Environmental Research and Consultancy Department

UK Civil Aviation Authority

Noise Exposure Contours for Stansted Airport 2025

ERCD REPORT 2603

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Summary

1. This report presents the 2025 average summer day and night noise exposure contours generated for London Stansted Airport.

2. The noise modelling used radar and noise data from Stansted'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.

3. There were 517.6 average daily movements in the 2025 summer 16-hour daytime period, which was 1% higher than the previous year (2024: 510.5). The B738MAX ANCON type had the highest increase in movements of 22.5 per 16-hour day.

4. There were 101.1 movements on average per 8-hour night over the 2025 summer period, a decrease of 5% from 2024 (106.5). The largest movement decrease at night was for the B738, which was down by 7.2 movements.

5. The area of the 2025 average summer day actual modal split (72% SW / 28% NE) 51 dB $L_{Aeq,16h}$ contour increased by 4% to 94.3 km^2 (2024: 91.1 km^2). The population count within this contour was 16,600, an 18% increase from 2024 (14,100). The area increase resulted mainly from upwards noise adjustments made to some of the noise dominant types, especially the B738 on departure, as part of the 2025 noise validation exercise.

6. The area of the 2025 average summer night actual modal split (71% SW / 29% NE) 45 dB $L_{Aeq,8h}$ contour was 131.4 km^2, an increase of 2% from the previous year (2024: 128.4 km^2). The population count within this contour was 24,600, 14% higher than in 2024 (21,600). The area increase resulted mainly from upwards noise adjustments made to some of the noise dominant types, especially the B738 on departure, as part of the 2025 noise validation exercise.

7. The area of the 2025 average summer day standard modal split (73% SW / 27% NE) 51 dB $L_{Aeq,16h}$ contour increased by 4% to 94.3 km^2 (2024: 91.1 km^2). The population count within this contour was 16,900, 23% higher than in 2024 (13,700). The standard 57 dB $L_{Aeq,16h}$ contour area (26.9 km^2) was below the 33.9 km^2 contour area limit imposed by Stansted's current noise condition.

8. The 2025 average summer night standard modal split (72% SW / 28% NE) 45 dB $L_{Aeq,8h}$ contour area was 131.3 km^2 (2024: 129.9 km^2), an increase of 1%. The population count within this contour increased by 8% to 24,600 (2024: 22,700).

9. Contours were also produced for the supplementary noise metric N60. The area of the 2025 average summer day standard modal split (73% SW / 27% NE) N60 50-event contour was 225.9 km^2 (2024: 205.3 km^2) with a population count of 40,000 (2024: 33,900). The area of the 2025 average summer night standard modal split (72% SW / 28% NE) N60 10-event contour was 200.4 km^2 (2024: 199.1 km^2) with a population count of 39,400 (2024: 34,900).

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 Stansted Airport. Up until 2015, this work was carried out on behalf of the Department for Transport (DfT). Since 2016, ERCD has been commissioned directly by Stansted Airport Ltd (STAL).

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

1.3 The 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. 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}, like 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 for Stansted have therefore been plotted down to the lower level of 54 dB since 2017. At the airport's request, the $L_{Aeq,16h}$ contours since 2020 have also been plotted at 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[1] airports. Since 2013, night-time $L_{Aeq,8h}$ contours have therefore been calculated for Stansted from 48 to 72 dB in 3 dB steps in accordance with standard practice. At the airport's request, the $L_{Aeq,8h}$ contours since 2020 have also been plotted at the 45 dB level, this being

[1] 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.

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 metric N60 have also been produced. N60 contours indicate the number of aircraft noise events exceeding a maximum sound level (L_{Amax}) of 60 dB at a given location.

1.7 The objectives of this report are to explain the noise modelling methodology used to produce the 2025 day and night contours for Stansted Airport, to present the calculated noise contours and to assess the changes from the previous year (**Ref 5**). Long-term trends are also examined.

Stansted Airport

1.8 Stansted Airport is situated 35 miles (56 km) north-east of London and is surrounded by countryside and small villages to the north, south and east, and by the town of Bishop's Stortford to the west (**Figure B1** of **Appendix B**).

1.9 Stansted Airport has a single runway, designated 04/22, which is 3,049 m long. The Runway 04 landing threshold[2] is displaced by 300 m. There is one main passenger terminal. The layout of the runway, taxiways and passenger terminal is shown in **Figure B2**.[3]

1.10 In the 2025 calendar year there were approximately 203,000 aircraft movements at Stansted (2024: 201,000) and the airport handled 29.8 million passengers[4] (2024: 29.7 million).

1.11 Following the grant of planning permission in June 2021 for use of the airport up to 43 million passengers per annum (mppa), a new noise condition was imposed that states:

> *"The area enclosed by the 57 dB(A) Leq,16h (0700-2300) contour shall not exceed 33.9 sq km for daytime noise. By the end of the first calendar year that annual passenger throughput exceeds 35million, the area enclosed by the following contours shall not exceed the limits in Table 1:*

Table 1

54 dB LAeq,16hr	*57.4 km²*
48 dB LAeq,8hr	*74.0 km²*

[2] 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.

[3] NATS UK AIP, AD 2-EGSS-2-1

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

By the end of 2032 or by the end of the first calendar year that annual passenger throughput reaches 43million (whichever is sooner), Stansted Airport Limited, or any successor or airport operator, shall reduce the areas enclosed by the noise contours as set out in Table 2. Thereafter the areas enclosed by the contours as set out in Table 2, shall not be exceeded.

Table 2

54 dB LAeq,16hr	*51.9 km^2*
48 dB LAeq,8hr	*73.6 km^2*

For the purposes of this condition, the noise contour shall be calculated by the Civil Aviation Authority's Environmental Research and Consultancy Department (ERCD) Aircraft Noise Contour model (current version 2.4), (or as may be updated or amended) or, following approval by the local planning authority, any other noise calculation tool such as the Federal Aviation Administration Aviation Environmental Design Tool (current version 3.0c) providing that the calculations comply with European Civil Aviation Conference Doc 29 4th Edition (or as may be updated or amended) and that the modelling is undertaken in line with the requirements of CAA publication CAP2091 (CAA Policy on Minimum Standards for Noise Modelling). All noise contours shall be produced using the standardised average mode.

To allow for the monitoring of aircraft noise, the airport operator shall make noise contour mapping available to the local planning authority annually as part of demonstrating compliance with this condition. Contours should be provided in 3dB increments from 51 dB LAeq,16hr and 45 dB LAeq,8hr."

1.12 The airport has not surpassed 35 mppa and therefore, based on the above planning condition, the area of the standard (i.e. 20-year average) runway modal split 57 dB $L_{Aeq,16h}$ contour is not to exceed a limit of 33.9 km^2.

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 the annual contours for Heathrow and Gatwick airports, and several 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 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).

Radar data

2.3 The noise modelling carried out by ERCD used radar data extracted from Stansted Airport's Noise and Track Keeping (NTK) system. 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 flight profiles, were based on 2025 summer radar data.

Flight tracks

2.4 Aircraft departing Stansted 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 Stansted NPR/SID routes are illustrated in **Figure B3**.

2.5 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 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 4,000 ft[5] 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.

2.6 Departure and arrival flight tracks were modelled using 24-hour radar data extracted from the Stansted NTK system over the 92-day summer period, 16 June to 15 September 2025.

2.7 **Figure B4** shows a 24-hour sample of radar flight tracks from 25 July 2025. In-house radar analysis software was used to calculate mean departure flight tracks and associated lateral dispersions for each NPR/SID. Arrival tracks for Runways 04 and 22 were modelled using evenly spaced 'spurs' about the extended runway centrelines. The majority of arriving aircraft joined the centrelines at distances between 11 and 26 km from the Runway 22 threshold, and between 9 and 28 km from the Runway 04 threshold.

Flight profiles

2.8 For each ANCON type, average flight profiles of height, speed and thrust versus track distance (for departures and arrivals separately) were reviewed and updated using 2025 summer radar data. The engine thrust 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. Daytime flight profiles were generated as in previous years and used for both the day and night contours.

2.9 At distances greater than about 10 km from the runway threshold, the average aircraft heights for arrivals on Runway 22 were higher than on Runway 04, as in preceding years. This was due to the use of Continuous Descent Operations (CDOs) on Runway 22, where aircraft generally join the glideslope at a greater height. CDOs have been employed for arrivals to Runway 22 since 1999. Separate Runway 22 and Runway 04 descent profiles were therefore used to model arrivals for all aircraft types.

2.10 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.

[5] An altitude of 3,000 ft for aircraft on the BKY departure route in the period 06:00-23:30.

Noise emissions

2.11 At Stansted, 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 Stansted NTK system employs 8 fixed monitors positioned approximately 6.5 km from start-of-roll, together with several mobile monitors that can be deployed anywhere within the NTK radar coverage area.[6]

2.12 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[7].
- 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 to minimise the effects of lateral attenuation and lateral directivity.[8]
- 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.

2.13 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.

2.14 Since 2023, the EA320NEO type has been split into the CFM LEAP-1A (EA320NC) and PW1100G (EA320NP) engine variants. Similarly, the EA321NEO is now split into the EA321NC and EA321NP types.

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[6] Further information on the noise monitors can be found in CAP 1149 (**Ref 8**).

[7] Wind speeds above 10 m/s, in accordance with ISO 20906 (**Ref 9**).

[8] *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 largely by the positioning of the engines.

2.15 Notable changes to SEL noise levels for the noise dominant types at Stansted in 2025 were as follows:

- B738 departures – up to about 1 dB higher beyond 14 km from start-of-roll.
- B738MAX departures – up to about 0.5 dB higher at most distances.
- B773G departures – up to about 1 dB higher beyond 7 km from start-of-roll.
- B738 arrivals – up to 1 dB lower beyond about 7 km from threshold.
- B738MAX arrivals on Runway 22 – about 0.5 dB higher beyond 7 km from threshold.

2.16 Validation of L_{Amax} levels, which are the basis of the N60 contours (but not the L_{Aeq} contours), was also carried out. Notable changes to L_{Amax} noise levels for the noise dominant types at Stansted in 2025 were as follows:

- B738 departures – up to about 2 dB higher beyond 9 km from start-of-roll.
- B738MAX departures – up to about 1 dB higher beyond 6 km from start-of-roll.
- B773G departures – up to about 2 dB higher beyond 7 km from start-of-roll.
- B738 arrivals – up to 1 dB lower beyond about 7 km from threshold.
- B738MAX arrivals on Runway 22 – about 0.5 dB higher beyond 7 km from threshold.

Daytime traffic by ANCON type

2.17 The 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 Stansted 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[9] and close agreement was found.

2.18 The average number of daily movements at Stansted over the 2025 summer day period (517.6) was 1% higher than the previous year (2024: 510.5). In 2019, the year before the COVID-19 pandemic, there were 512.2 movements per average summer day.

2.19 A breakdown of the 2025 average summer day movements by ANCON type is provided in **Table C1**. The largest increase in daily movements was for the

[9] NATS is the provider of air traffic control services to Stansted Airport.

ANCON type B738MAX, which was up by 22.5 movements (note: descriptions of all the ANCON types can be found in **Table D1** of **Appendix D**). The highest decrease was for the B738, which was down by 11.0 per day.

2.20 **Figure B5** illustrates the numbers of movements by ANCON type for the 2025 average summer day. The B738 was the most common type at Stansted with 321.6 daily movements (62% of the total).

2.21 The B738 was the noise dominant ANCON type (for both departure and arrival noise) at Stansted during the daytime because it was responsible for the highest contribution of 'noise energy', which is a function of both aircraft noise level and movement numbers.

2.22 It is estimated[10] that almost 100% of aircraft movements in the 2025 summer day period were compliant with the ICAO Chapter 4 noise standard.[11]

Night-time traffic by ANCON type

2.23 There were 101.1 aircraft movements on average over the 8-hour night in 2025, a decrease of 5% from the previous year (2024: 106.5).

2.24 A breakdown of the 2025 average summer night movements by ANCON type is provided in **Table C2**. The highest increase was for the ANCON type B738MAX, which was up by 4.6 movements per night. The largest decrease was for the B738, which was down by 7.2 per night.

2.25 **Figure B6** illustrates the numbers of movements by ANCON type for the 2025 average summer night. Like daytime, traffic was dominated by the B738 with 66.5 movements per night, representing 66% of the total.

2.26 The B738 was the noise dominant ANCON type (for both departure and arrival noise) at Stansted during the night-time period.

2.27 It is estimated that almost 100% of aircraft movements in the 2025 summer night period were compliant with the ICAO Chapter 4 noise standard.

[10] The percentage figure is an estimate because in some cases, detailed aircraft information (e.g. aircraft weight, engine modifications) was not readily available, so some assumptions had to be made.

[11] 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 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.

Daytime traffic distributions by NPR/SID route

2.28 **Figure B7** shows the percentage distribution of departing aircraft by NPR/SID route for the 2025 summer day period, with distribution figures from 2024 for comparison. Route loadings in 2025 were influenced by the shift to a 4% lower proportion of south-westerly operations. In 2025, percentage loadings on the Runway 22 BZD and CLN SIDs each decreased by 2%. The RWY 04 BZD and CLN SID loadings each increased by 2%.

2.29 Since 4 February 2016, when the LAMP 1A airspace change was implemented,[12] traffic that would previously have flown on the DET SID has been switched to the CLN SID.[13] The effects of the switch can be seen in the statistics for the DET SIDs, which had no more than 1% of departure operations in 2025.

Night-time traffic distributions by NPR/SID route

2.30 **Figure B8** shows the percentage distribution of departing aircraft by NPR/SID route for the 2025 summer night period, with distribution figures from 2024 for comparison. The total percentage of south-westerly operations in 2025 was 7% lower than in 2024.

2.31 There was a 1% decrease in the percentage loading on the Runway 22 BZD SID, and loadings also decreased on the Runway 22 CLN and DET SIDs by 2% and 3% respectively. There was a percentage loading increase of 3% on the Runway 04 BZD SID, an increase of 4% on the Runway 04 CLN SID, and an increase of 1% on the Runway 04 DET SID.

2.32 As for daytime, the effects of the switch in traffic from the DET to CLN SIDs (following implementation of the LAMP 1A airspace change) can be seen in the relatively low percentage loadings on the DET routes compared to BZD and CLN.

Runway modal splits

2.33 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 south-westerly (i.e. Runway 22) and north-easterly (i.e. Runway 04) operations is referred to as the *runway modal split*.

[12] https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Decisions/London-Airspace-Management-Programme-Phase-1A/

[13] The DET SID is not normally available now during daytime hours.

2.34 Two sets of contours have been produced for the 2025 summer day and night:

(a) Using the 'actual' modal split over the $L_{Aeq,16h}$ day and $L_{Aeq,8h}$ night periods; and

(b) Assuming the 'standard' modal split over the $L_{Aeq,16h}$ day and $L_{Aeq,8h}$ night periods, i.e. the long-term modal split calculated from the 20-year rolling average. For 2025, this was the 20-year period from 2006 to 2025. Use of the standard modal split enables year-on-year comparisons without the runway usage significantly affecting the contour shape.

