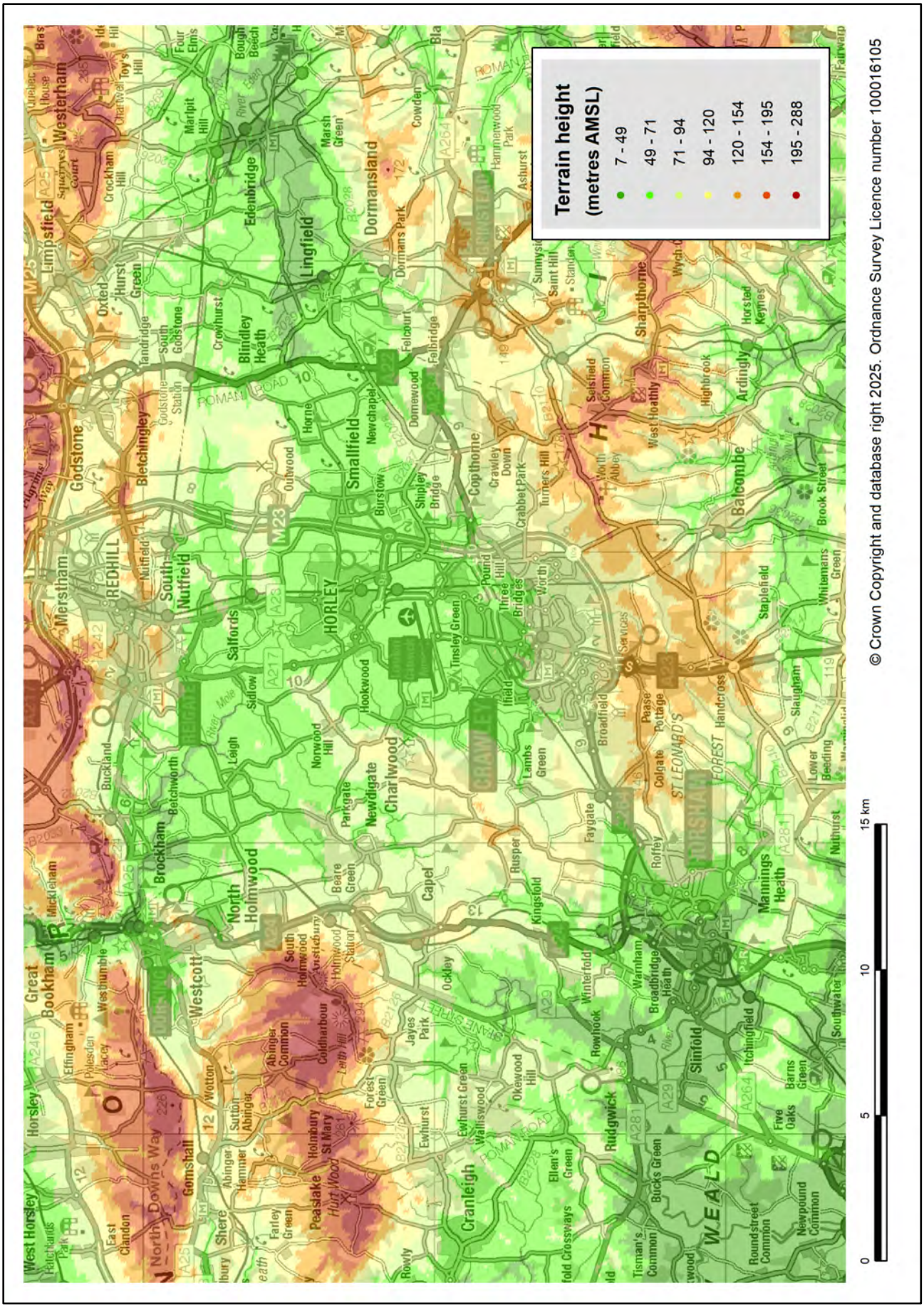


Figure B11 Terrain heights around Gatwick Airport

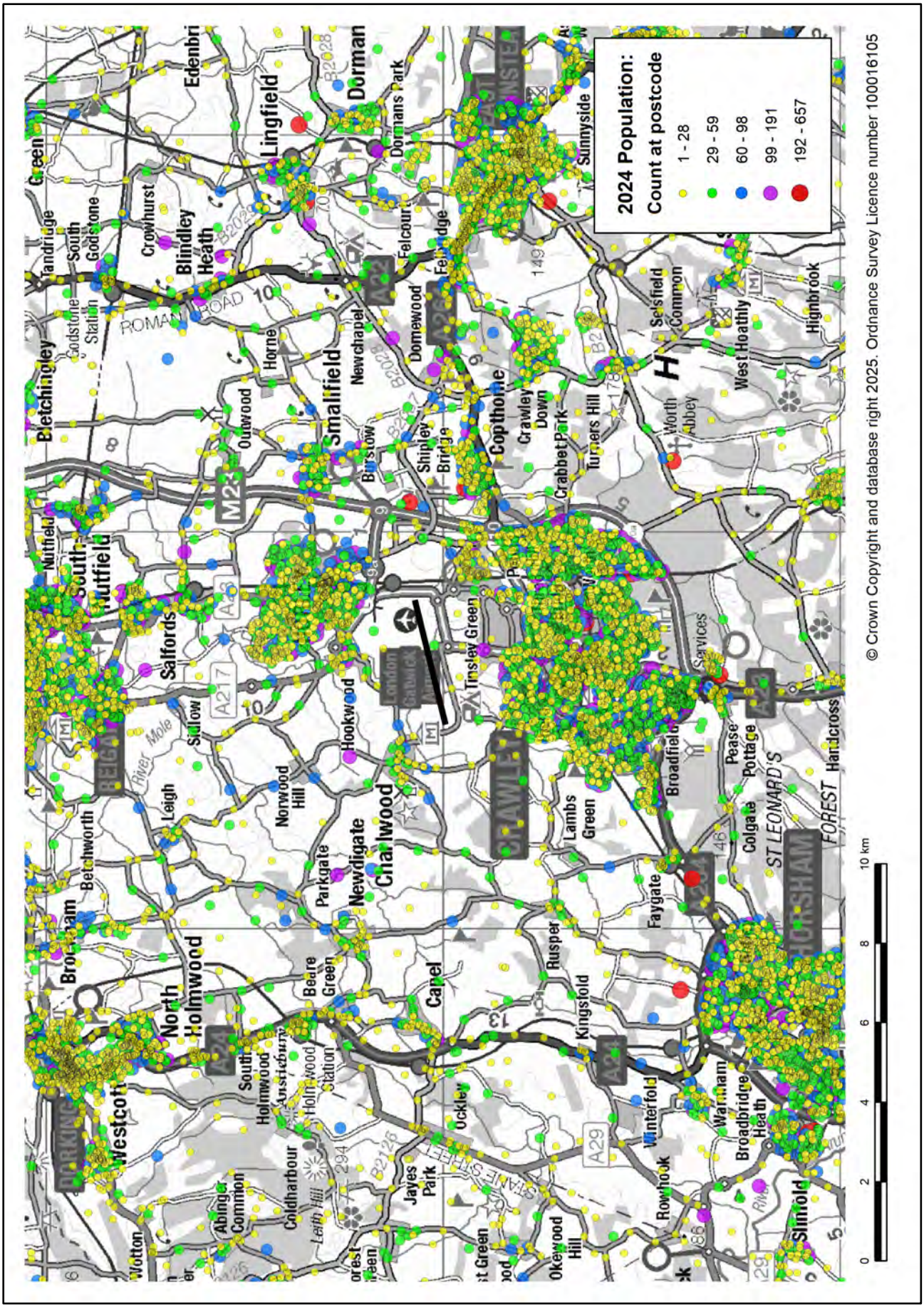


Figure B12 Population data points around Gatwick Airport

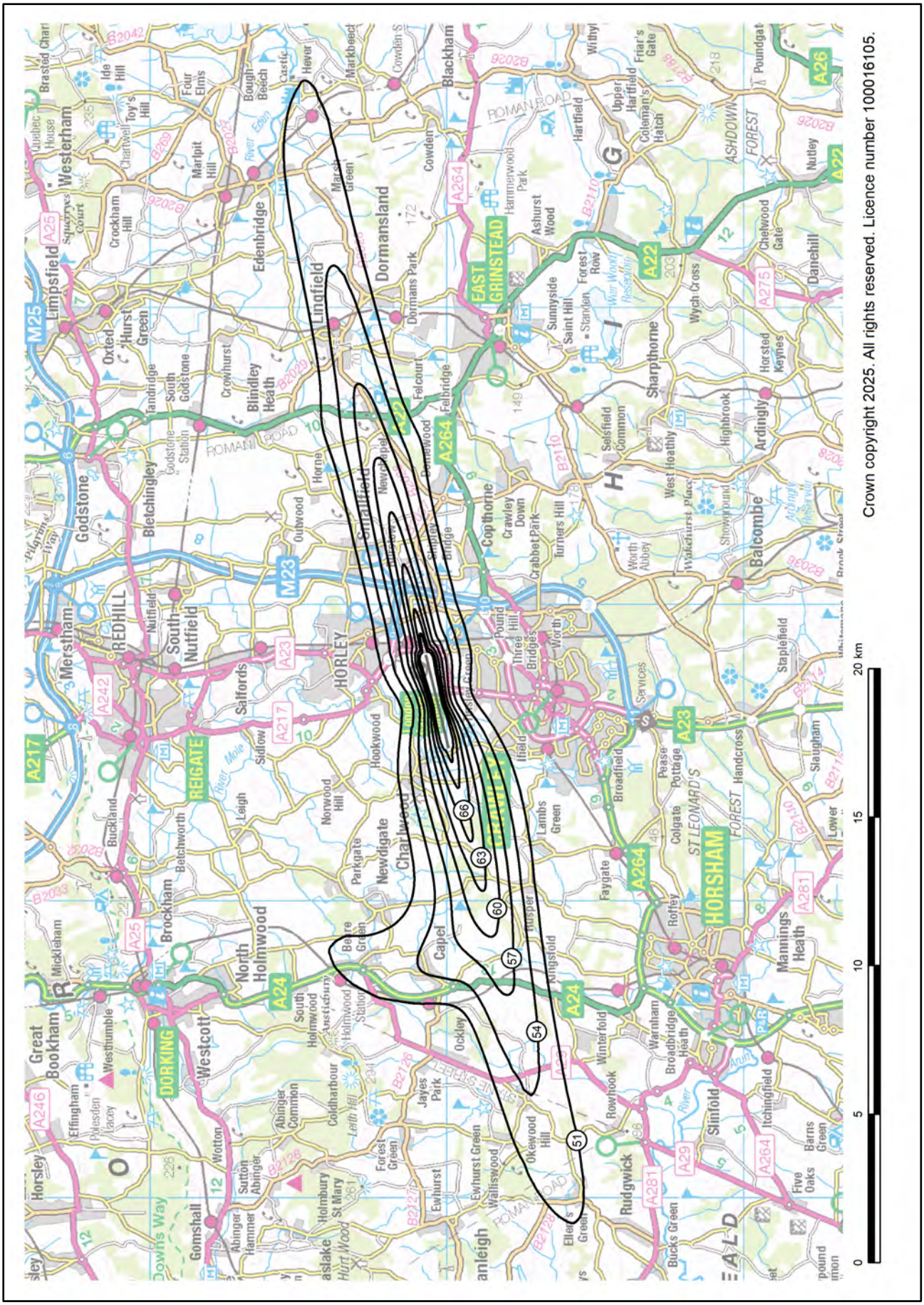