2.35 The actual and standard daytime south-west / north-east (SW / NE) percentage modal splits for 2025 and 2024 are summarised in **Table 1**.

Table 1 Stansted daytime runway modal splits

Year	Actual modal split (SW / NE percentage)	Standard modal split (SW / NE percentage)
2025	72 / 28	73 / 27
2024	76 / 24	72 / 28

2.36 The 2025 daytime actual modal split (72% SW / 28% NE) had a 4% lower proportion of south-westerly operations compared to 2024 (76% SW / 24% NE). The 2025 standard modal split of 73% SW / 27% NE had a 1% higher proportion of south-westerly operations compared to 2024 (72% SW / 28% NE). Historical daytime runway modal splits at Stansted for the past 20 years are illustrated in **Figure B9**.

2.37 The night-time modal splits for 2025 and 2024 are summarised in **Table 2**.

Table 2 Stansted night-time runway modal splits

Year	Actual modal split (SW / NE percentage)	Standard modal split (SW / NE percentage)
2025	71 / 29	72 / 28
2024	78 / 22	71 / 29

2.38 The night-time actual runway modal split for the 2025 summer period was 71% SW / 29% NE. There was a 7% decrease in the percentage of south-westerly operations compared to 2024 (78% SW / 22% NE). The night-time standard runway modal split for the 20-year period 2006-2025 was 72% SW / 28% NE, which had a 1% higher proportion of south-westerly operations

compared to 2024. Night contours were produced using the standard modal split for the first time, for 2021.

Topography

2.39 The topography around Stansted 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 considered.

2.40 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 above mean sea level (AMSL) in the vicinity of Stansted Airport are illustrated in **Figure B10**.

Population and 'Points of Interest' databases

2.41 Estimates were made of the numbers of people and households enclosed by the noise contours. The population data used in this report are a 2025 update of the 2021 Census supplied by CACI Limited.

2.42 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 datapoints and associated population counts for the area around Stansted Airport are illustrated in **Figure B11**.

2.43 Within the extent of the 2025 summer day standard 51 dB $L_{Aeq,16h}$ contour, the population count using the 2025 population database was 8% higher than with the 2024 database. This provides an indication of the effect of any population changes in the vicinity of the airport on the results presented in Chapter 3.

2.44 Estimates have also been made of the numbers of noise sensitive buildings located within the daytime contours, using the PointX 'Points of Interest' (2025) database. For this study, the noise sensitive buildings that have been considered are colleges, schools (including nurseries), hospitals and places of worship.

Chapter 3
Results

2025 day actual $L_{Aeq,16h}$ contours

3.1 The Stansted 2025 summer day $L_{Aeq,16h}$ noise contours generated with the actual runway modal split (72% SW / 28% NE) are shown in **Figure B12**. The contours are plotted from 51 to 72 dB at 3 dB intervals. Cumulative estimates of the areas, populations and households within the contours are provided in **Table 3**.

Table 3 Stansted 2025 summer day actual modal split $L_{Aeq,16h}$ contours – area, population and household estimates

$L_{Aeq,16h}$ (dB)	Area (km^2)	Population	Households
> 51	94.3	16,600 (15,500)	6,600 (6,100)
> 54	50.2	6,600 (6,400)	2,600 (2,500)
> 57	26.8	2,100 (2,000)	800 (800)
> 60	14.4	800 (800)	300 (300)
> 63	7.5	300 (300)	100 (100)
> 66	3.7	100 (100)	< 100 (< 100)
> 69	1.9	0 (0)	0 (0)
> 72	1.1	0 (0)	0 (0)

Note: Populations and households are given to the nearest 100, and estimates using the 2024 population database are also given in blue for comparison purposes.

3.2 The 2025 summer day actual 51 dB $L_{Aeq,16h}$ contour enclosed an area of 94.3 km^2 and a population of 16,600.

3.3 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer day actual $L_{Aeq,16h}$ contours are provided in **Table 4**.

Table 4 Stansted 2025 summer day actual modal split $L_{Aeq,16h}$ contours – noise sensitive building estimates

$L_{Aeq,16h}$ (dB)	Colleges	Hospitals	Schools	Places of worship
> 51	1	1	20	15
> 54	1	0	6	9
> 57	1	0	2	3
> 60	1	0	1	2
> 63	1	0	0	1
> 66	1	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2025 night actual $L_{Aeq,8h}$ contours

3.4 The Stansted 2025 summer night $L_{Aeq,8h}$ noise contours generated with the actual runway modal split (71% SW / 29% NE) are shown in **Figure B13**. The contours are plotted from 45 to 66 dB at 3 dB intervals (note: the 69 and 72 dB contours have been omitted for clarity). Cumulative estimates of the areas, populations and households within the contours are provided in **Table 5**.

Table 5 Stansted 2025 summer night actual modal split $L_{Aeq,8h}$ contours – area, population and household estimates

$L_{Aeq,8h}$ (dB)	Area (km^2)	Population	Households
> 45	131.4	24,600 (23,600)	9,900 (9,500)
> 48	72.8	11,100 (9,900)	4,400 (4,000)
> 51	38.9	5,400 (5,200)	2,100 (2,100)
> 54	20.6	1,500 (1,400)	600 (500)
> 57	10.9	600 (500)	200 (200)
> 60	5.4	100 (100)	100 (< 100)
> 63	2.7	0 (0)	0 (0)
> 66	1.4	0 (0)	0 (0)
> 69	0.8	0 (0)	0 (0)
> 72	0.5	0 (0)	0 (0)

Note: Populations and households are given to the nearest 100, and estimates using the 2024 population database are also given in blue for comparison purposes.

3.5 The 2025 summer night actual 45 dB $L_{Aeq,8h}$ contour enclosed an area of 131.4 km^2 and a population of 24,600.

3.6 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer night actual $L_{Aeq,8h}$ contours are provided in **Table 6**.

Table 6 Stansted 2025 summer night actual modal split $L_{Aeq,8h}$ contours – noise sensitive building estimates

$L_{Aeq,8h}$ (dB)	Colleges	Hospitals	Schools	Places of worship
> 45	1	3	29	20
> 48	1	0	12	12
> 51	1	0	4	9
> 54	1	0	1	2
> 57	1	0	0	2
> 60	1	0	0	0
> 63	0	0	0	0
> 66	0	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2025 day standard $L_{Aeq,16h}$ contours

3.7 The Stansted 2025 summer day $L_{Aeq,16h}$ noise contours generated with the standard runway modal split (73% SW / 27% NE) are shown in **Figure B14**. The contours are plotted from 51 to 72 dB at 3 dB intervals. Cumulative estimates of the areas, populations and households within the contours are provided in **Table 7**.

Table 7 Stansted 2025 summer day standard modal split $L_{Aeq,16h}$ contours – area, population and household estimates

$L_{Aeq,16h}$ (dB)	Area (km^2)	Population	Households
> 51	94.3	16,900 (15,700)	6,700 (6,200)
> 54	50.2	6,600 (6,400)	2,600 (2,600)
> 57	26.9	2,100 (2,000)	800 (800)
> 60	14.4	800 (800)	300 (300)
> 63	7.5	300 (300)	100 (100)
> 66	3.7	100 (100)	< 100 (< 100)
> 69	1.9	0 (0)	0 (0)
> 72	1.1	0 (0)	0 (0)

Note: Populations and households are given to the nearest 100, and estimates using the 2024 population database are also given in blue for comparison purposes.

3.8 The 2025 summer day standard 51 dB $L_{Aeq,16h}$ contour enclosed an area of 94.3 km^2 and a population of 16,900.

3.9 The 57 dB $L_{Aeq,16h}$ standard modal split contour area of 26.9 km^2 was below the current Stansted planning noise condition contour area limit of 33.9 km^2 (see section 1.11).

3.10 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer day standard $L_{Aeq,16h}$ contours are provided in **Table 8**.

Table 8 Stansted 2025 summer day standard modal split $L_{Aeq,16h}$ contours – noise sensitive building estimates

$L_{Aeq,16h}$ (dB)	Colleges	Hospitals	Schools	Places of worship
> 51	1	1	20	15
> 54	1	0	6	9
> 57	1	0	2	3
> 60	1	0	1	2
> 63	1	0	0	1
> 66	1	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2025 night standard $L_{Aeq,8h}$ contours

3.11 Summer night $L_{Aeq,8h}$ noise contours have been produced with the standard (20-year average) runway modal split (72% SW / 28% NE) for 2025 and they are shown in **Figure B15**. The contours are plotted from 45 to 66 dB at 3 dB intervals (note: the 69 and 72 dB contours have been omitted for clarity). Cumulative estimates of the areas, populations and households within the contours are provided in **Table 9**.

Table 9 Stansted 2025 summer night standard modal split $L_{Aeq,8h}$ contours – area, population and household estimates

$L_{Aeq,8h}$ (dB)	Area (km^2)	Population	Households
> 45	131.3	24,600 (23,700)	9,900 (9,500)
> 48	72.8	11,000 (9,800)	4,400 (3,900)
> 51	39.0	5,300 (5,200)	2,100 (2,100)
> 54	20.6	1,500 (1,400)	600 (500)
> 57	10.9	600 (500)	200 (200)
> 60	5.4	100 (100)	100 (< 100)
> 63	2.7	0 (0)	0 (0)
> 66	1.4	0 (0)	0 (0)
> 69	0.8	0 (0)	0 (0)
> 72	0.5	0 (0)	0 (0)

Note: Populations and households are given to the nearest 100, and estimates using the 2024 population database are also given in blue for comparison purposes.

3.12 The 2025 summer night standard 45 dB $L_{Aeq,8h}$ contour enclosed an area of 131.3 km^2 and a population of 24,600.

3.13 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer night actual $L_{Aeq,8h}$ contours are provided in **Table 10**.

Table 10 Stansted 2025 summer night standard modal split $L_{Aeq,8h}$ contours – noise sensitive building estimates

$L_{Aeq,8h}$ (dB)	Colleges	Hospitals	Schools	Places of worship
> 45	1	3	28	20
> 48	1	0	12	12
> 51	1	0	4	9
> 54	1	0	1	2
> 57	1	0	0	2
> 60	1	0	0	0
> 63	0	0	0	0
> 66	0	0	0	0
> 69	0	0	0	0
> 72	0	0	0	0

2025 day actual $L_{Aeq,16h}$ contours – comparison with 2024

3.14 The Stansted 2024 and 2025 summer day actual modal split $L_{Aeq,16h}$ contours are compared in **Figure B16** from 51 to 66 dB. The changes in area and population between 2024 and 2025 are summarised in **Table 11**.

Table 11 Stansted 2024 and 2025 summer day actual $L_{Aeq,16h}$ contours – area and population estimates

$L_{Aeq,16h}$ (dB)	2024 area (km^2)	2025 area (km^2)	Area change	2024 population	2025 population	Population change
> 51	91.1	94.3	+4%	14,100	16,600	+18%
> 54	49.5	50.2	+1%	6,400	6,600	+3%
> 57	26.3	26.8	+2%	2,100	2,100	0%
> 60	13.9	14.4	+4%	700	800	+14%
> 63	7.2	7.5	+4%	300	300	0%
> 66	3.7	3.7	0%	100	100	0%
> 69	1.9	1.9	0%	0	0	(n/a)
> 72	1.0	1.1	+10%	0	0	(n/a)

Note: The 2024 and 2025 summer day actual runway modal splits were 76% SW / 24% NE and 72% SW / 28% NE respectively.

3.15 The 51 dB contour area increased by 4% in 2025 and areas also increased at most of the higher contour levels, by up to 10%. The area increases resulted mainly from the upwards noise adjustments made to the noise dominant types, especially the B738 on departure, as part of the noise validation exercise (see section 2.15).

3.16 The population count within the 51 dB contour was 18% higher in 2025 due to contour shape changes, such as the widening of the contour over parts of Sawbridgeworth and Bishop's Stortford, combined with the effects of population encroachment as noted in section 2.43.

3.17 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.

2025 night actual $L_{Aeq,8h}$ contours – comparison with 2024

3.18 The Stansted 2024 and 2025 night actual modal split $L_{Aeq,8h}$ contours are compared in **Figure B17** from 45 to 63 dB. **Table 12** summarises the changes in area and population between 2024 and 2025.

Table 12 Stansted 2024 and 2025 summer night actual $L_{Aeq,8h}$ contours – area and population estimates

$L_{Aeq,8h}$ (dB)	2024 area (km^2)	2025 area (km^2)	Area change	2024 population	2025 population	Population change
> 45	128.4	131.4	+2%	21,600	24,600	+14%
> 48	75.3	72.8	-3%	10,200	11,100	+9%
> 51	41.6	38.9	-6%	5,500	5,400	-2%
> 54	22.2	20.6	-7%	2,700	1,500	-44%
> 57	11.3	10.9	-4%	600	600	0%
> 60	5.7	5.4	-5%	100	100	0%
> 63	2.9	2.7	-7%	0	0	(n/a)
> 66	1.5	1.4	-7%	0	0	(n/a)
> 69	0.9	0.8	-11%	0	0	(n/a)
> 72	0.5	0.5	0%	0	0	(n/a)

Note: The 2024 and 2025 summer night actual runway modal splits were 78% SW / 22% NE and 71% SW / 29% NE respectively.

3.19 The 45 dB contour area increased by 2% in 2025 and there were reductions of up to 11% at the higher contour levels. The area increase resulted mainly from the upwards noise adjustments made to the noise dominant types, especially the B738 on departure beyond 14 km from start of roll, as part of the noise validation exercise (see section 2.15), offset by a 5% reduction in total movements. There were area reductions of up to 11% at the higher contour levels as upwards noise adjustments were offset by a 5% reduction in total movements and a reduction in B738 arrival noise.

3.20 The population count inside the 45 dB contour rose by 14% due to contour shape changes, such as the widening of the contour into densely populated areas such as Sawbridgeworth, combined with the effects of population encroachment as noted in section 2.43. There was a 44% population reduction at 54 dB because the R22 arrival contour lobe retracted from Thaxted.

2025 day standard $L_{Aeq,16h}$ contours – comparison with 2024

3.21 The Stansted 2024 and 2025 summer day standard modal split $L_{Aeq,16h}$ contours are compared in **Figure B18** from 51 to 66 dB. **Table 13** summarises the changes in area and population between 2024 and 2025.

Table 13 Stansted 2024 and 2025 summer day standard $L_{Aeq,16h}$ contours – area and population estimates

$L_{Aeq,16h}$ (dB)	2024 area (km^2)	2025 area (km^2)	Area change	2024 population	2025 population	Population change
> 51	91.1	94.3	+4%	13,700	16,900	+23%
> 54	49.1	50.2	+2%	6,400	6,600	+3%
> 57	26.1	26.9	+3%	2,000	2,100	+5%
> 60	13.9	14.4	+4%	700	800	+14%
> 63	7.2	7.5	+4%	300	300	0%
> 66	3.6	3.7	+3%	100	100	0%
> 69	1.9	1.9	0%	0	0	(n/a)
> 72	1.0	1.1	+10%	0	0	(n/a)

Note: The 2024 and 2025 summer day standard runway modal splits were 72% SW / 28% NE and 73% SW / 27% NE respectively.

3.22 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 south-westerly to north-easterly operations.