Figure B13 Gatwick 2024 summer day actual modal split (78% W / 22% E) $L_{Aeq,16h}$ contours

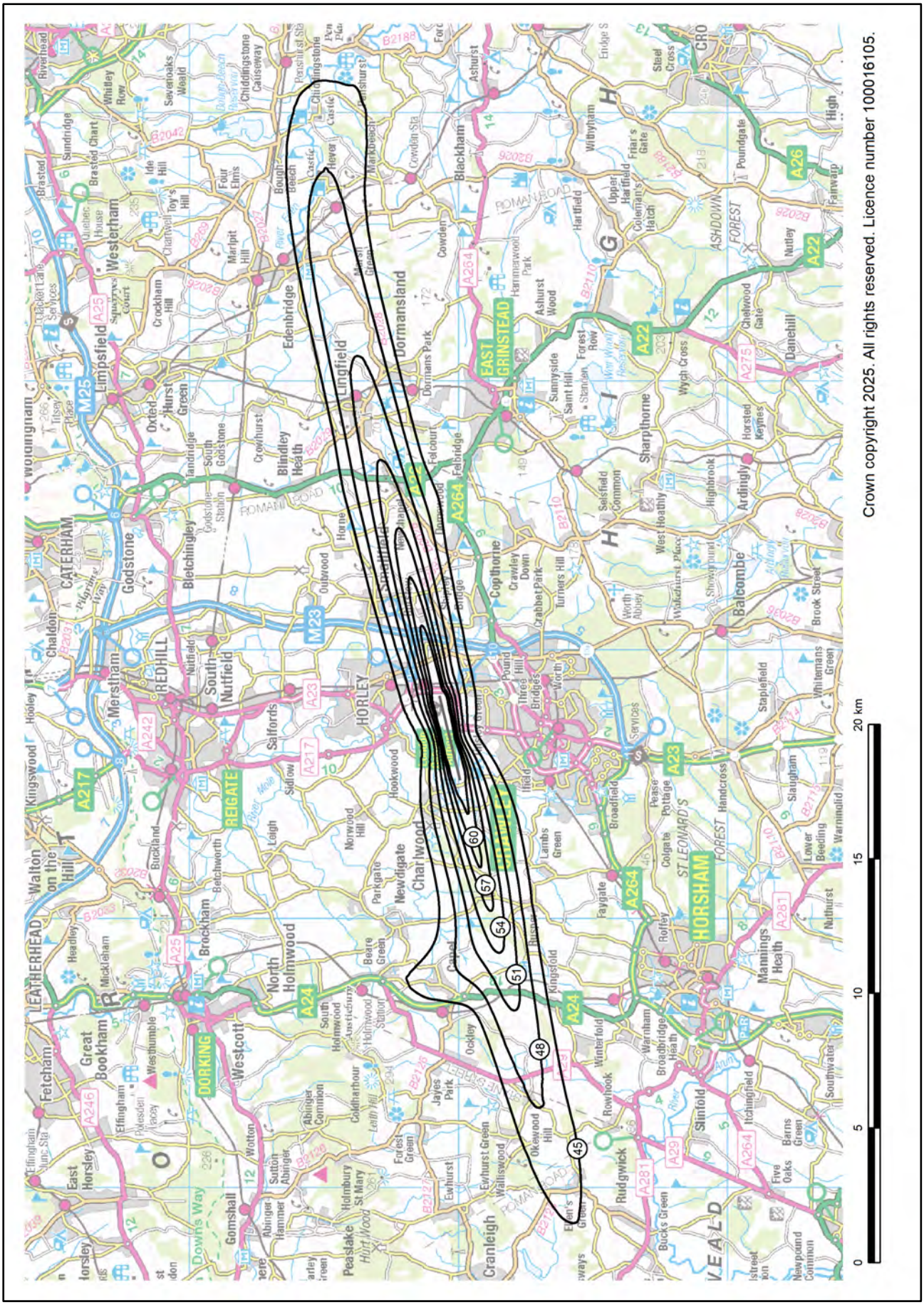


Figure B14 Gatwick 2024 summer night actual modal split (78% W / 22% E) $L_{Aeq,8h}$ contours

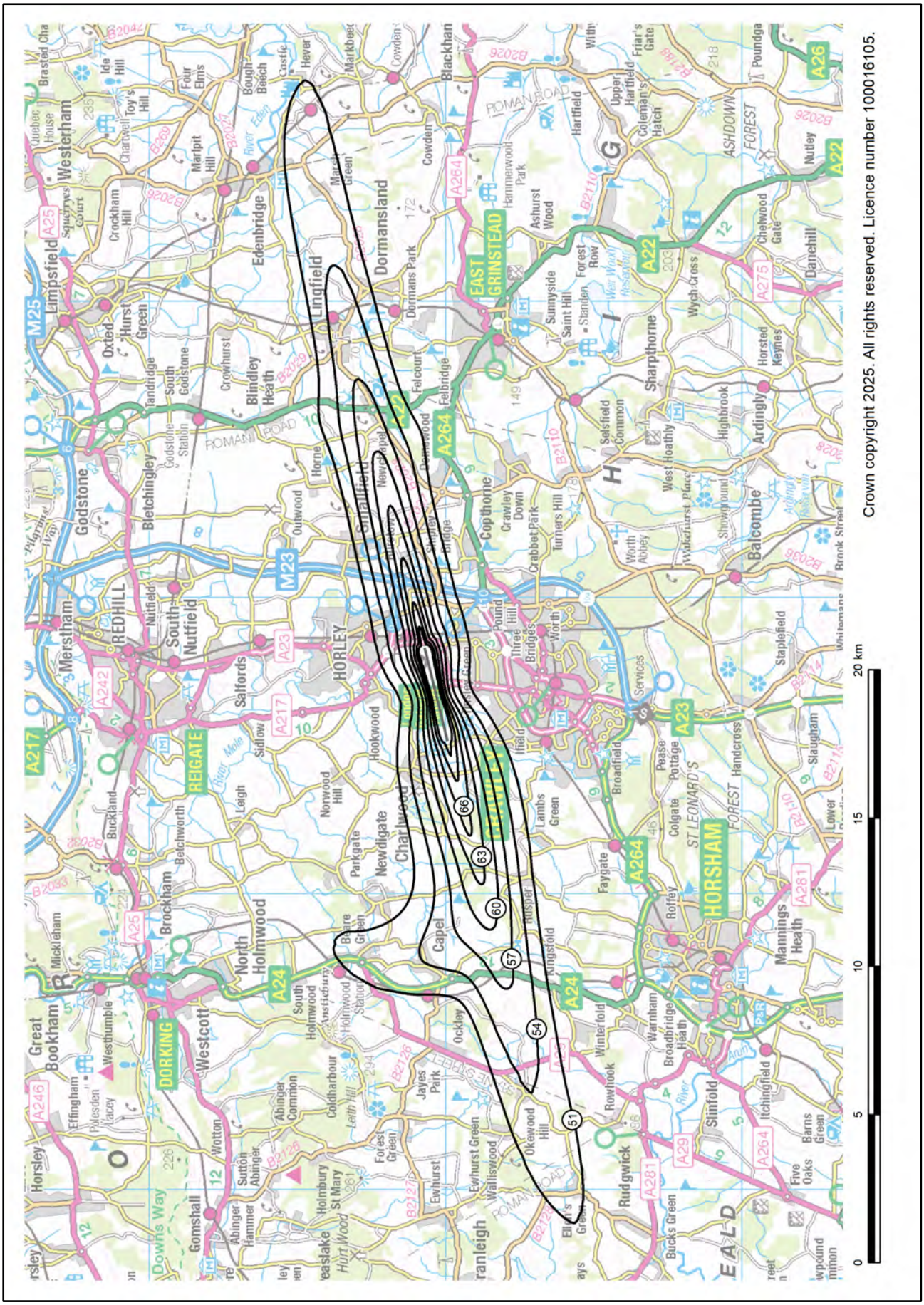
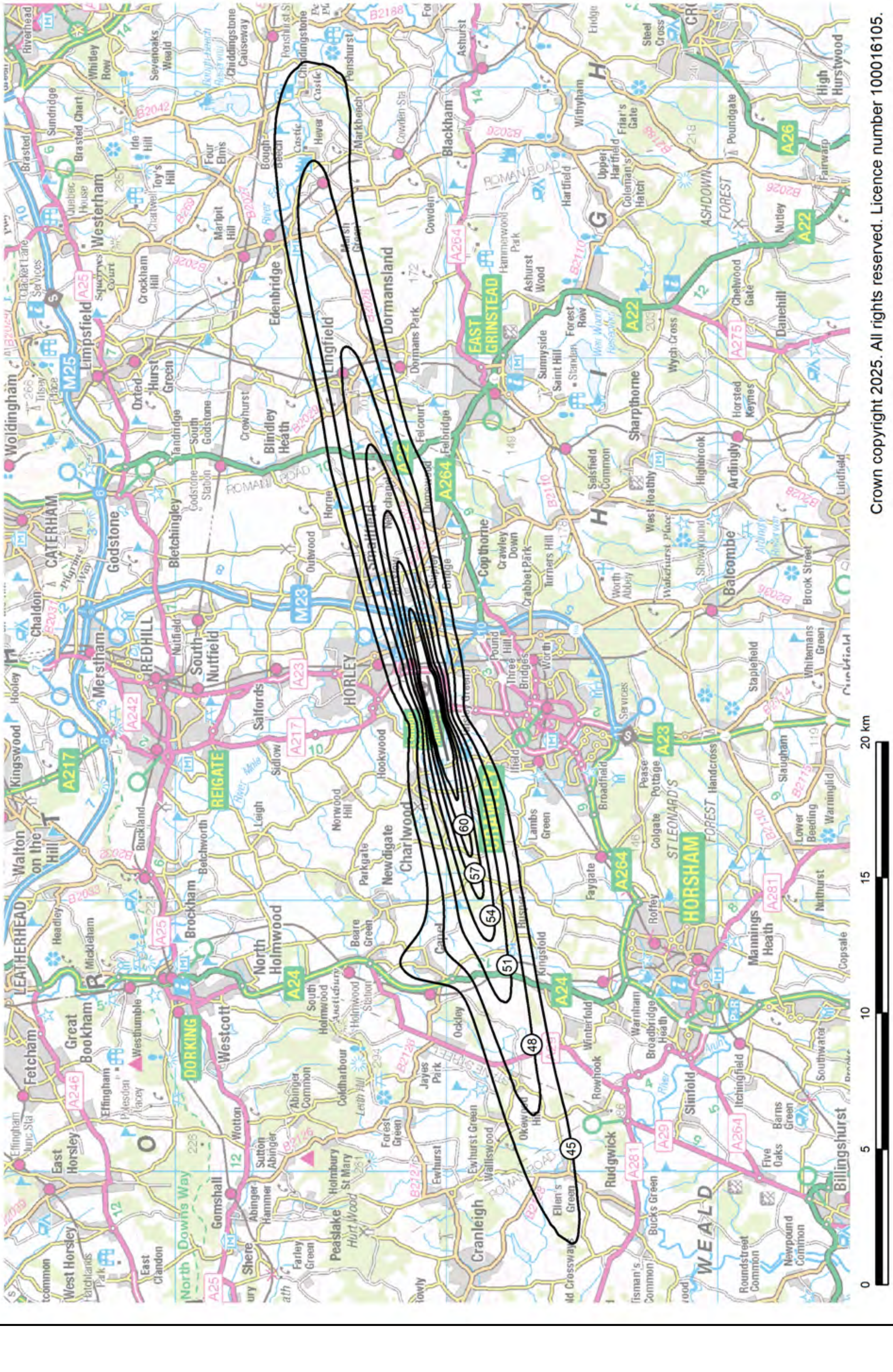


Figure B15 Gatwick 2024 summer day standard modal split (75% W / 25% E) $L_{Aeq,16h}$ contours

Figure B16 Gatwick 2024 summer night 10-year average modal split (73% W / 27% E) $L_{Aeq,8h}$ contours



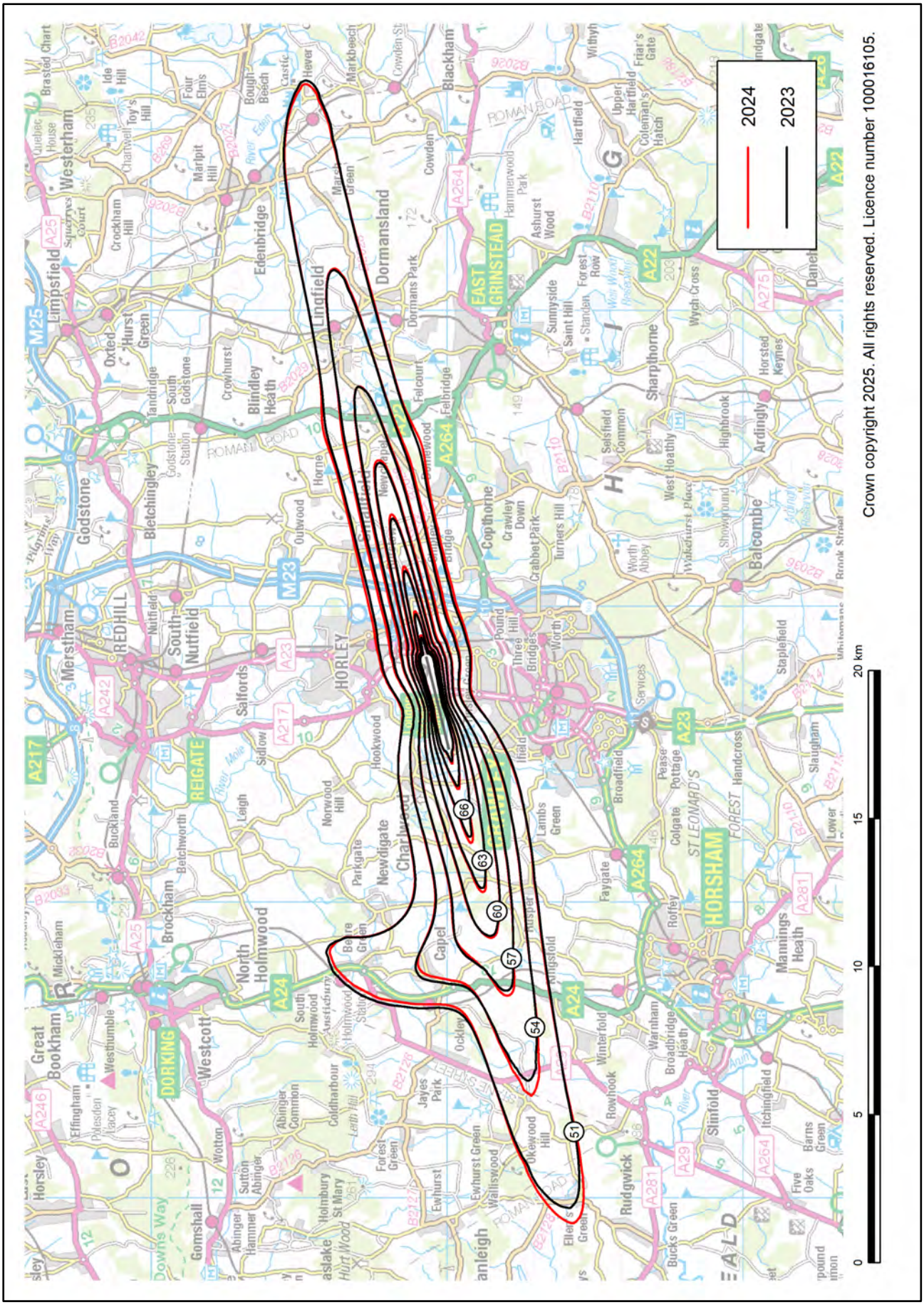


Figure B17 Gatwick summer day actual 2024 (78% W / 22% E) and 2023 (82% W / 18% E) $L_{Aeq,16h}$ contours