3.23 The 51 dB contour area increased by 4% in 2025 and areas also increased at the higher contour levels, by up to 10%. The area increases resulted mainly from the upwards noise adjustments made to the noise dominant types, especially the B738 on departure, as part of the noise validation exercise (see section 2.15).

3.24 The population count inside the 51 dB contour rose by 23% as the contour expanded into densely populated areas such as Bishop’s Stortford and Sawbridgeworth, combined with the effects of population encroachment as noted in section 2.43. There were population increases of up to 14% at some of the higher contour levels.

2025 night standard $L_{Aeq,8h}$ contours – comparison with 2024

3.25 The Stansted 2024 and 2025 night standard modal split $L_{Aeq,8h}$ contours are compared in **Figure B19** from 45 to 63 dB. **Table 14** summarises the changes in area and population between 2024 and 2025.

Table 14 Stansted 2024 and 2025 summer night standard $L_{Aeq,8h}$ contours – area and population estimates

$L_{Aeq,8h}$ (dB)	2024 area (km^2)	2025 area (km^2)	Area change	2024 population	2025 population	Population change
> 45	129.9	131.3	+1%	22,700	24,600	+8%
> 48	75.8	72.8	-4%	9,700	11,000	+13%
> 51	41.3	39.0	-6%	5,500	5,300	-4%
> 54	21.8	20.6	-6%	2,100	1,500	-29%
> 57	11.2	10.9	-3%	500	600	+20%
> 60	5.7	5.4	-5%	100	100	0%
> 63	2.9	2.7	-7%	0	0	(n/a)
> 66	1.5	1.4	-7%	0	0	(n/a)
> 69	0.9	0.8	-11%	0	0	(n/a)
> 72	0.5	0.5	0%	0	0	(n/a)

Note: The 2024 and 2025 summer night standard runway modal splits were 71% SW / 29% NE and 72% SW / 28% NE respectively.

3.26 The 45 dB contour area increased by 1% in 2025, which resulted mainly from the upwards noise adjustments made to the B738 on departure beyond 14 km from start of roll, as part of the noise validation exercise (see section 2.15). There were area reductions of up to 11% at the higher contour levels as upwards noise adjustments were offset by a 5% reduction in total movements and a reduction in B738 arrival noise.

3.27 The population count inside the 45 dB contour increased by 8% largely due to a widening of the contour into densely populated areas such as Bishop's Stortford, combined with the effects of population encroachment as noted in section 2.43. The 29% population reduction at the 54 dB level resulted from the shortening of the R22 arrival contour lobe, which retracted from Thaxted.

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

3.28 **Figure B20** 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.

Annual movements

3.29 Annual movements at Stansted rose steadily between 1990 and 2001, showing rapid growth between 1997 and 1999. The number of movements in 2001 and 2002 were similar, but in 2003, the annual figure rose by 9% over the preceding year. A 7% rise in 2006 was followed by a 1% increase in 2007, when the level of annual movements reached a peak.

3.30 The total annual movement figure for 2008 dropped by 7% from the 2007 peak – this can be attributed to the economic downturn and fluctuating oil price. The movement figure declined even further in 2009, by 13%, as the global recession continued to affect the aviation industry.

3.31 The year 2010 saw another fall in traffic for the third year running, this time by 8%. The volcanic ash crisis in April, industrial action in May, adverse winter weather and a continued reduction in demand for leisure travel were some of the factors that caused the decline in traffic.

3.32 Annual traffic dropped by 4% in 2011 and reached a low in 2012 after having fallen for the fifth year in a row, this time by 3%, reflecting the continued reduction in demand for flights over this period. However, 2013 saw the first increase in annual flights (by 2%) following five years of consecutive decline from the 2007 peak. Movements continued to rise by 5-7% each year from 2014 to 2018 as demand returned, although in 2019, they reduced by 1%.

3.33 The year 2020 was greatly impacted by the COVID-19 pandemic, which led to a 57% reduction in annual movements. In 2021, movements recovered by 8% as international travel restrictions eased during the summer, but they were still relatively low compared to 2019. The recovery accelerated in 2022 as air travel restrictions eased further, and annual movements rose by 90%. By 2025, movements had returned to levels last seen in 2018 and 2019 before the pandemic.

Areas and populations

3.34 Up to 1998, areas and populations within the 57 dB $L_{Aeq,16h}$ contour have generally risen in line with movements, but in 1999, despite the high traffic growth, the area fell by 19%. This decrease was attributable to fewer movements of older, noisier, Chapter 2 aircraft – especially those by the BAC 1-11, which fell by 64% in that year.

3.35 Areas generally declined after 2001 following completion of the phase-out of Chapter 2 aircraft. There was a 7% decrease in traffic in 2008 and the area fell by 6%, reducing further in 2009 by 17% and again in 2010 by 7% as total movements dropped. The 2011 and 2012 areas fell to the lowest levels seen at Stansted since 1990 as traffic levels continued to drop. The area decreased further in 2013 to 20.0 km^2 as summer period traffic decreased, despite the overall movements increase seen over the annual period. Up till then, this was also the smallest 57 dB $L_{Aeq,16h}$ actual contour area calculated for Stansted. (The previous smallest area had been 20.1 km^2 in 1990). However, the contour area increased between 2014 (21.6 km^2) and 2018 (28.5 km^2) as movements rose each year. The 2019 summer saw a halt to the area growth trend as annual movements fell for the first time in 7 years, and the 2019 area was unchanged from 2018.

3.36 The reductions in flights following the COVID-19 pandemic in 2020 meant the 57 dB contour area in 2020 was the lowest ever recorded, at 11.8 km^2. The contour area increased by 33% in 2021 as traffic levels started to recover and then increased by 40% and 22% in 2022 and 2023 respectively as movements returned to near pre-pandemic levels. By 2024 and 2025, the contour area had increased to a level close to that seen in 2017.

3.37 From 2001 to 2008, population counts fluctuated within a range from approximately 2,000 to 2,900. The years with higher proportions of south-westerly movements have tended to produce the higher population counts. In 2009, the shift in modal split to a lower proportion of south-westerly movements along with lower movement numbers caused the population count to dip to 1,500.

3.38 From 2009 to 2013, population counts were relatively steady, albeit reducing as contour areas continued to fall year-on-year. Since 2013, populations have generally risen. In 2014 the population count increased by 32% as the contour extended into some populated areas. This resulted from growth in summer movements and a higher proportion of north-easterly operations, which affected the contour shape. In 2015, a return to a more typical runway modal split led to changes in the contour shape, with the net effect being an unchanged population count. A shift to a higher percentage of south-westerly operations in 2016 led to a 24% population increase as the contour stretched across populated areas such as Thaxted and Little Hallingbury. The population increased by 20% in 2017 as the contour expanded over the same areas following a 10% rise in movements. However, the population fell by 14% in 2018 as a large shift in favour of easterly movements pulled the contour away from Thaxted. The runway modal split reverted to a higher percentage of south-westerly movements in 2019, which meant that the 57 dB contour extended over parts of Thaxted, causing the population count to rise by 19%.

3.39 The population count reduced by 80% in 2020 as the 57 dB contour area dropped to its lowest ever level during the height of the COVID-19 pandemic, before increasing by 120% in 2021 and then by 70% and 39% in 2022 and 2023 respectively as movements recovered. However, the population fell in 2024 as a shift in the runway modal split pulled the 57 dB contour away from Thaxted and was also at a similar level in 2025.

Supplementary noise metric – N60 day contours

3.40 N60 contours[14] have been produced for the 2025 summer daytime period, using the same modelling input data as the $L_{Aeq,16h}$ standard modal split (73% SW / 27% NE) contours. Stansted N60 day contours were first produced for 2023.

3.41 The N60 day standard contours are shown in **Figure B21**, plotted at levels of 50, 100, 200 and 500 events. Estimates of area, population and households within the N60 contours are summarised in **Table 15**.

Table 15 Stansted 2025 summer day standard modal split N60 contours – area, population and household estimates

N60	Area (km^2)	Population	Households
> 50	225.9	40,000	16,200
> 100	114.1	23,300	9,500
> 200	40.3	3,600	1,400
> 500	0.7	0	0

Note: Populations and households are given to the nearest 100. The 2025 summer day standard runway modal split was 73% SW / 27% NE.

3.42 The 2025 summer day standard N60 50-event contour enclosed an area of 225.9 km^2 (2024: 205.3 km^2) and a population of 40,000 (2024: 33,900).

3.43 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer day standard N60 contours are provided in **Table 16**.

Table 16 Stansted 2025 summer day standard modal split N60 contours – noise sensitive building estimates

N60	Colleges	Hospitals	Schools	Places of worship
> 50	2	3	47	38
> 100	1	1	29	16
> 200	1	0	5	5
> 500	0	0	0	0

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

Supplementary noise metric – N60 night contours

3.44 N60 contours have also been produced for the 2025 summer night, assuming the standard modal split (72% SW / 28% NE). Stansted N60 night contours were first produced for 2023.

3.45 The contours are shown in **Figure B22**, plotted at levels of 10, 20, 50 and 100 events. Estimates of area, population and households within the N60 summer night standard contours are summarised in **Table 17**.

Table 17 Stansted 2025 summer night standard modal split N60 contours – area, population and household estimates

N60	Area (km^2)	Population	Households
> 10	200.4	39,400	16,000
> 20	89.9	19,700	8,100
> 50	16.5	600	200
> 100	0.6	0	0

Note: Populations and households are given to the nearest 100. The 2025 summer night standard runway modal split was 72% SW / 28% NE.

3.46 The 2025 summer night standard N60 10-event contour enclosed an area of 200.4 km^2 (2024: 199.1 km^2) and a population of 39,400 (2024: 34,900).

3.47 Estimates of the cumulative numbers of noise sensitive buildings within the 2025 summer night standard N60 contours are provided in **Table 18**.

Table 18 Stansted 2025 summer night standard modal split N60 contours – noise sensitive building estimates

N60	Colleges	Hospitals	Schools	Places of worship
> 10	2	3	39	36
> 20	1	1	25	13
> 50	1	0	0	3
> 100	0	0	0	0

Chapter 4

Conclusions

4.1 Year 2025 average summer day $L_{Aeq,16h}$ and night $L_{Aeq,8h}$ noise exposure contours have been generated for Stansted Airport using the ANCON noise model.

4.2 Movements over the 2025 summer day period rose by 1% to 517.6 from 2024 (510.5), a similar total to 2019 (512.2). The 2025 average summer day actual modal split (72% SW / 28% NE) 51 dB $L_{Aeq,16h}$ contour area increased by 4% to 94.3 km^2 (2024: 91.1 km^2). The area increase resulted mainly from upwards noise adjustments made to some of the noise dominant types, especially the B738 on departure, as part of the 2025 noise validation exercise. The population enclosed within this contour was 16,600, 18% higher than the previous year.

4.3 Movements over the 2025 summer night period fell by 5% to 101.1 from 2024 (106.5). The 2025 average summer night actual modal split (71% SW / 29% NE) 45 dB $L_{Aeq,8h}$ contour enclosed an area of 131.4 km^2, which was 2% higher than the previous year (2024: 128.4 km^2). As for daytime, the area increase resulted mainly from upwards noise adjustments made to some of the noise dominant types, especially the B738 on departure, as part of the 2025 noise validation exercise. The population count of 24,600 within this contour was 14% higher than in 2024 (21,600).

4.4 The 2025 average summer day standard modal split (73% SW / 27% NE) 51 dB $L_{Aeq,16h}$ contour area increased by 4% to 94.3 km^2 (2024: 91.1 km^2). The 57 dB $L_{Aeq,16h}$ contour area was 26.9 km^2, which was below the 33.9 km^2 limit imposed by Stansted's planning noise condition. The population count of 16,900 within the 2025 summer day standard 51 dB $L_{Aeq,16h}$ contour was 23% higher than in 2024 (13,700) as the contour expanded over Bishop's Stortford and Sawbridgeworth.

4.5 The 2025 average summer night standard runway modal split (72% SW / 28% NE) 45 dB $L_{Aeq,8h}$ contour enclosed an area of 131.3 km^2, which was 1% higher than in 2024 (129.9 km^2), and the population count was 8% higher at 24,600 (2024: 22,700).

4.6 Supplementary noise metric N60 contours have also been produced for the 2025 average summer 16-hour day and 8-hour night period assuming the standard modal split. The area of the day standard modal split (73% SW / 27% NE) 50-event N60 contour was 225.9 km^2 (2024: 205.3 km^2) with a population count of 40,000 (2024: 33,900). The night 10-event N60 contour assuming the standard modal split (72% SW / 28% NE) was 200.4 km^2 (2024: 199.1 km^2) with a population count of 39,400 (2024: 34,900).

APPENDIX A

References

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9. ISO 20906:2009 *Acoustics - Unattended monitoring of aircraft sound in the vicinity of airports*.