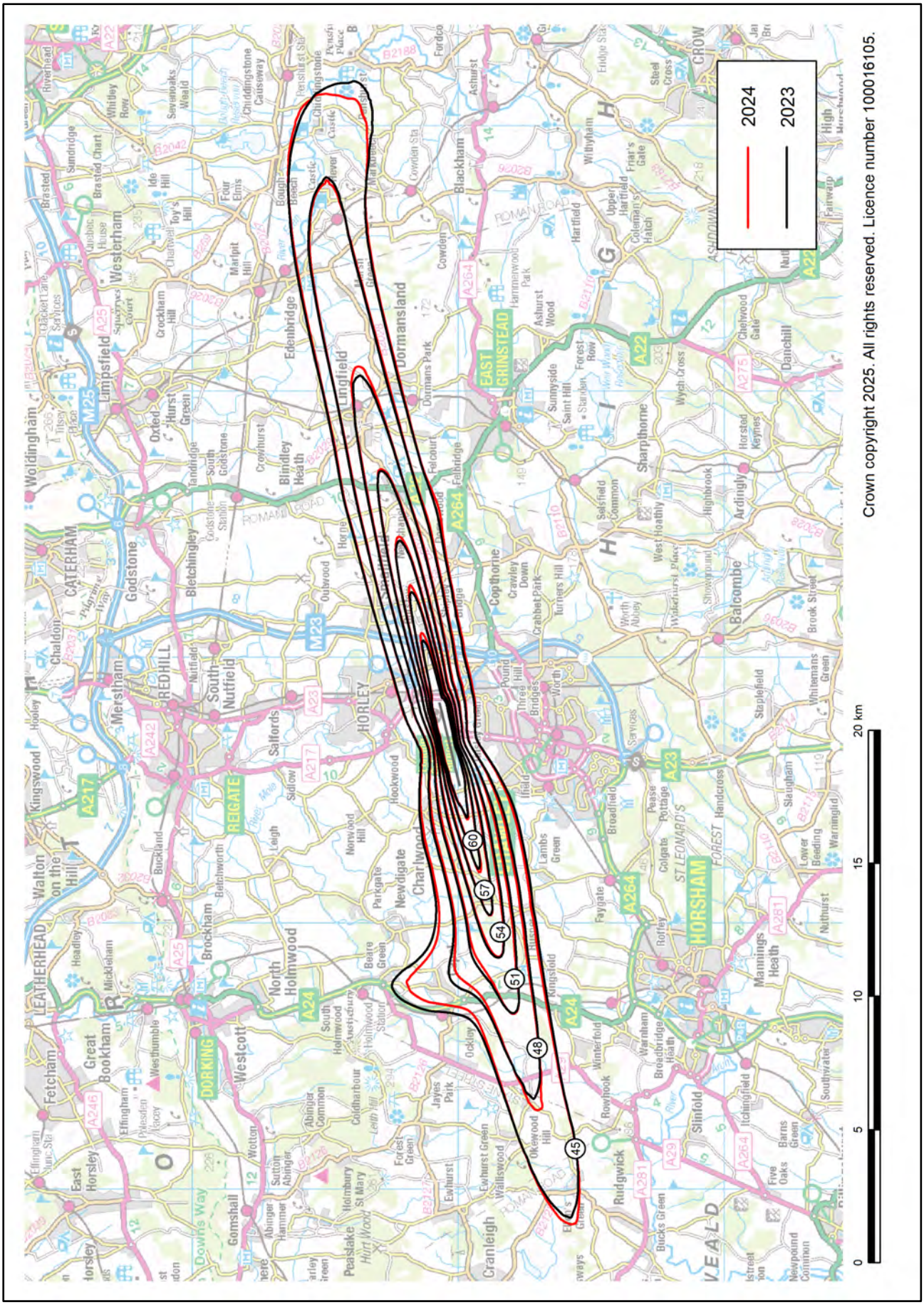


Figure B18 Gatwick summer night actual 2024 (78% W / 22% E) and 2023 (81% W / 19% E) $L_{Aeq,8h}$ contours

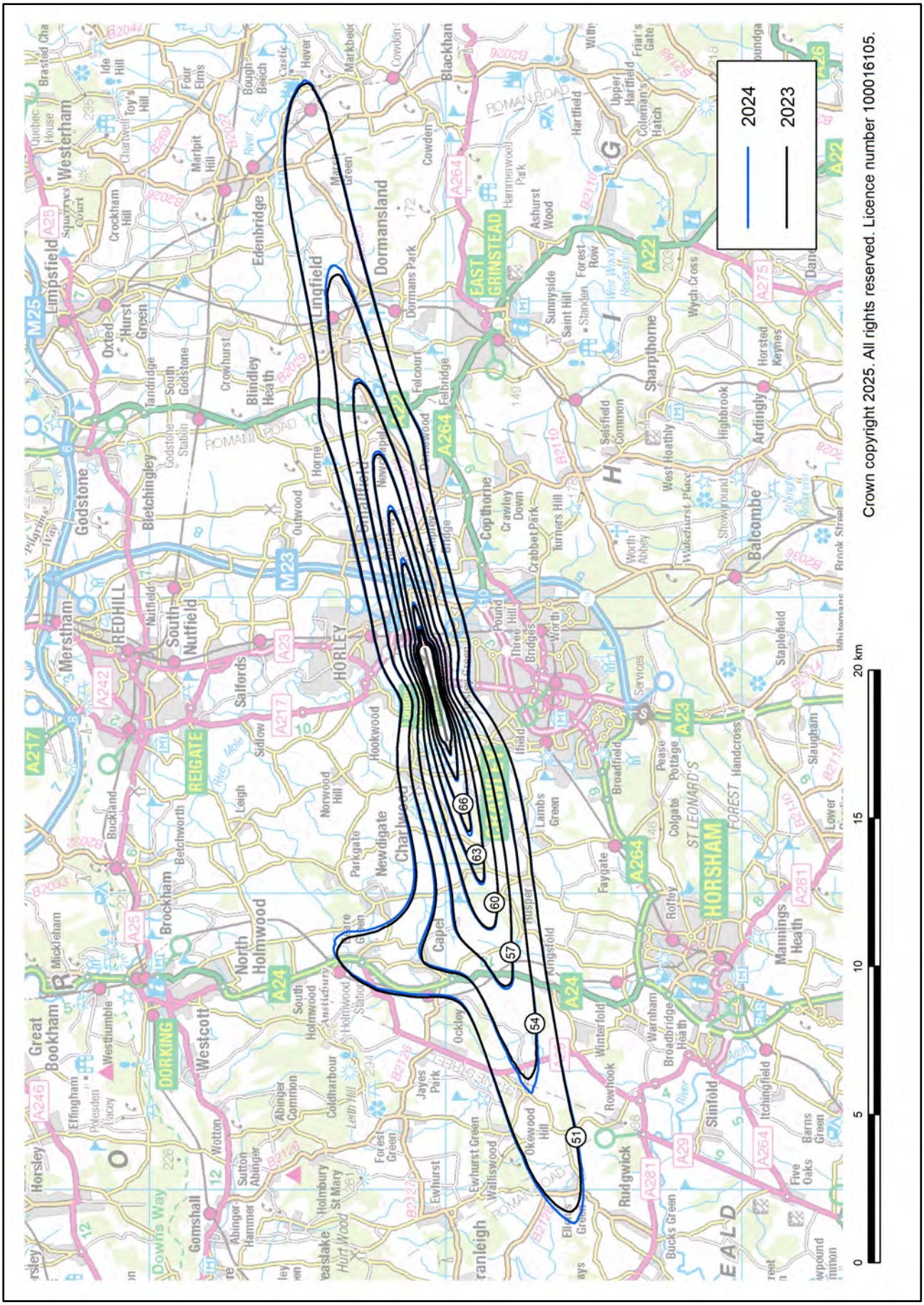


Figure B19 Gatwick summer day standard 2024 (75% W / 25% E) and 2023 (75% W / 25% E) $L_{Aeq,16h}$ contours