APPENDIX B

Figures

Figure B1 Stansted Airport and the surrounding area

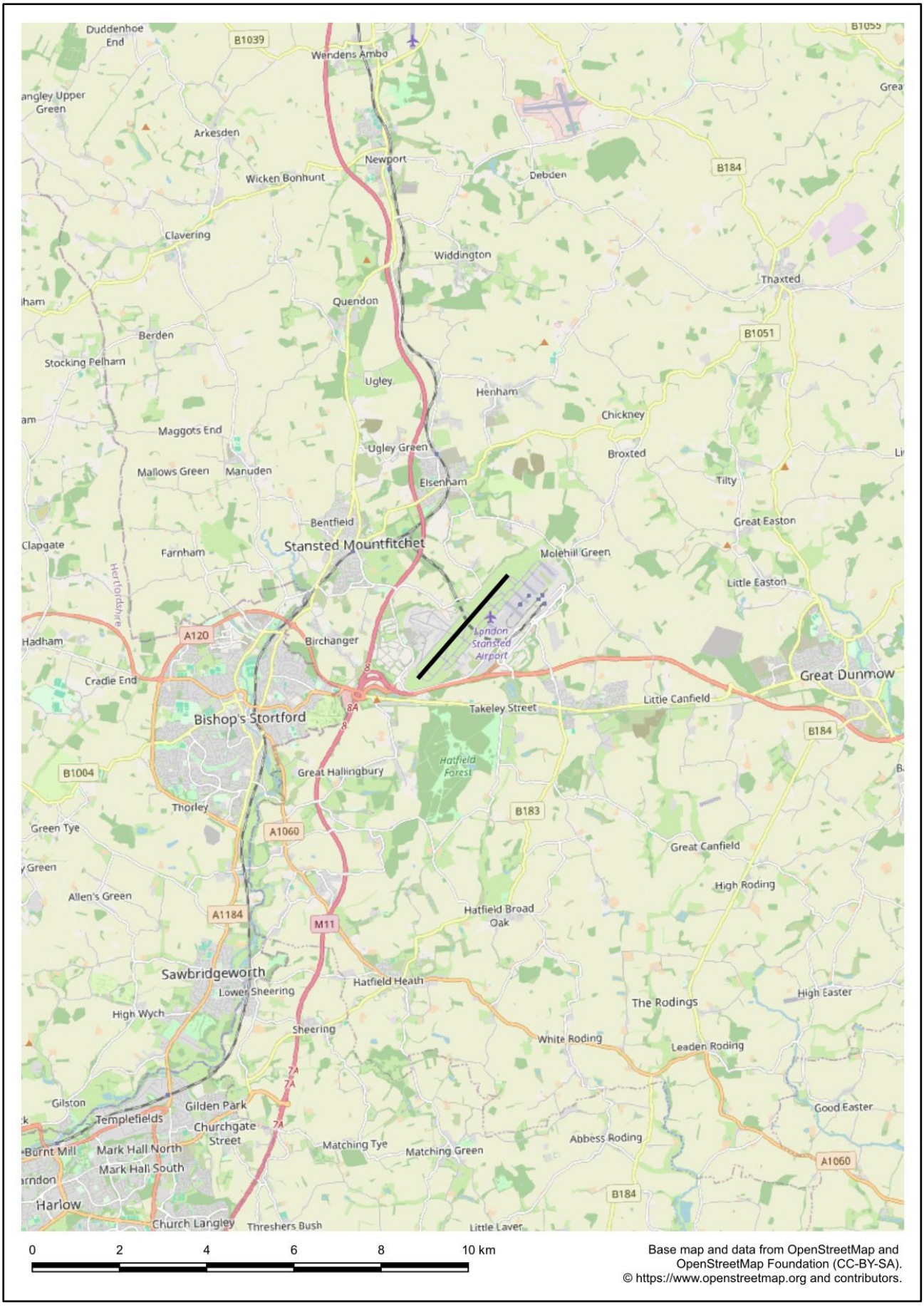


Figure B2 Stansted Airport layout

Figure B3 Stansted NPR/SID routes

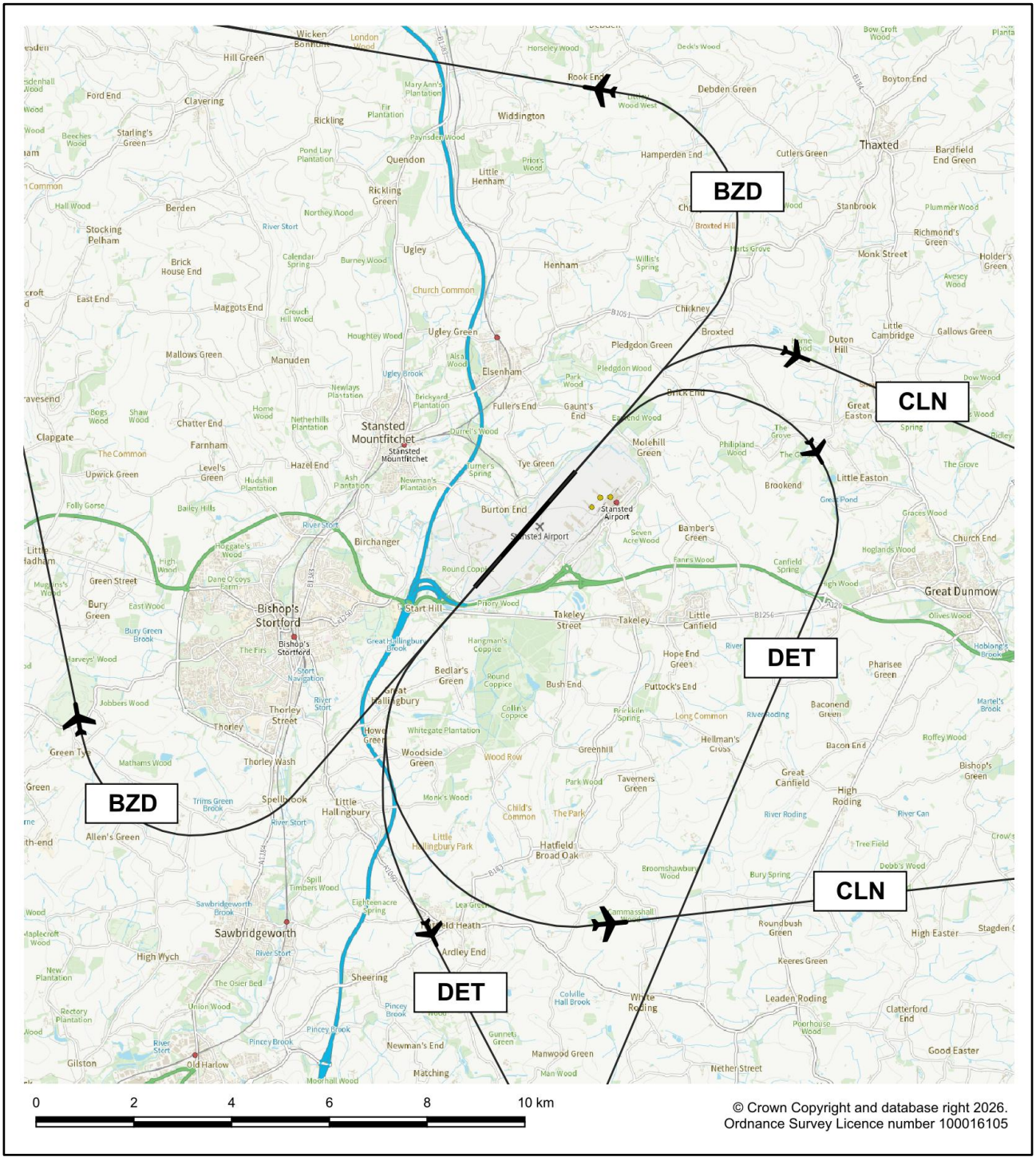


Figure B4 Typical Stansted radar flight tracks

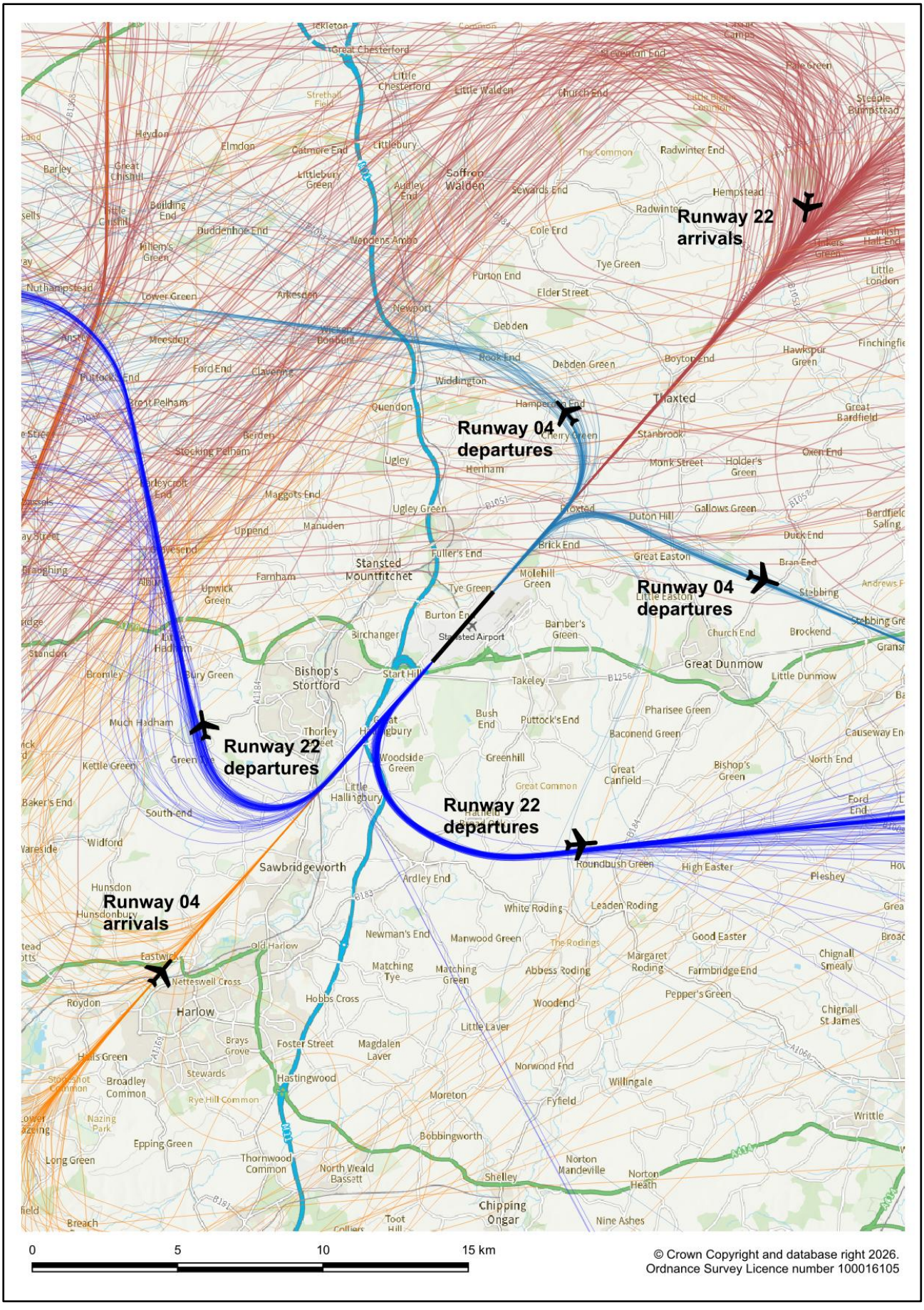


Figure B5 Stansted 2025 average summer day movements by ANCON type

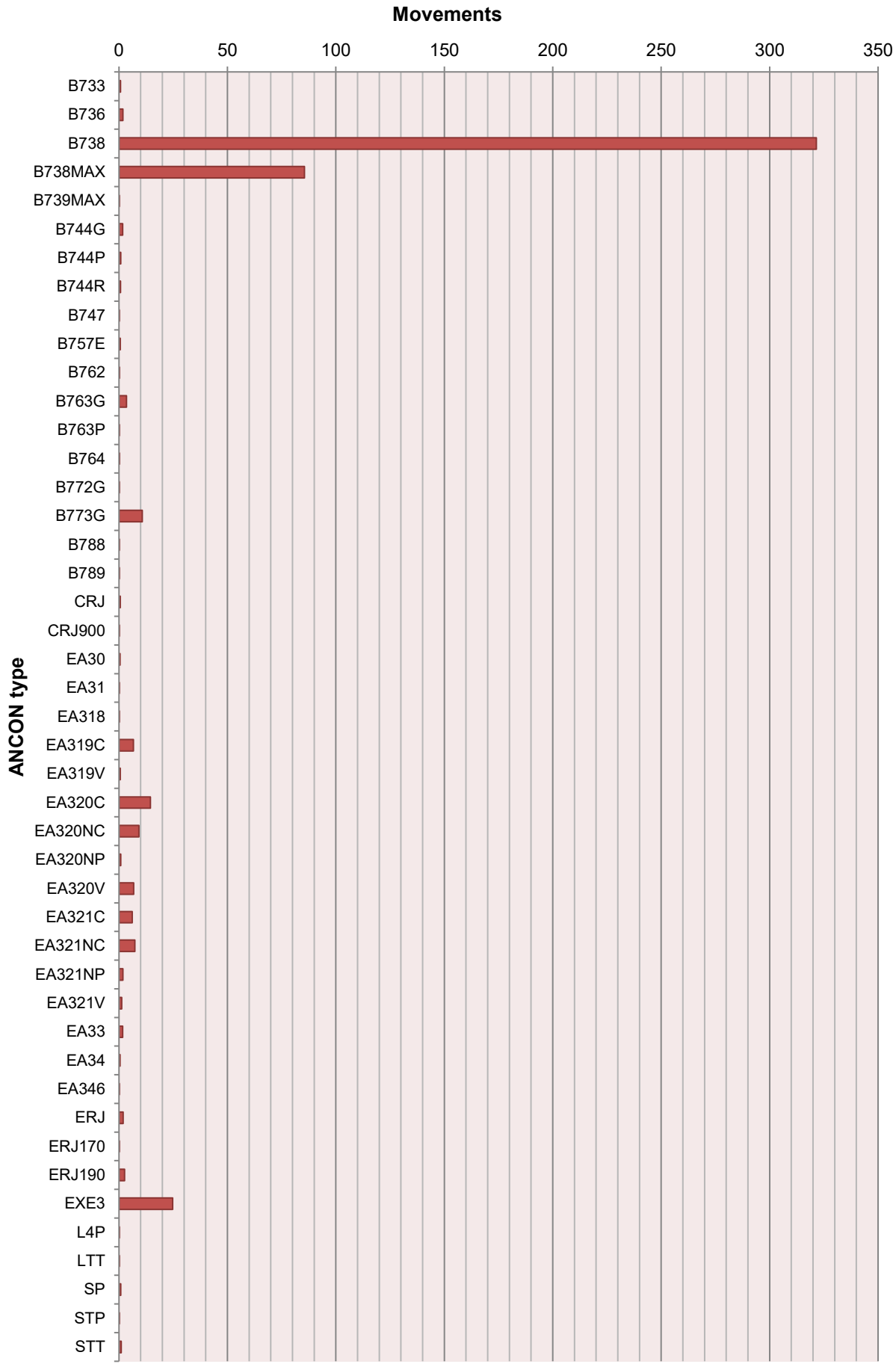


Figure B6 Stansted 2025 average summer night movements by ANCON type