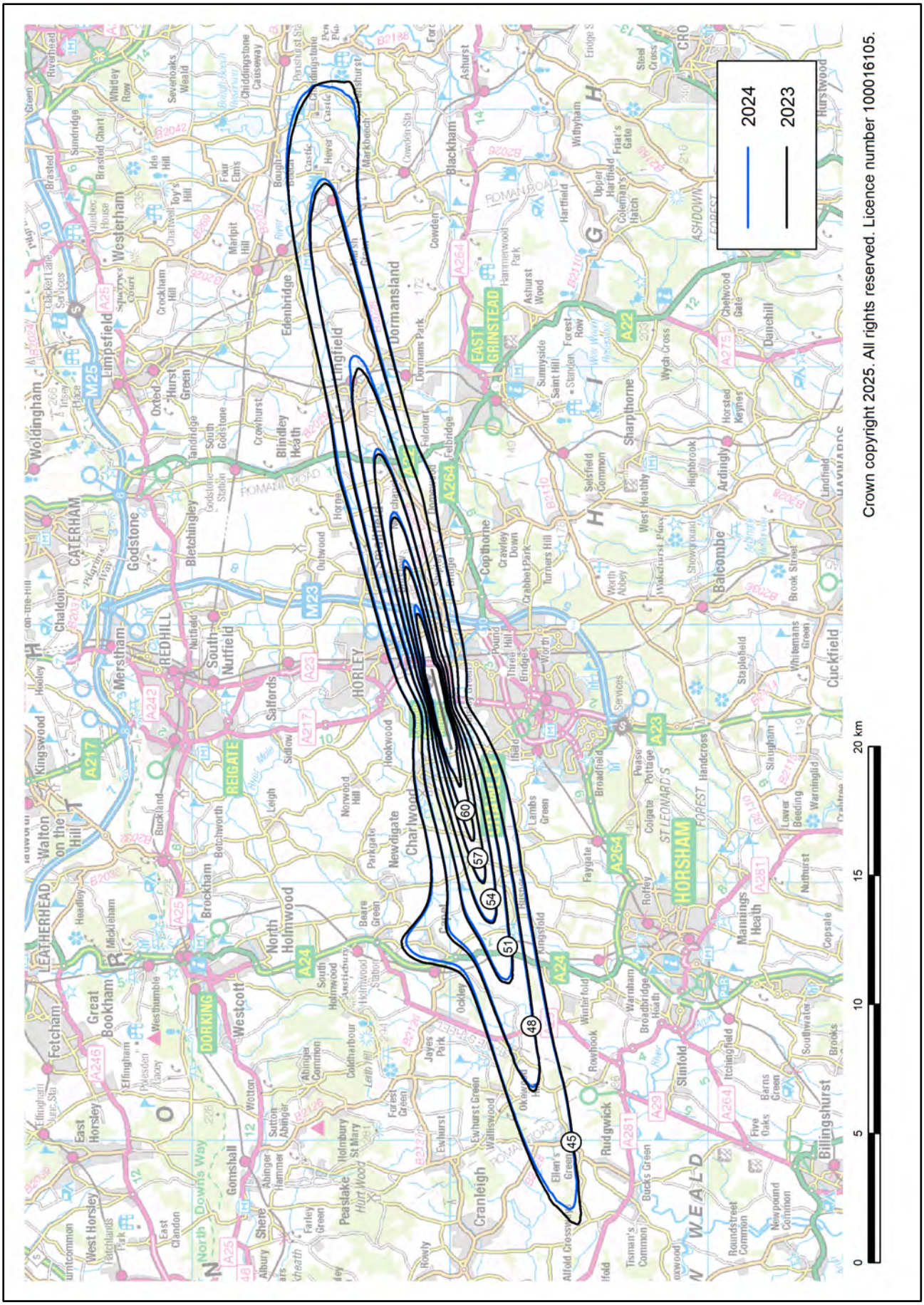


Figure B20 Gatwick summer night 10-year average modal split 2024 (73% W / 27% E) and 2023 (71% W / 29% E) $L_{Aeq,8h}$ contours

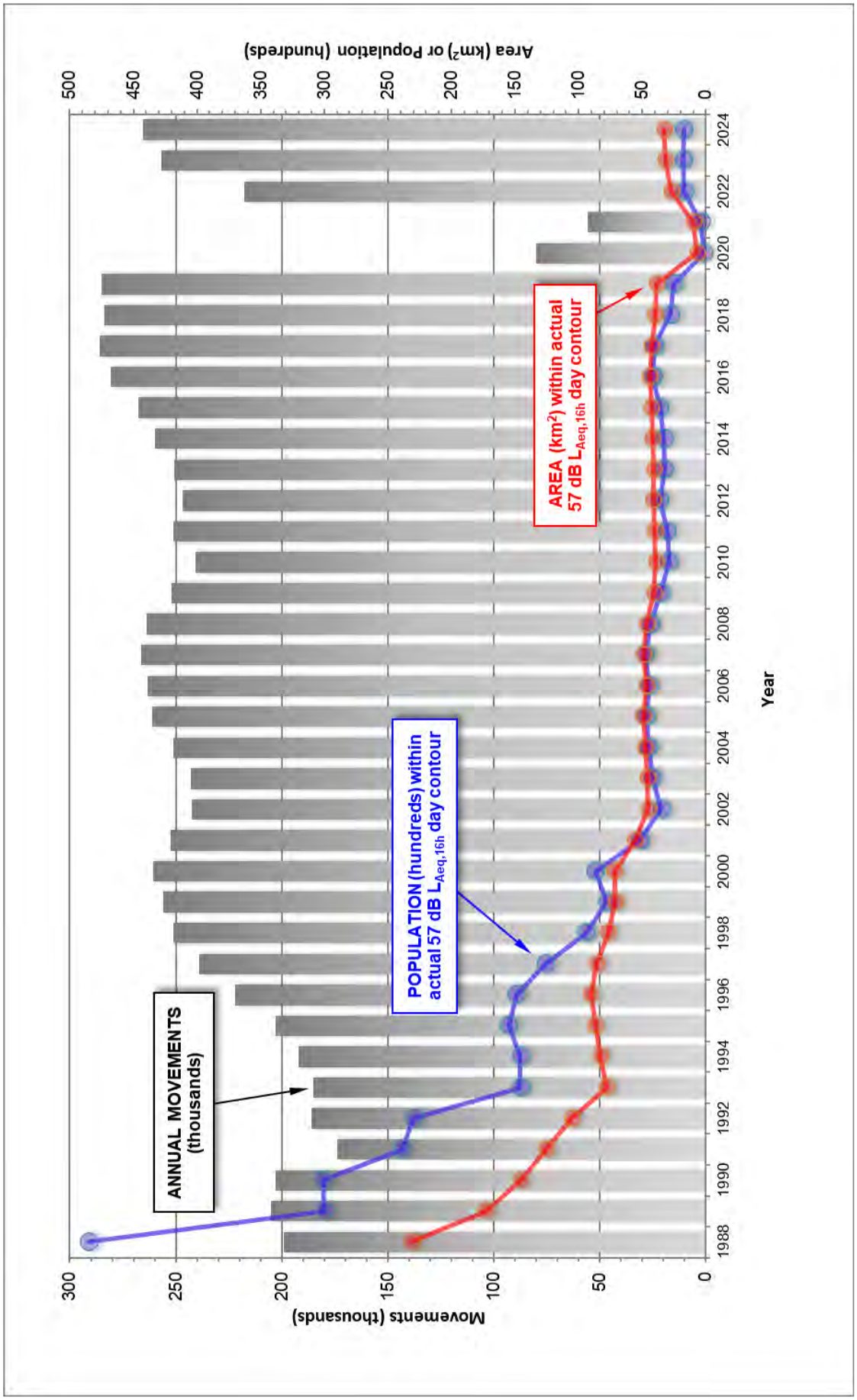


Figure B21 Gatwick 1988-2024 annual traffic and summer day $L_{Aeq,16h}$ noise contour area/population trends

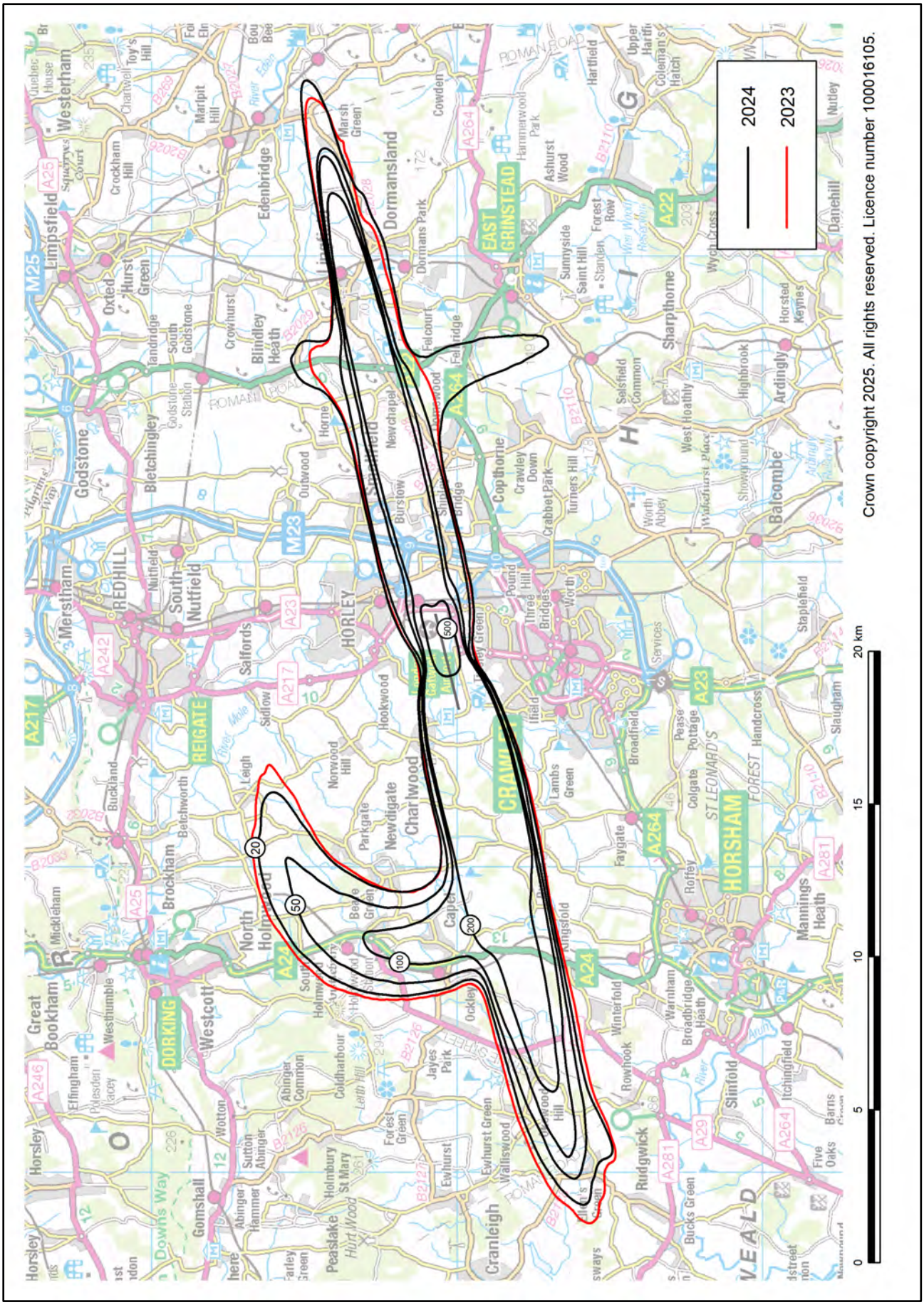


Figure B22 Gatwick 2024 summer day actual modal split (78% W / 22% E) N65 contours

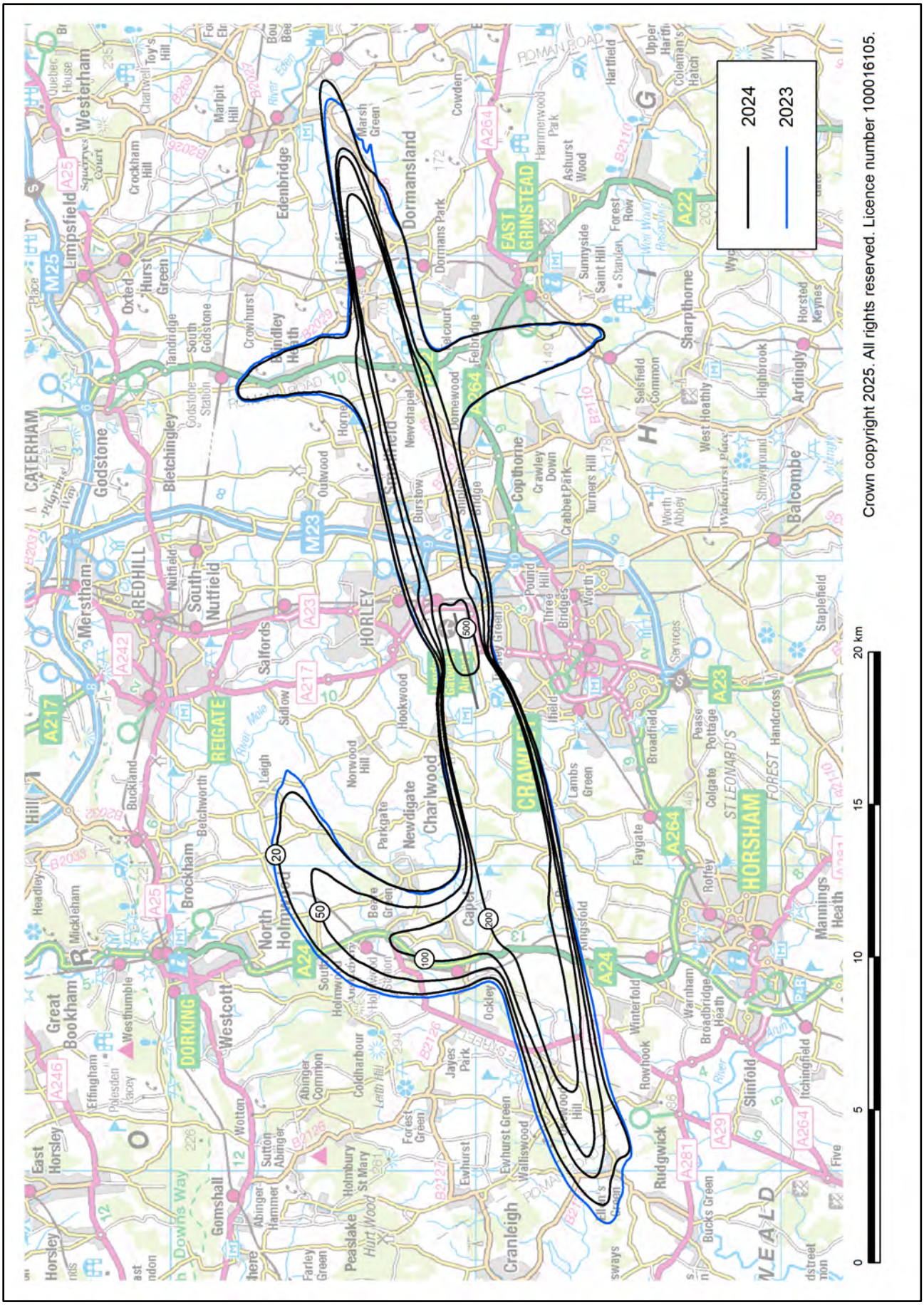


Figure B23 Gatwick 2024 summer day standard modal split (75% W / 25% E) N65 contours

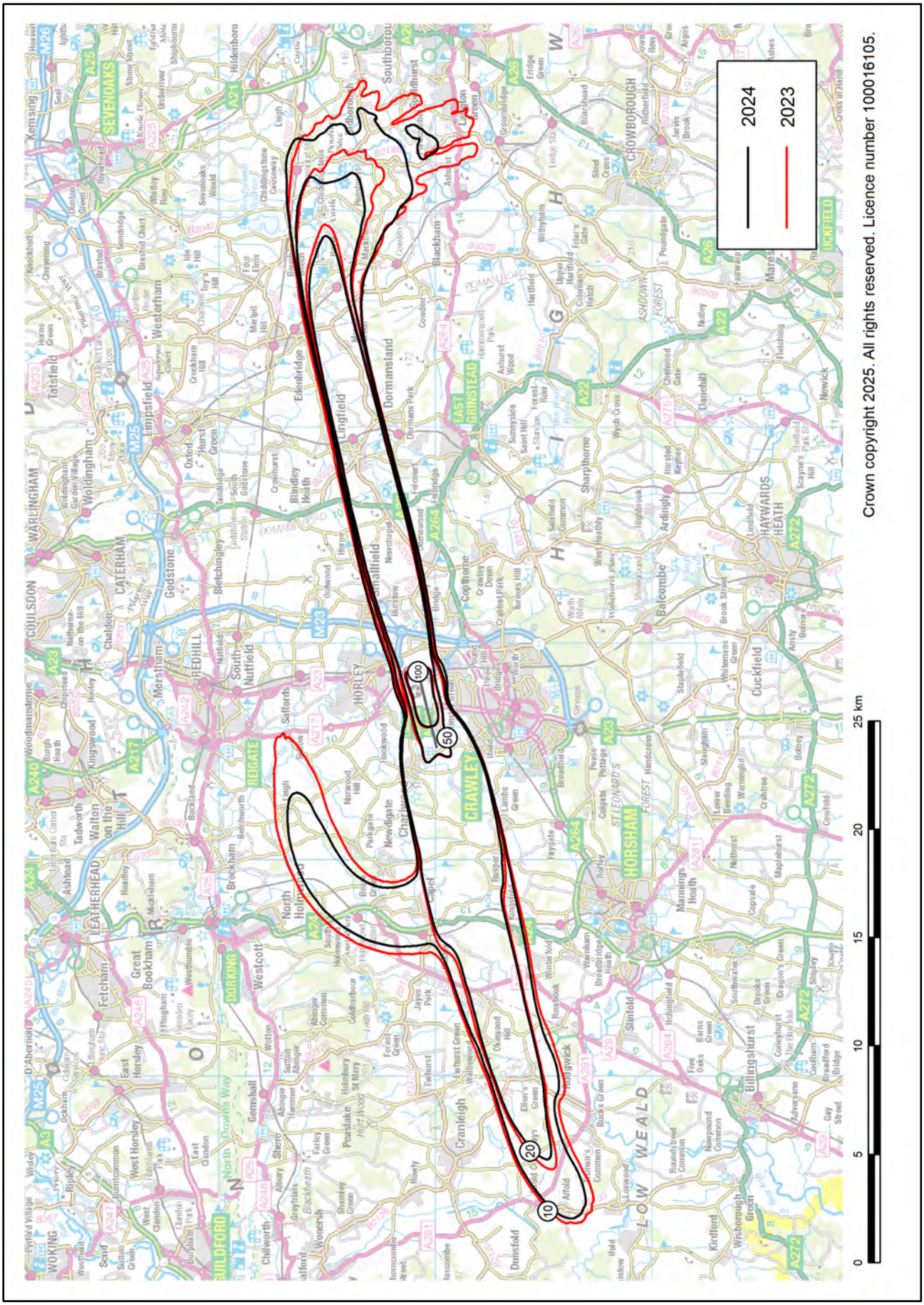


Figure B24 Gatwick 2024 summer night actual modal split (78% W / 22% E) N60 contours