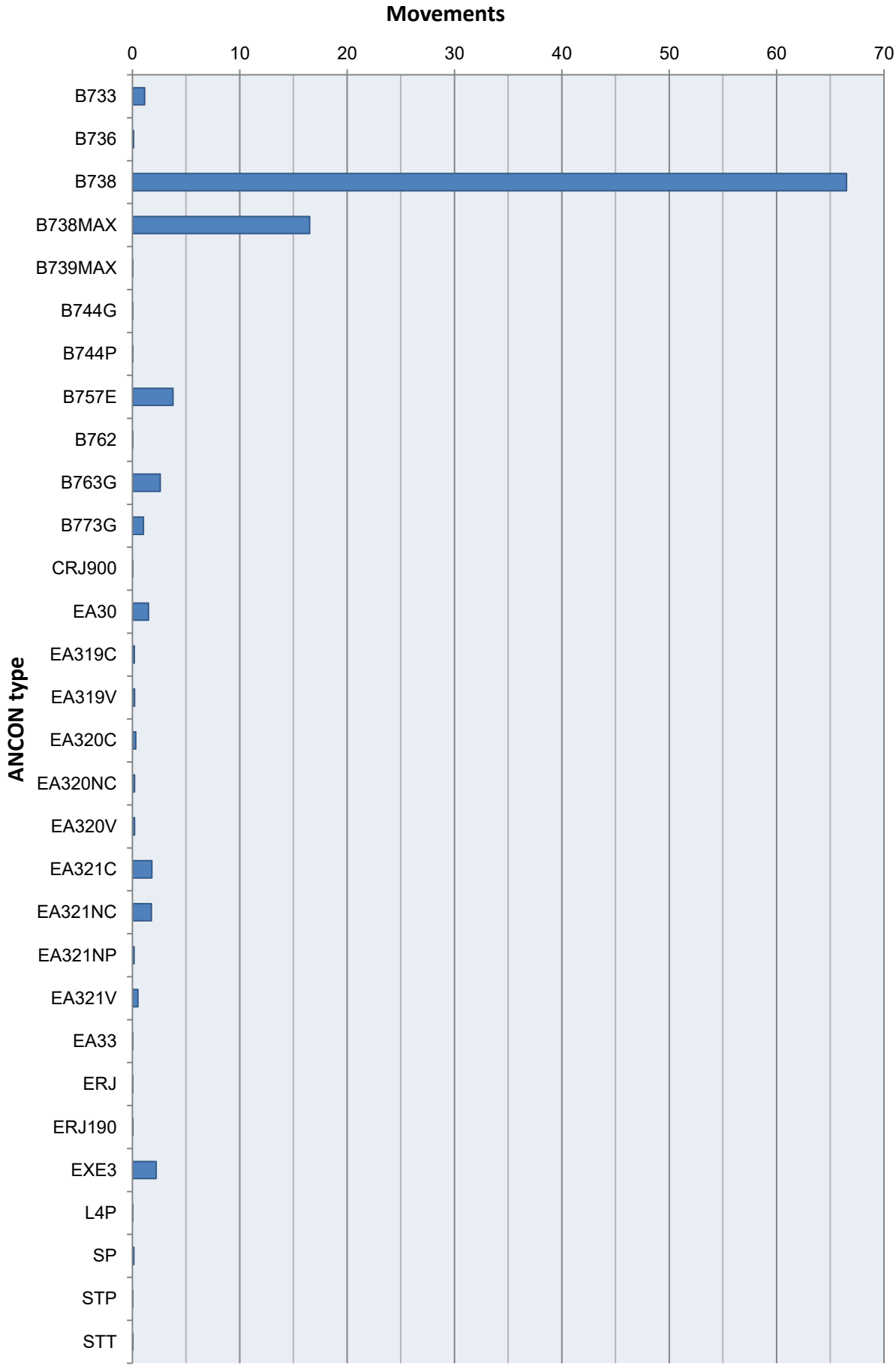


Figure B7 Stansted 2025 summer day departure traffic distributions by NPR/SID

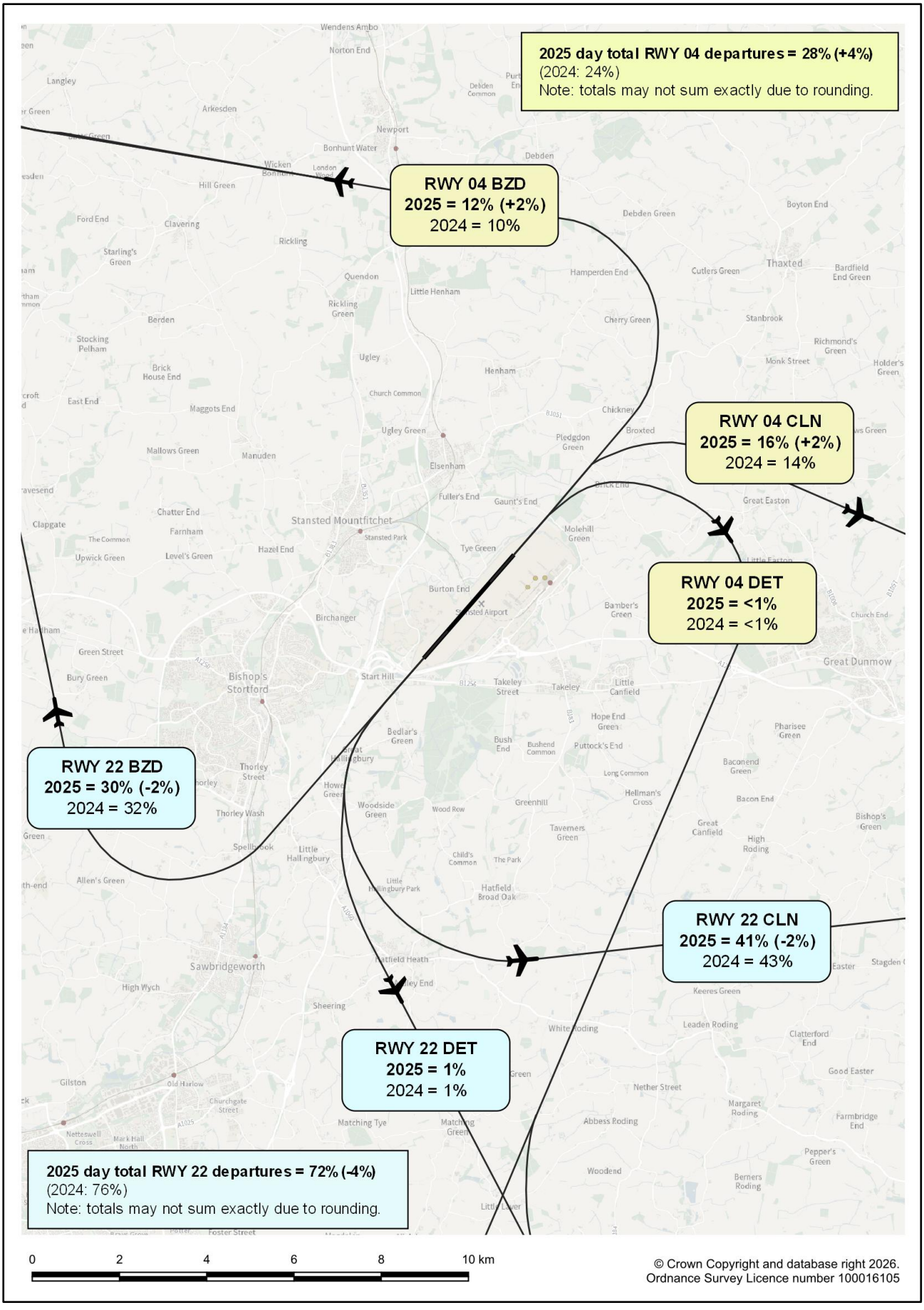


Figure B8 Stansted 2025 summer night departure traffic distributions by NPR/SID

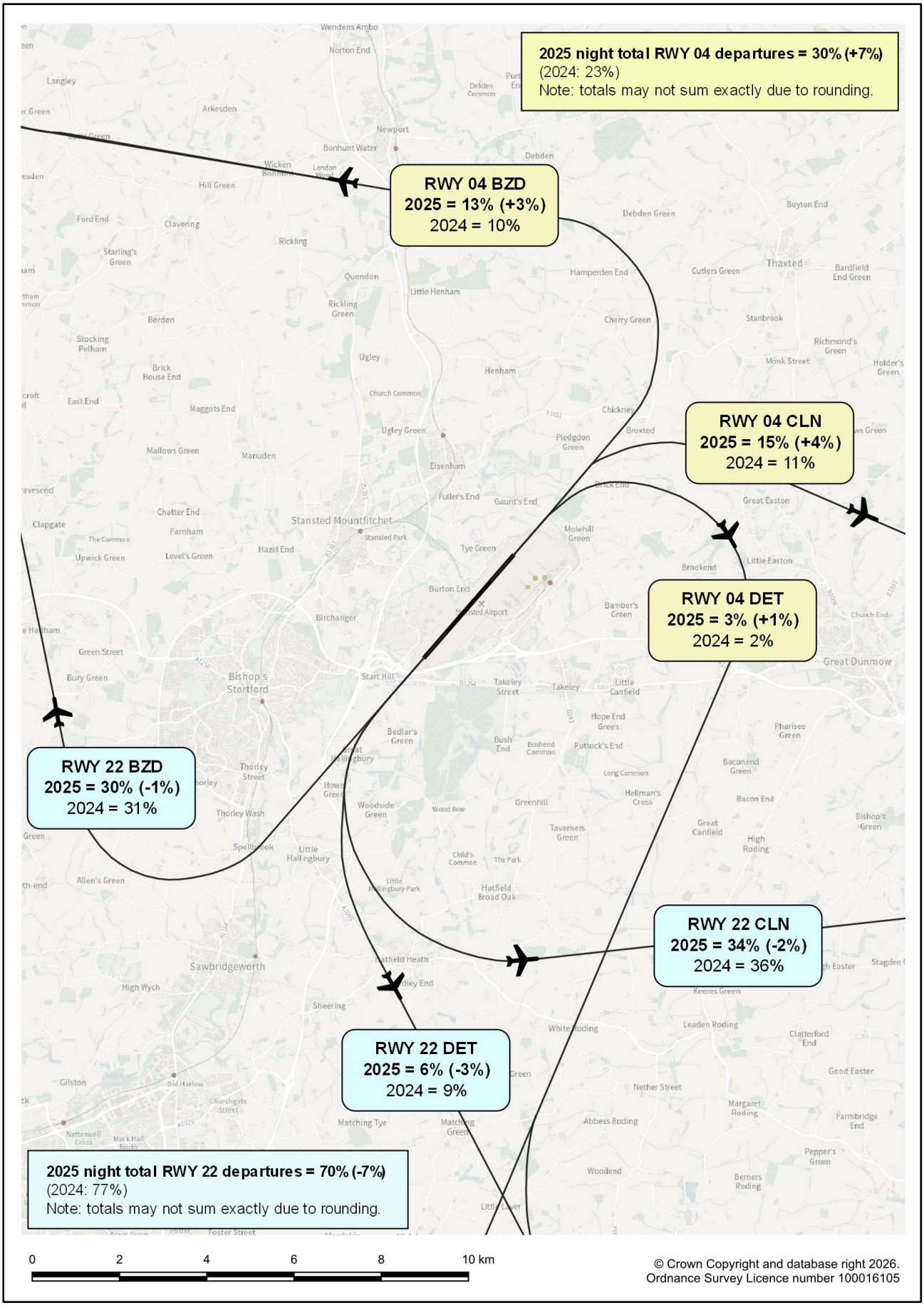


Figure B9 Stansted summer day runway modal splits 2006-2025

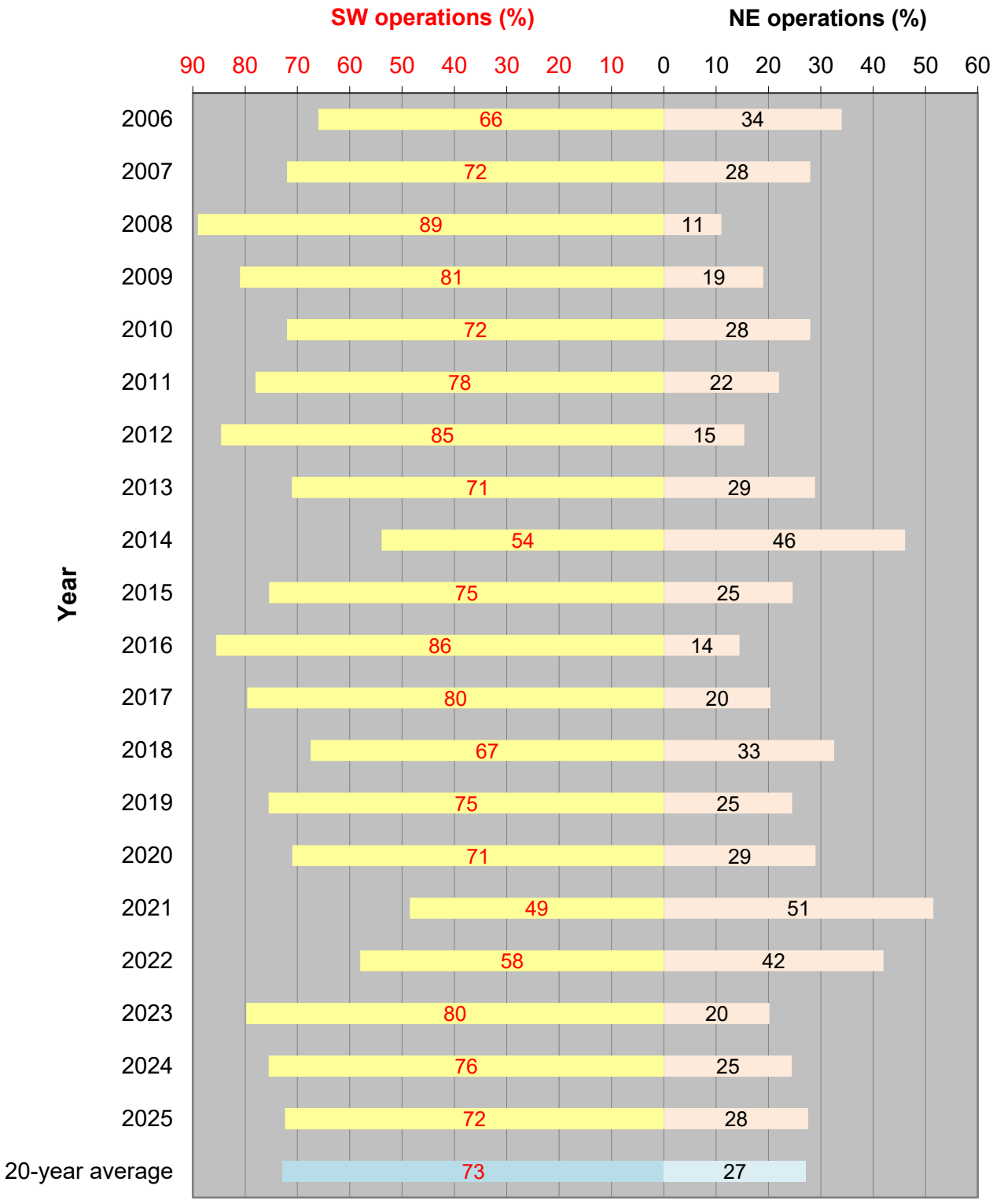


Figure B10 Terrain heights around Stansted Airport

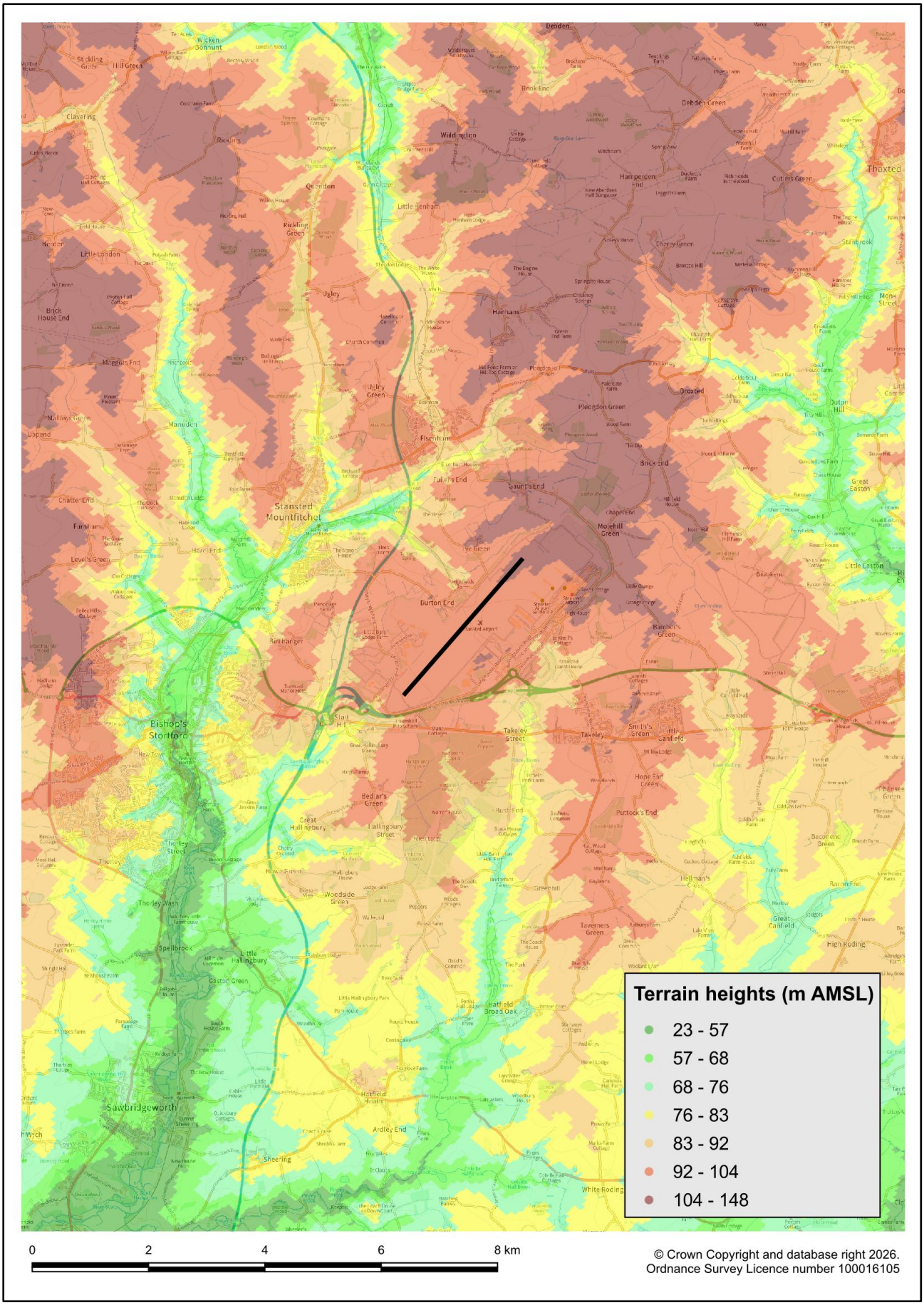


Figure B11 Population data points around Stansted Airport

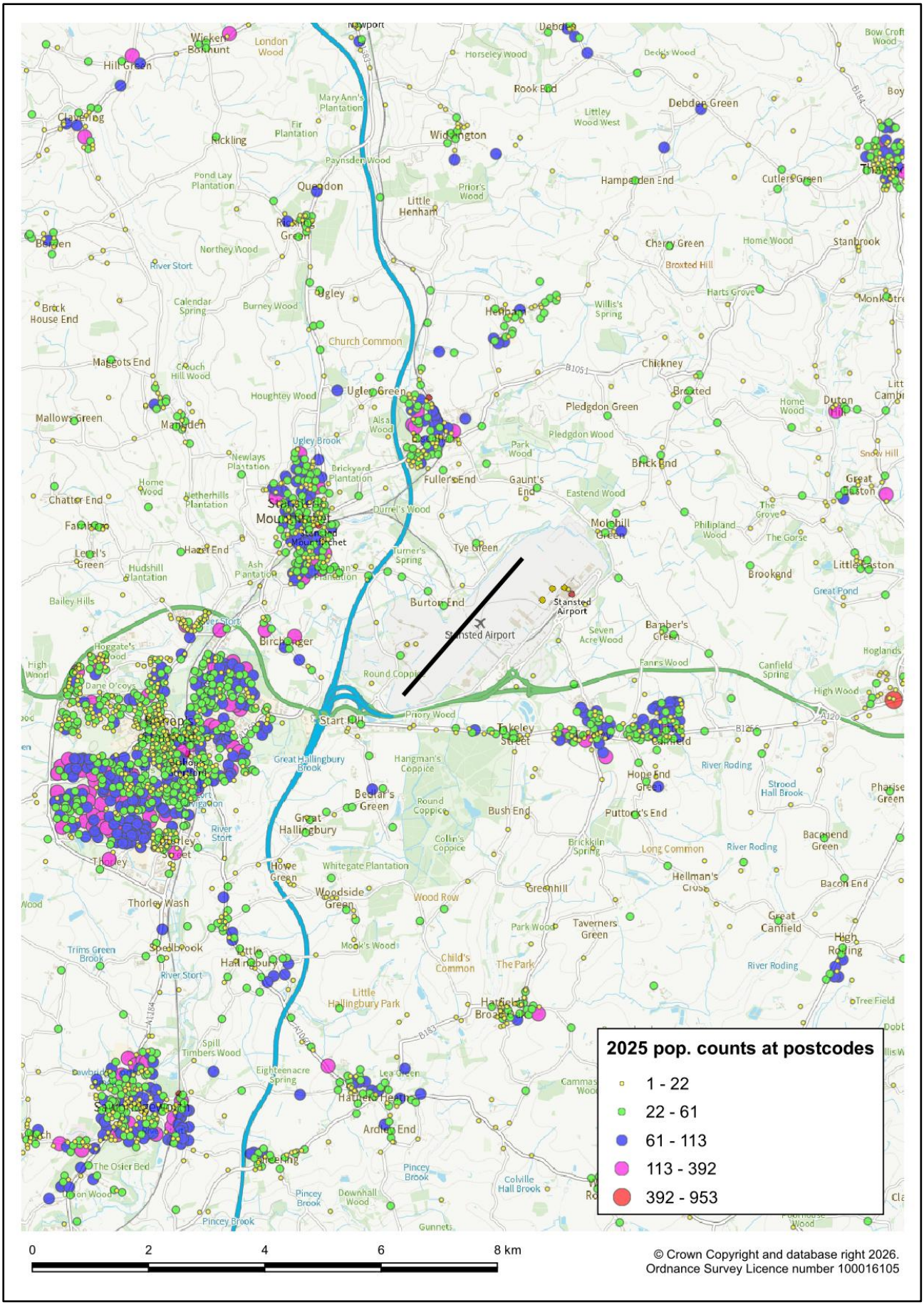


Figure B12 Stansted 2025 summer day actual modal split (72% SW / 28% NE) $L_{Aeq,16h}$ contours

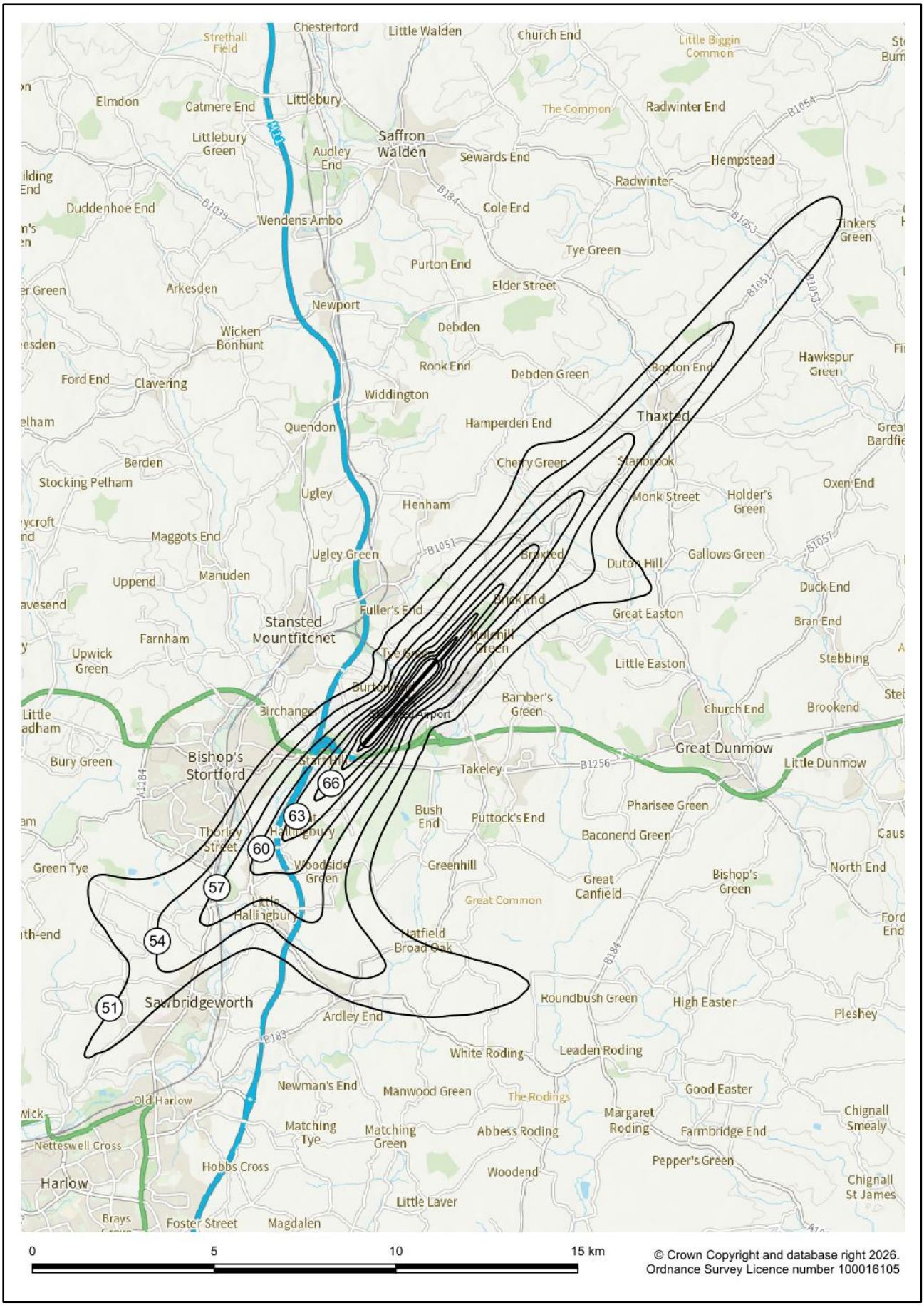


Figure B13 Stansted 2025 summer night actual modal split (71% SW / 29% NE) $L_{Aeq,8h}$ contours

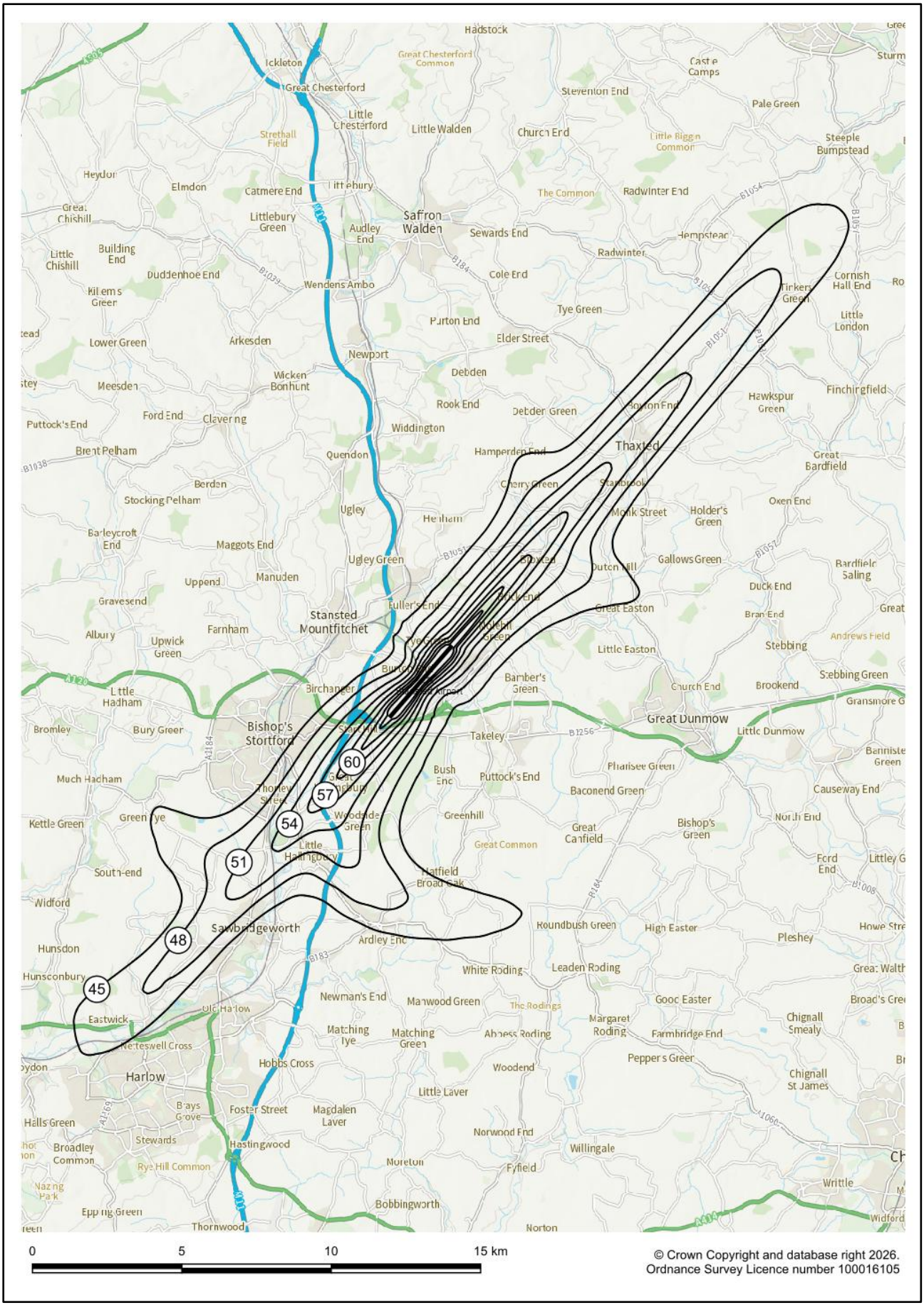


Figure B14 Stansted 2025 summer day standard modal split (73% SW / 27% NE) $L_{Aeq,16h}$ contours