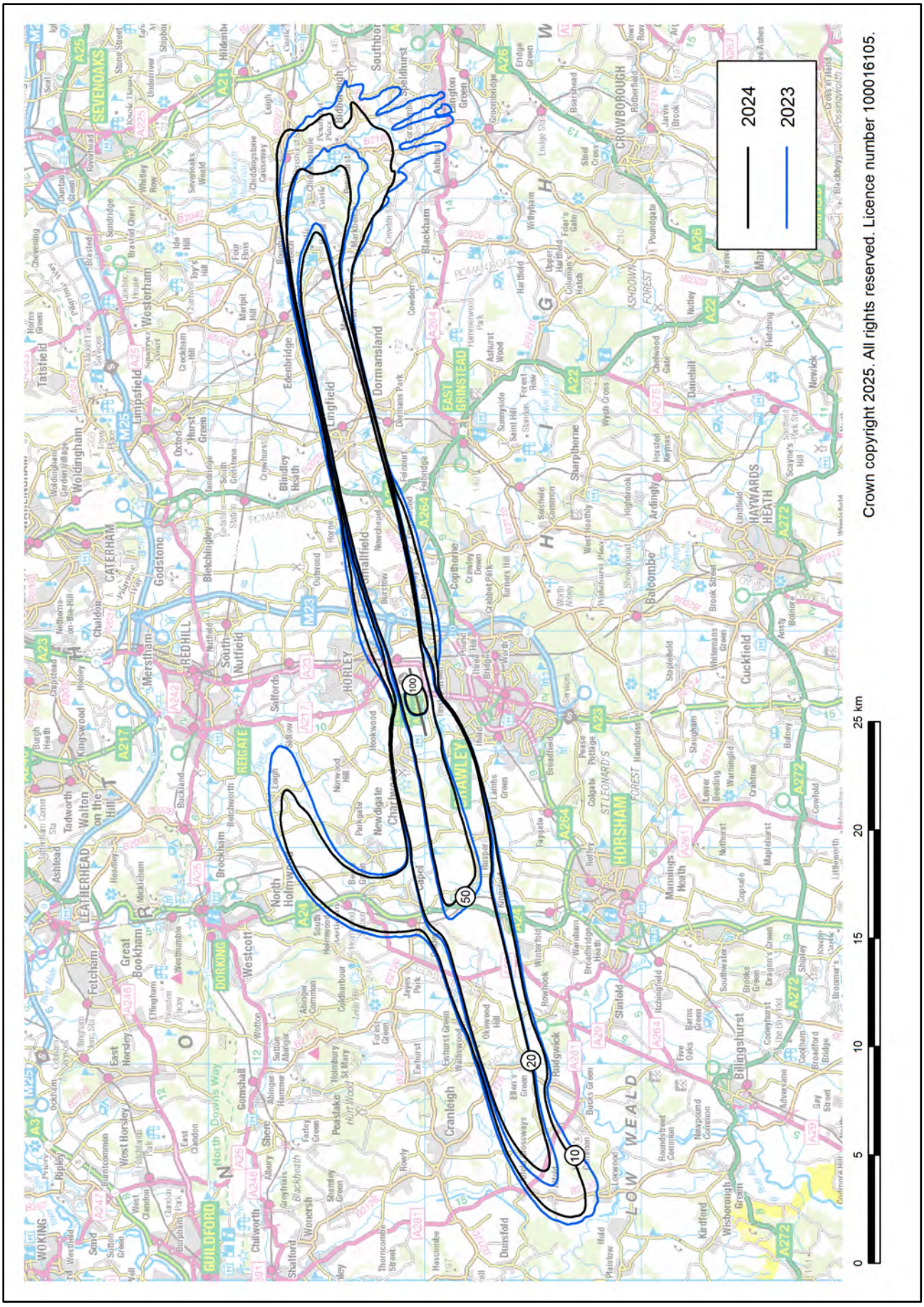


Figure B25 Gatwick 2024 summer night 10-year average modal split (73% W / 27% E) N60 contours

APPENDIX C

Tables

Table C1 Gatwick 2024 average summer day movements by Noise Class

Noise Class	Description	2024 movements	2024 percentage	2023 percentage
A	Small propeller aircraft	< 0.1	< 0.1%	< 0.1%
B	Large propeller aircraft	20.9	3%	2%
C	Narrow-body aircraft	(642.4)	(88%)	(91%)
↘ **C3**	**3rd generation narrow-body** (e.g. B738)	487.0	67%	72%
↘ **C4**	**4th generation narrow-body** (e.g. EA320NEO)	155.4	21%	18%
D	Wide-body twin-engine aircraft	(62.5)	(9%)	(7%)
↘ **D3**	**3rd generation wide-body twin-engine** (e.g. B763G)	29.8	4%	3%
↘ **D4**	**4th generation wide-body twin-engine** (e.g. B789)	32.7	4%	4%
E	Wide-body 4-engine aircraft	(4.9)	(1%)	(1%)
↘ **E3**	**3rd generation wide-body 4-engine** (e.g. B744G)	< 0.1	< 0.1%	0%
↘ **E4**	**4th generation wide-body 4-engine** (e.g. EA38R)	4.8	1%	1%
	Total	**730.8**	100%	100%

Notes:

- Noise Classes C, D and E have each been subdivided into two separate subclasses since 2019.
- Totals are based on unrounded numbers. Percentages may not sum to 100% due to rounding.

Table C2 Gatwick 2024 average summer night movements by Noise Class

Noise Class	Description	2024 movements	2024 percentage	2023 percentage
A	Small propeller aircraft	0.0	0%	0%
B	Large propeller aircraft	< 0.1	< 0.1%	< 0.1%
C	Narrow-body aircraft	(107.0)	(89%)	(93%)
↘ **C3**	3rd generation narrow-body aircraft (e.g. B738)	72.3	60%	71%
↘ **C4**	4th generation narrow-body aircraft (e.g. EA320NEO)	34.7	29%	22%
D	Wide-body twin-engine aircraft	(14.2)	(12%)	(7%)
↘ **D3**	3rd generation wide-body twin-engine aircraft (e.g. B763G)	4.6	4%	3%
↘ **D4**	4th generation wide-body twin-engine aircraft (e.g. B789)	9.5	8%	3%
E	Wide-body 4-engine aircraft	(0.2)	(0.1%)	(0.2%)
↘ **E3**	3rd generation wide-body 4-engine aircraft (e.g. B744G)	0.0	0%	0%
↘ **E4**	4th generation wide-body 4-engine aircraft (e.g. EA38R)	0.2	0.1%	0.2%
	Total	**121.3**	100%	100%

Notes:

- Noise Classes C, D and E have each been subdivided into two separate subclasses since 2019.
- Totals are based on unrounded numbers. Percentages may not sum to 100% due to rounding.

Table C3 Gatwick 2023 and 2024 average summer day movements by ANCON type

ANCON type	2023 departures	2023 arrivals	2023 total	2024 departures	2024 arrivals	2024 total	Change departures	Change arrivals	Change total
B733	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B736	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B738	38.3	35.7	74.0	37.9	35.6	73.5	-0.3	-0.1	-0.4
B738MAX	10.2	9.3	19.5	12.9	11.8	24.7	+2.7	+2.5	+5.2
B739MAX	1.3	1.3	2.6	0.7	0.7	1.4	-0.6	-0.6	-1.2
B757E	0.2	0.2	0.4	0.1	0.1	0.2	-0.1	-0.1	-0.2
B762	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B763G	0.0	0.0	0.0	0.3	0.3	0.7	+0.3	+0.3	+0.7
B763P	0.9	1.0	1.9	0.7	0.7	1.4	-0.2	-0.2	-0.5
B772G	5.4	3.6	9.0	5.3	3.9	9.2	-0.1	+0.3	+0.1
B772R	5.2	4.2	9.4	5.8	4.1	10.0	+0.7	0.0	+0.6
B773G	0.5	0.1	0.6	2.8	1.7	4.5	+2.3	+1.6	+3.8
B773R	0.0	0.0	0.0	0.3	0.0	0.3	+0.3	0.0	+0.3
B788	5.2	3.8	9.0	7.7	5.9	13.6	+2.5	+2.1	+4.6
B789	8.9	7.0	15.9	8.2	5.7	13.8	-0.7	-1.3	-2.0
B7810	0.1	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.0
CRJ	0.0	0.0	0.0	0.1	0.0	0.1	+0.1	0.0	+0.1
E190E2	0.0	0.0	0.0	0.4	0.4	0.7	+0.4	+0.4	+0.7
EA221	0.0	0.0	0.0	0.1	0.1	0.2	+0.1	+0.1	+0.2
EA223	2.1	2.1	4.2	2.4	2.4	4.7	+0.2	+0.2	+0.5
EA31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA319C	84.6	79.2	163.7	75.8	72.9	148.7	-8.8	-6.3	-15.0
EA319V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA320C	89.0	79.8	168.8	86.4	78.4	164.8	-2.6	-1.4	-4.0
EA320NC	19.8	16.5	36.3	21.9	19.0	40.9	+2.0	+2.6	+4.6
EA320NP	5.6	5.5	11.0	6.0	6.0	12.1	+0.5	+0.5	+1.0
EA320V	37.2	29.5	66.7	31.6	27.5	59.1	-5.6	-2.0	-7.6
EA321C	0.7	0.8	1.5	0.4	0.4	0.7	-0.4	-0.4	-0.8
EA321NC	12.7	9.7	22.4	15.2	11.4	26.5	+2.5	+1.6	+4.1
EA321NP	18.3	17.2	35.5	23.5	21.4	44.9	+5.2	+4.2	+9.4
EA321V	18.1	13.3	31.4	20.3	15.2	35.5	+2.2	+1.9	+4.1
EA33	2.2	1.2	3.3	2.0	1.8	3.8	-0.2	+0.7	+0.5
EA33NEO	0.0	0.0	0.0	0.6	0.2	0.8	+0.5	+0.2	+0.7
EA34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA359	0.3	0.3	0.7	3.5	0.8	4.3	+3.2	+0.4	+3.6
EA38GP	1.4	1.5	2.9	1.7	1.7	3.4	+0.2	+0.2	+0.5
EA38R	1.4	1.4	2.8	0.7	0.8	1.4	-0.8	-0.6	-1.4
ERJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ANCON type	2023 departures	2023 arrivals	2023 total	2024 departures	2024 arrivals	2024 total	Change departures	Change arrivals	Change total
ERJ170	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
ERJ190	4.4	4.4	8.8	1.3	1.4	2.7	-3.1	-3.0	-6.1
EXE3	0.4	0.4	0.8	0.4	0.4	0.8	0.0	0.0	0.0
LTT	5.5	5.6	11.1	10.4	10.4	20.9	+4.9	+4.9	+9.8
SP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**380.2**	**334.6**	**714.8**	**387.4**	**343.3**	**730.8**	**+7.2**	**+8.7**	**+15.9**
							(+2%)	(+3%)	(+2%)

Note: All numbers are rounded to 1 decimal place. Movement changes have been calculated from unrounded numbers.