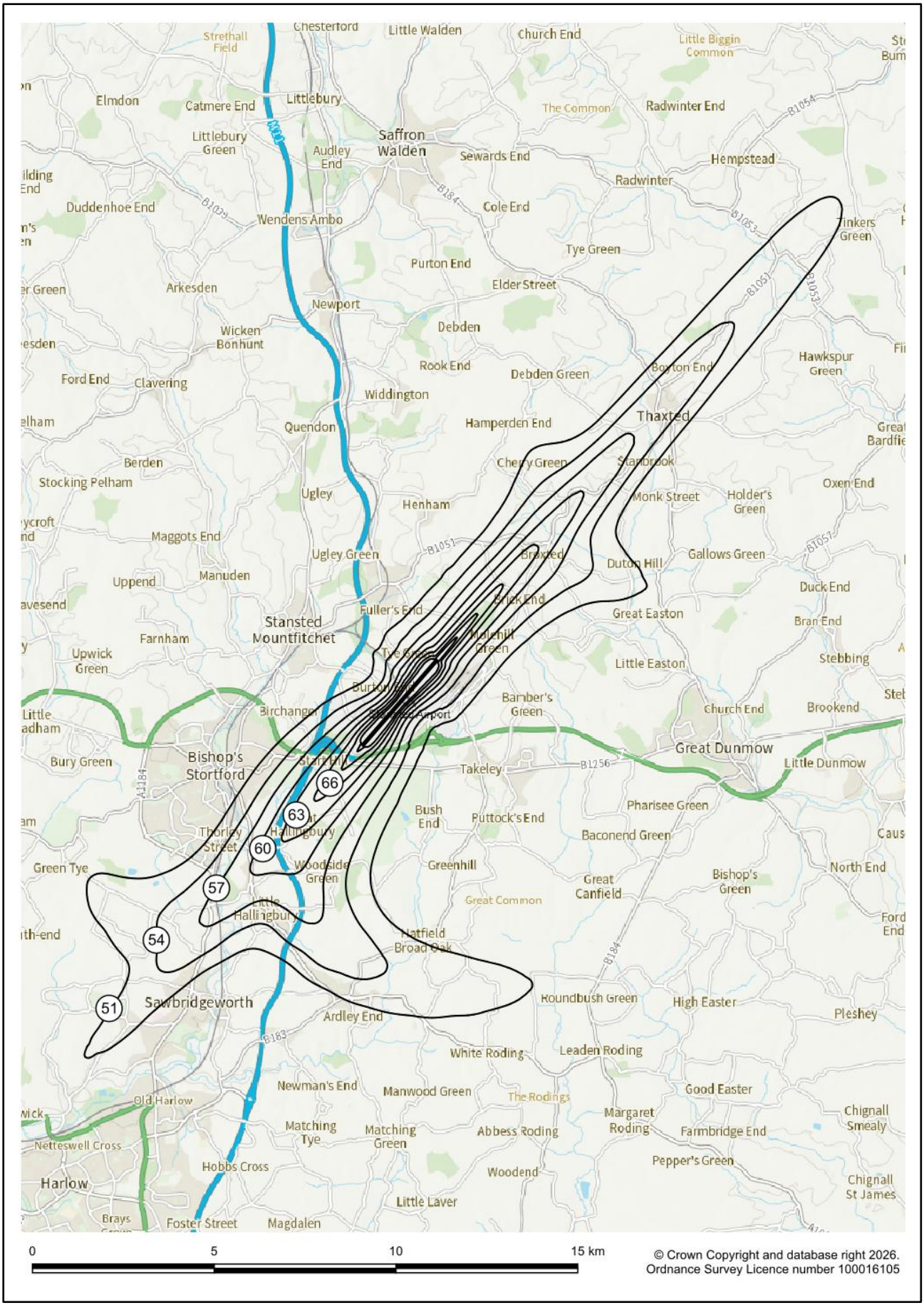


Figure B15 Stansted 2025 summer night standard modal split (72% SW / 28% NE) $L_{Aeq,8h}$ contours

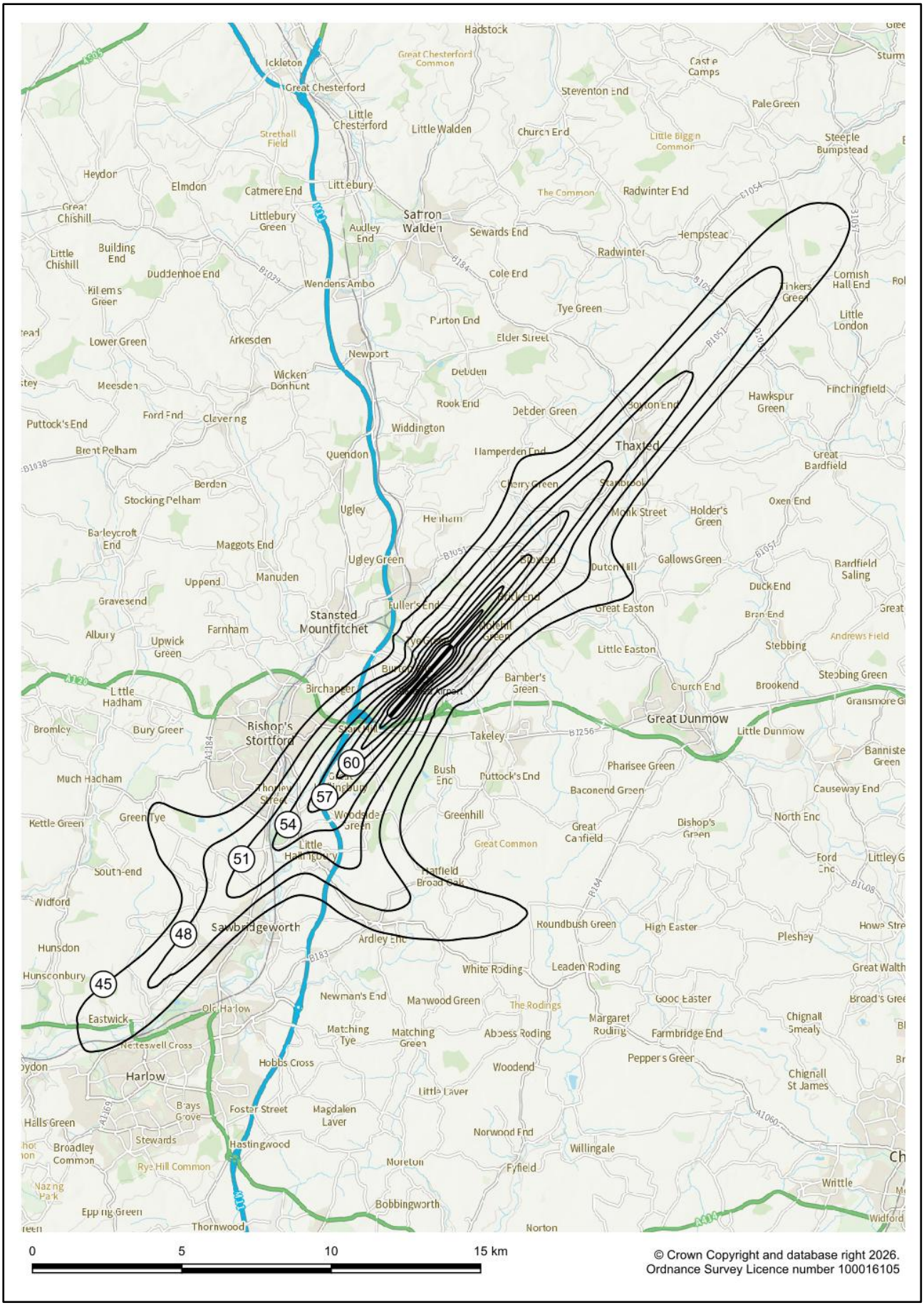


Figure B16 Stansted summer day actual modal split 2025 (72% SW / 28% NE) and 2024 (76% SW / 24% NE) $L_{Aeq,16h}$ contours

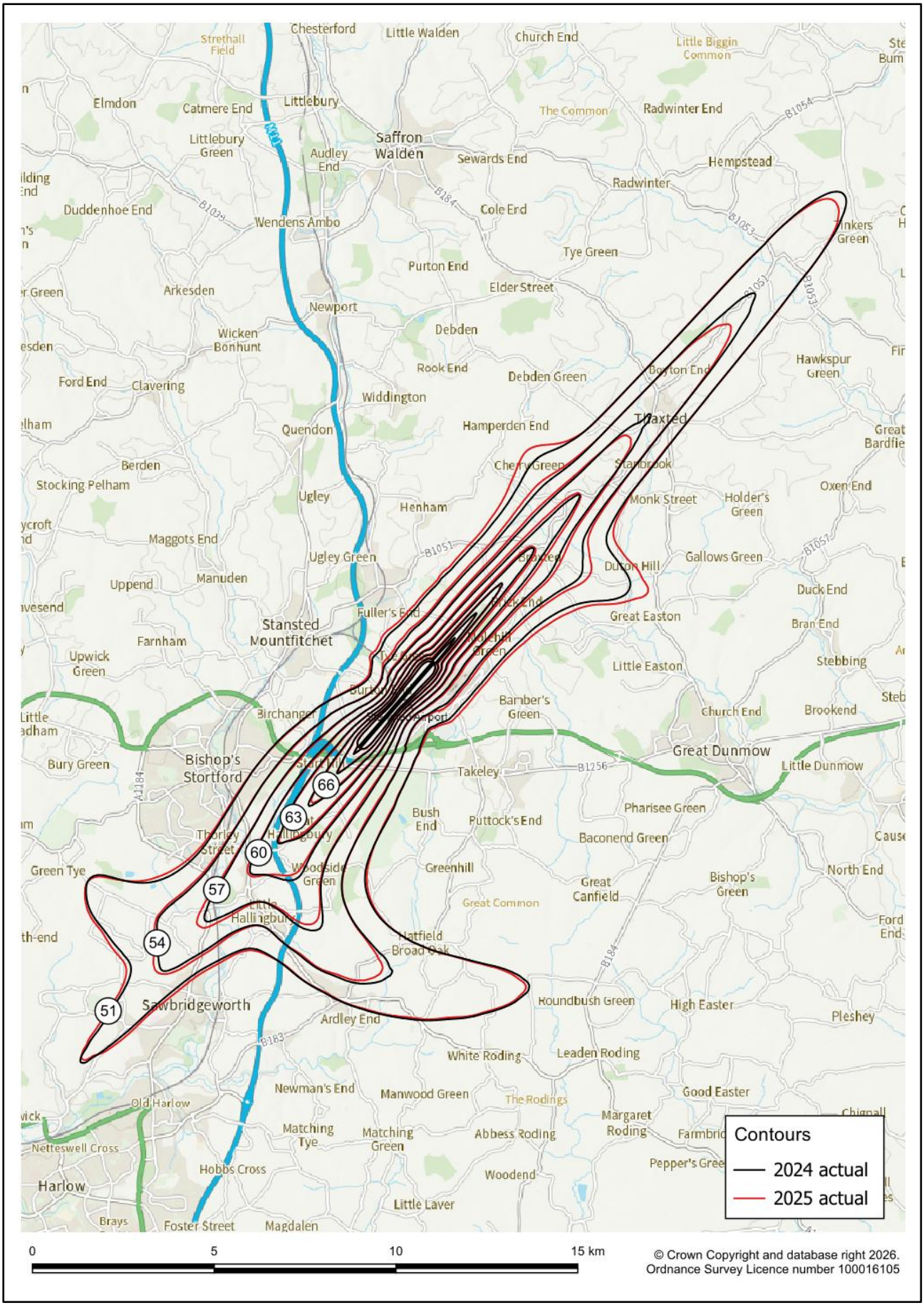


Figure B17 Stansted summer night actual modal split 2025 (71% SW / 29% NE) and 2024 (78% SW / 22% NE) $L_{Aeq,8h}$ contours

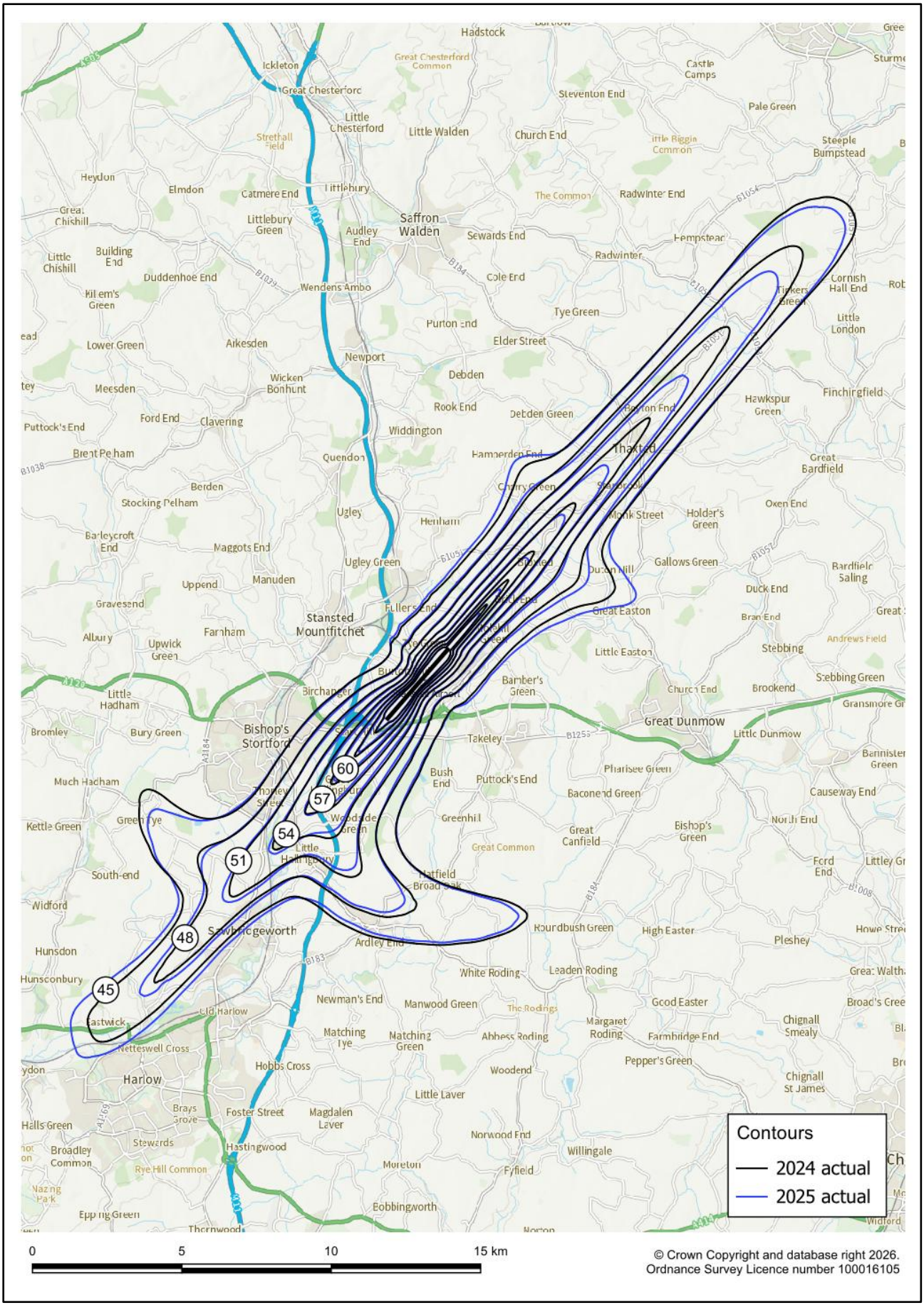


Figure B18 Stansted summer day standard modal split 2025 (73% SW / 27% NE) and 2024 (72% SW / 28% NE) $L_{Aeq,16h}$ contours