Table C4 Gatwick 2023 and 2024 average summer night movements by ANCON type

ANCON type	2023 departures	2023 arrivals	2023 total	2024 departures	2024 arrivals	2024 total	Change departures	Change arrivals	Change total
B733	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B736	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B738	3.0	5.6	8.6	2.7	5.0	7.7	-0.3	-0.6	-0.8
B738MAX	1.3	2.2	3.6	1.2	2.3	3.5	-0.1	0.0	-0.1
B772G	0.0	1.8	1.8	0.0	1.4	1.4	0.0	-0.4	-0.4
B772R	0.0	1.0	1.0	0.0	1.8	1.8	0.0	+0.7	+0.8
B773G	0.0	0.5	0.5	0.0	1.1	1.2	0.0	+0.7	+0.7
B773R	0.0	0.0	0.0	0.0	0.2	0.2	0.0	+0.2	+0.2
B788	0.4	1.8	2.2	0.9	2.7	3.7	+0.5	+0.9	+1.4
B789	0.0	1.9	2.0	0.1	2.6	2.7	+0.1	+0.7	+0.7
CRJ	0.0	0.0	0.0	0.0	0.1	0.1	0.0	+0.1	+0.1
EA319C	11.5	16.9	28.4	8.4	11.4	19.8	-3.1	-5.5	-8.6
EA320C	10.5	19.8	30.3	10.8	18.9	29.7	+0.2	-0.9	-0.6
EA320NC	2.9	6.2	9.1	5.2	8.1	13.3	+2.3	+1.8	+4.2
EA320NP	0.2	0.3	0.5	0.2	0.2	0.4	0.0	-0.1	-0.1
EA320V	3.0	10.7	13.7	1.9	6.0	7.9	-1.1	-4.7	-5.8
EA321C	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
EA321NC	3.3	6.2	9.4	3.4	7.3	10.7	+0.2	+1.1	+1.3
EA321NP	1.8	2.8	4.6	2.4	4.4	6.8	+0.6	+1.6	+2.2
EA321V	1.4	6.2	7.6	0.9	6.0	7.0	-0.5	-0.1	-0.6
EA33	0.0	1.0	1.0	0.0	0.1	0.1	0.0	-0.8	-0.8
EA33NEO	0.0	0.0	0.0	0.0	0.4	0.4	0.0	+0.4	+0.4
EA359	0.0	0.0	0.0	0.0	2.8	2.8	0.0	+2.8	+2.8
EA38GP	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0
EA38R	0.1	0.1	0.2	0.1	0.0	0.1	0.0	-0.1	-0.1
ERJ170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ERJ190	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXE3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
LTT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**39.5**	**85.0**	**124.5**	**38.5**	**82.8**	**121.3**	**-1.0**	**-2.2**	**-3.2**
							(-3%)	(-3%)	(-3%)

Note: All numbers are rounded to 1 decimal place. Movement changes have been calculated from unrounded numbers.

APPENDIX D

ANCON type descriptions

Table D1 ANCON type descriptions

ANCON type	Description
B717	Boeing 717
B727	Boeing 727 (Chapter 2&3)
B732	Boeing 737-200 (Chapter 2&3)
B733	Boeing 737-300/400/500
B736	Boeing 737-600/700
B738	Boeing 737-800/900
B738MAX	Boeing 737 MAX 8
B739MAX	Boeing 737 MAX 9
B747	Boeing 747-100 & 200/300 series (certificated to Chapter 3)
B744G	Boeing 747-400 with General Electric CF6-80F engines
B744P	Boeing 747-400 with Pratt & Whitney PW4000 engines
B744R	Boeing 747-400 with Rolls-Royce RB211 engines
B747SP	Boeing 747SP
B748	Boeing 747-8
B753	Boeing 757-300
B757C	Boeing 757-200 with Rolls-Royce RB211-535C engines
B757E	Boeing 757-200 with Rolls-Royce RB211-535E4/E4B engines
B757P	Boeing 757-200 with Pratt & Whitney PW2037/2040 engines
B762	Boeing 767-200
B763G	Boeing 767-300 with General Electric CF6-80 engines
B763P	Boeing 767-300 with Pratt & Whitney PW4000 engines
B763R	Boeing 767-300 with Rolls-Royce RB211 engines
B764	Boeing 767-400
B772G	Boeing 777-200 with General Electric GE90 engines
B772P	Boeing 777-200 with Pratt & Whitney PW4000 engines
B772R	Boeing 777-200 with Rolls-Royce Trent 800 engines
B773G	Boeing 777-200LR/300ER with General Electric GE90 engines
B773P	Boeing 777-300 with Pratt & Whitney PW4000 engines
B773R	Boeing 777-300 with Rolls-Royce Trent 800 engines
B788	Boeing 787-8
B789	Boeing 787-9
BA46	BAe 146/Avro RJ series
CRJ	Bombardier CRJ100/200 series

ANCON type	Description
CRJ700	Bombardier CRJ700 series
CRJ900	Bombardier CRJ900 series
DC10	McDonnell Douglas DC-10
EA221	Airbus A220-100
EA223	Airbus A220-300
EA30	Airbus A300
EA31	Airbus A310
EA318	Airbus A318
EA319C	Airbus A319 with CFM56 engines
EA319V	Airbus A319 with IAE V2500 engines
EA320C	Airbus A320 with CFM56 engines
EA320NEO	Airbus A320neo *(NB: replaced by EA320NC/EA320NP from 2023)*
EA320NC	Airbus A320neo with CFM LEAP-1A engines
EA320NP	Airbus A320neo with Pratt & Whitney PW1100G engines
EA320V	Airbus A320 with IAE V2500 engines
EA321C	Airbus A321 with CFM56 engines
EA321NEO	Airbus A321neo *(NB: replaced by EA321NC/EA321NP from 2023)*
EA321NC	Airbus A321neo with CFM LEAP-1A engines
EA321NP	Airbus A321neo with Pratt & Whitney PW1100G engines
EA321V	Airbus A321 with IAE V2500 engines
EA33	Airbus A330
EA34	Airbus A340-200/300
EA346	Airbus A340-500/600
EA359	Airbus A350-900
EA3510	Airbus A350-1000
EA38GP	Airbus A380 with Engine Alliance GP7000 engines
EA38R	Airbus A380 with Rolls-Royce Trent 900 engines
ERJ	Embraer ERJ 135/145
ERJ170	Embraer E-170/175
ERJ190	Embraer E-190/195
EXE2	Chapter 2 executive jets
EXE3	Chapter 3 executive jets
FK10	Fokker 70/100

ANCON type	Description
L101	Lockheed L-1011 TriStar
L4P	Large four-engine propeller
LTT	Large twin-turboprop
MD11	McDonnell Douglas MD-11
MD80	McDonnell Douglas MD-80 series
SP	Single propeller
STP	Small twin-piston
STT	Small twin-turboprop
TU54	Tupolev Tu-154

Glossary

Glossary	
AIP	Aeronautical Information Publication
AMSL	Above Mean Sea Level
ANCON	The UK civil aircraft noise contour model, developed and maintained by ERCD.
ATC	Air Traffic Control
CAA	Civil Aviation Authority
dB	Decibel units describing sound level or changes of sound level.
DfT	Department for Transport (UK Government)
ERCD	Environmental Research and Consultancy Department
FOPP	Fuel Over Pressure Protector
GAL	Gatwick Airport Limited
ICAO	International Civil Aviation Organization
L_{Aeq}	Equivalent sound level of aircraft noise in dBA, often called ‘equivalent continuous sound level’.
$L_{Aeq,16h}$	Equivalent A-weighted sound level of aircraft noise for the 16-hour daytime period (07:00-23:00 local time)
$L_{Aeq,8h}$	Equivalent A-weighted sound level of aircraft noise for the 8-hour night-time period (23:00-07:00 local time)
L_{Amax}	A-weighted maximum sound level of a noise event.
N60	Number of aircraft noise events above 60 dB L_{Amax}.
N65	Number of aircraft noise events above 65 dB L_{Amax}.
NPD	Noise-Power-Distance
NPR	Noise Preferential Route
NTK	Noise and Track Keeping monitoring system
OS	Ordnance Survey, the national mapping agency of Great Britain

Glossary	
SEL	Sound Exposure Level – the steady noise level, which over a period of one second contains the same sound energy as the whole aircraft noise event. It is equivalent to the L_{Aeq} of the noise event normalised to one second.
SID	Standard Instrument Departure