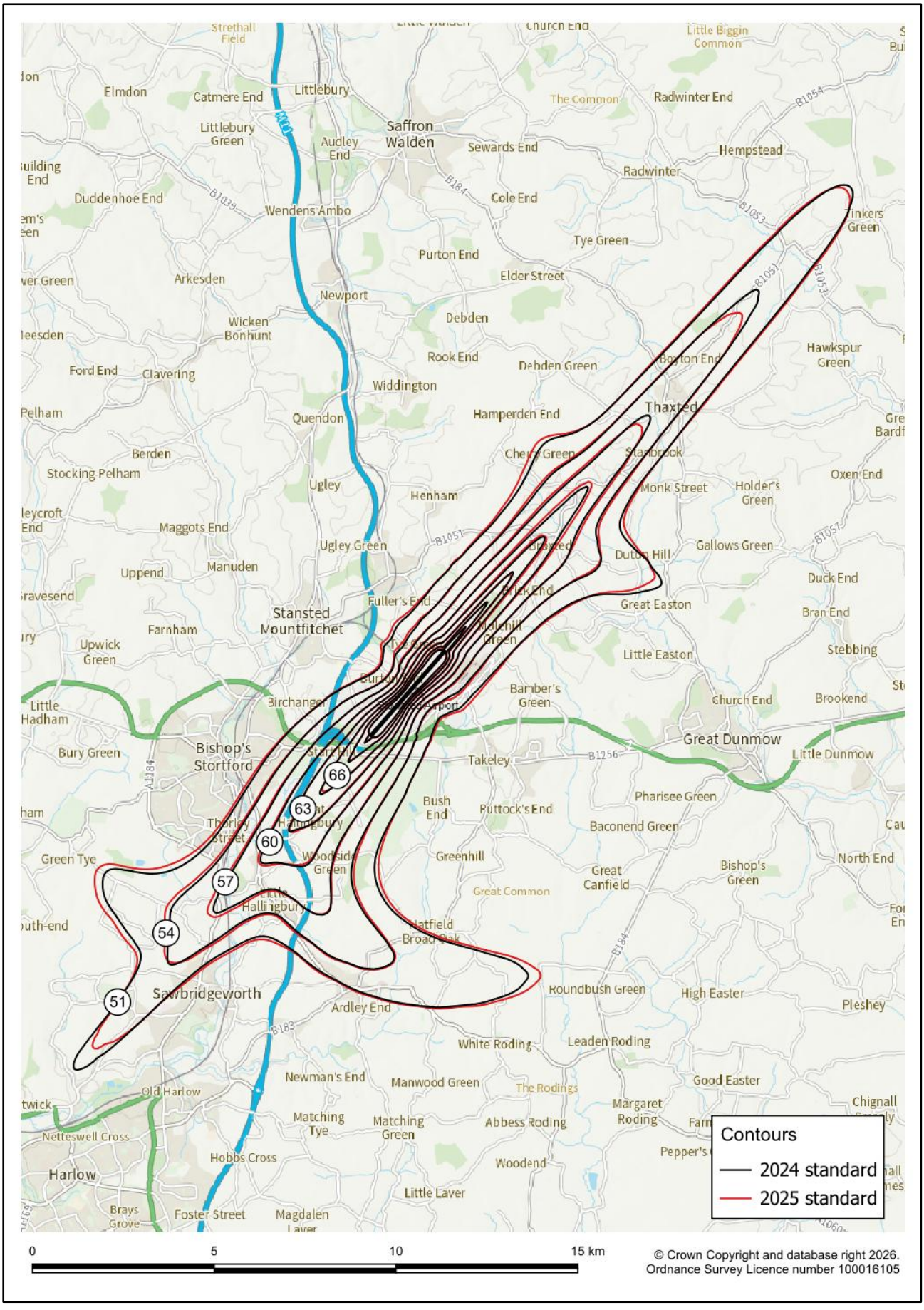
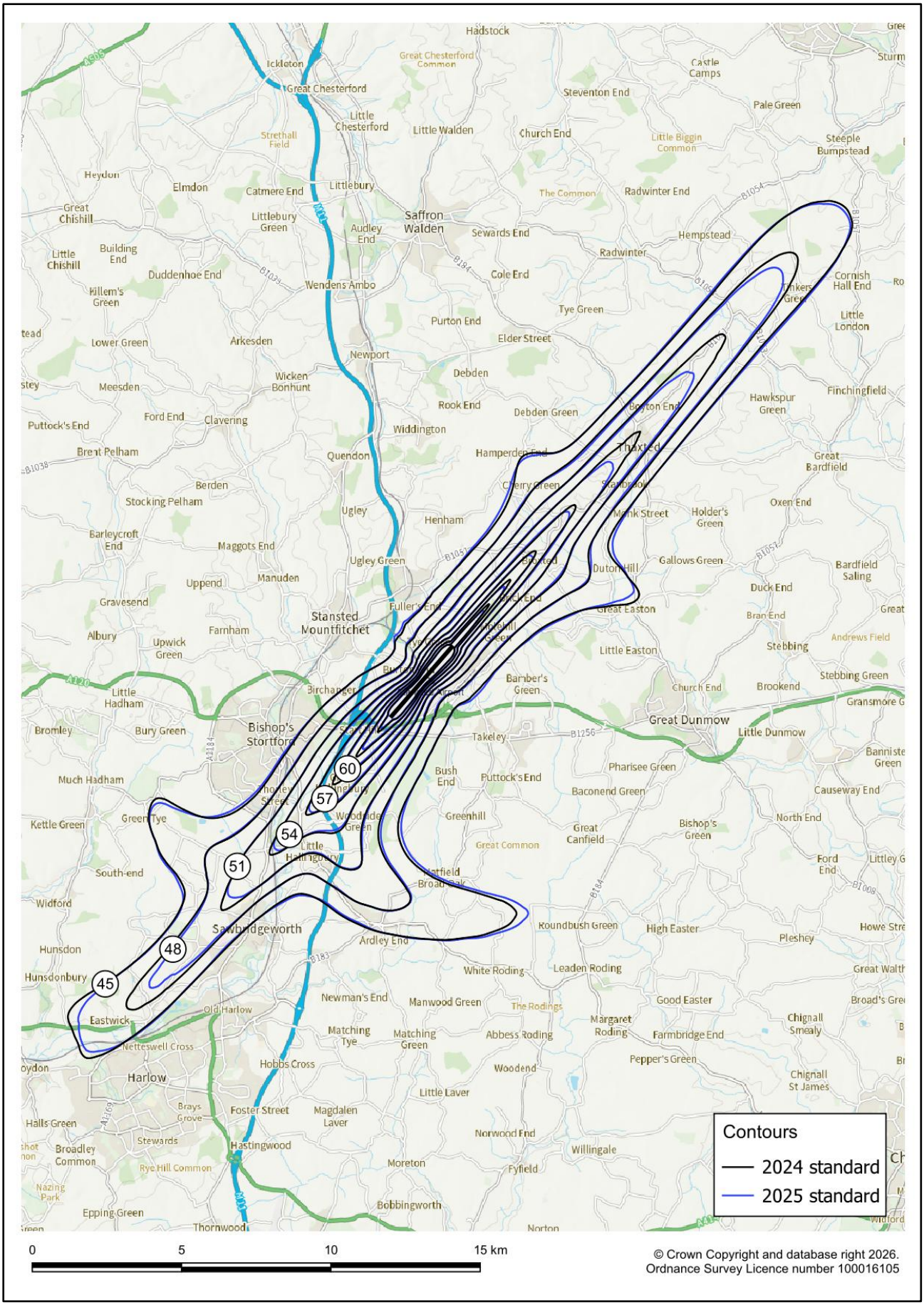


Figure B19 Stansted summer night standard modal split 2025 (72% SW / 28% NE) and 2024 (71% SW / 29% NE) $L_{Aeq,8h}$ contours



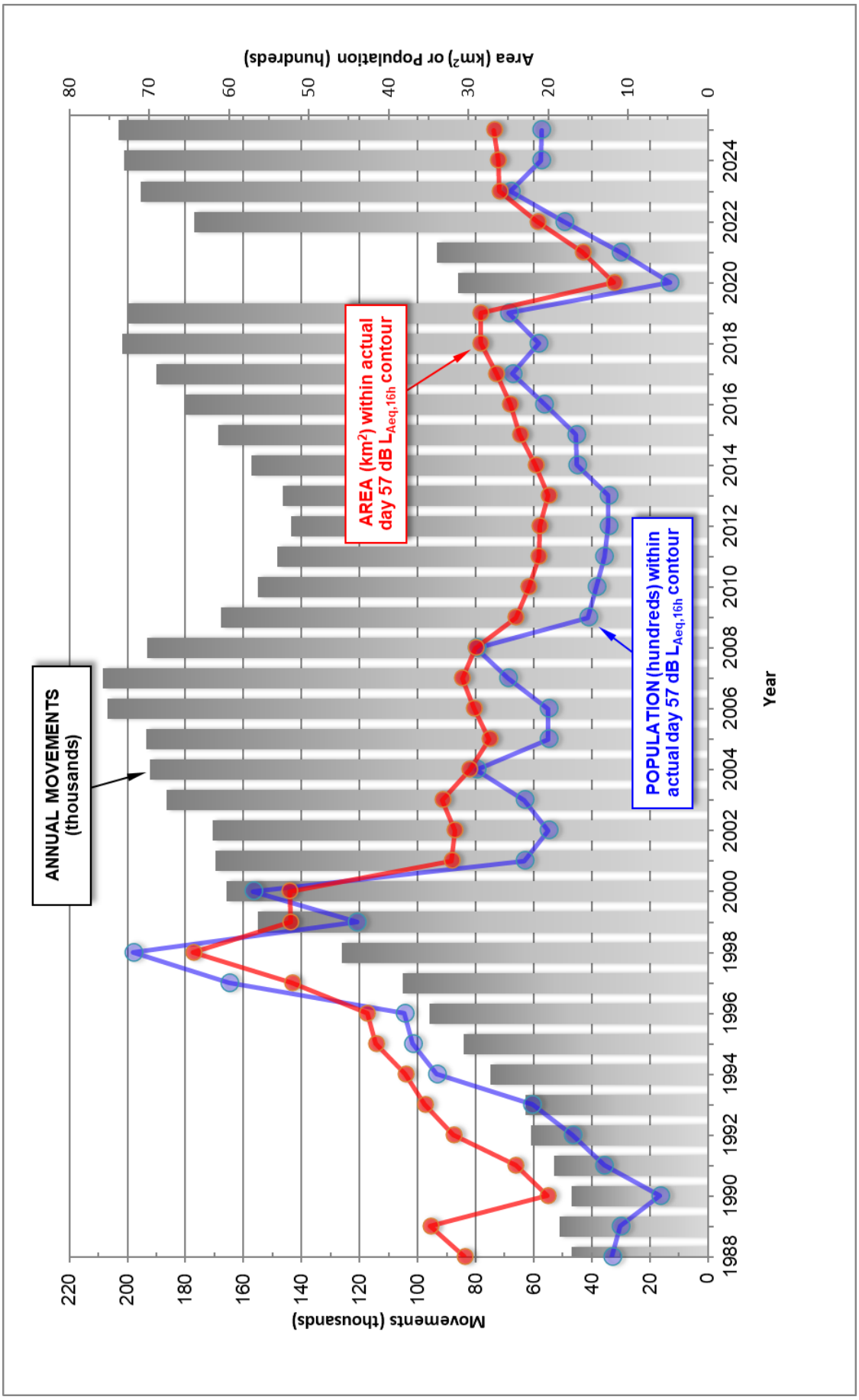


Figure B20 Stansted 1988-2025 annual traffic and summer day $L_{Aeq,16h}$ noise contour area/population trends

Figure B21 Stansted 2025 summer day standard modal split (73% SW / 27% NE) N60 contours

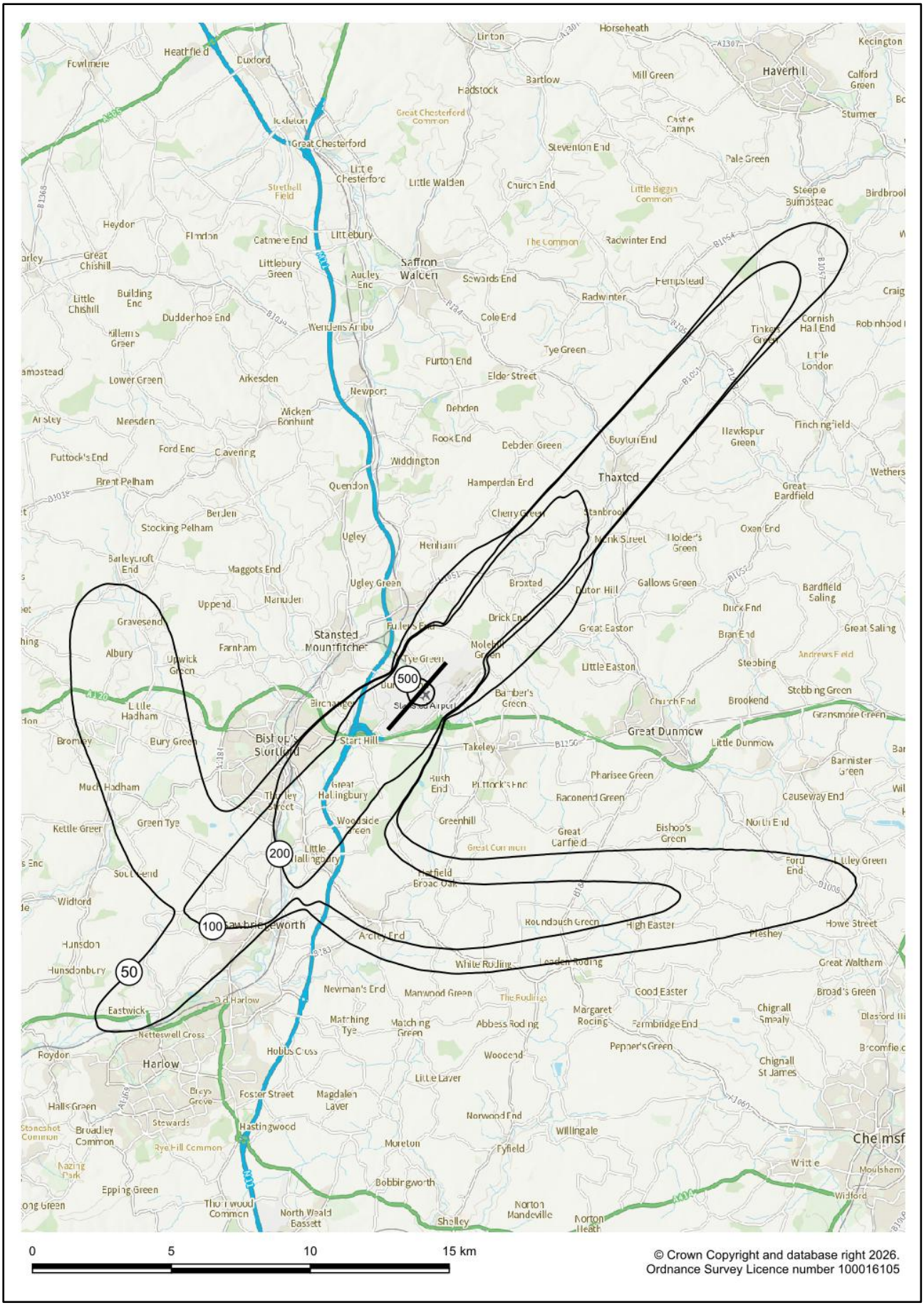
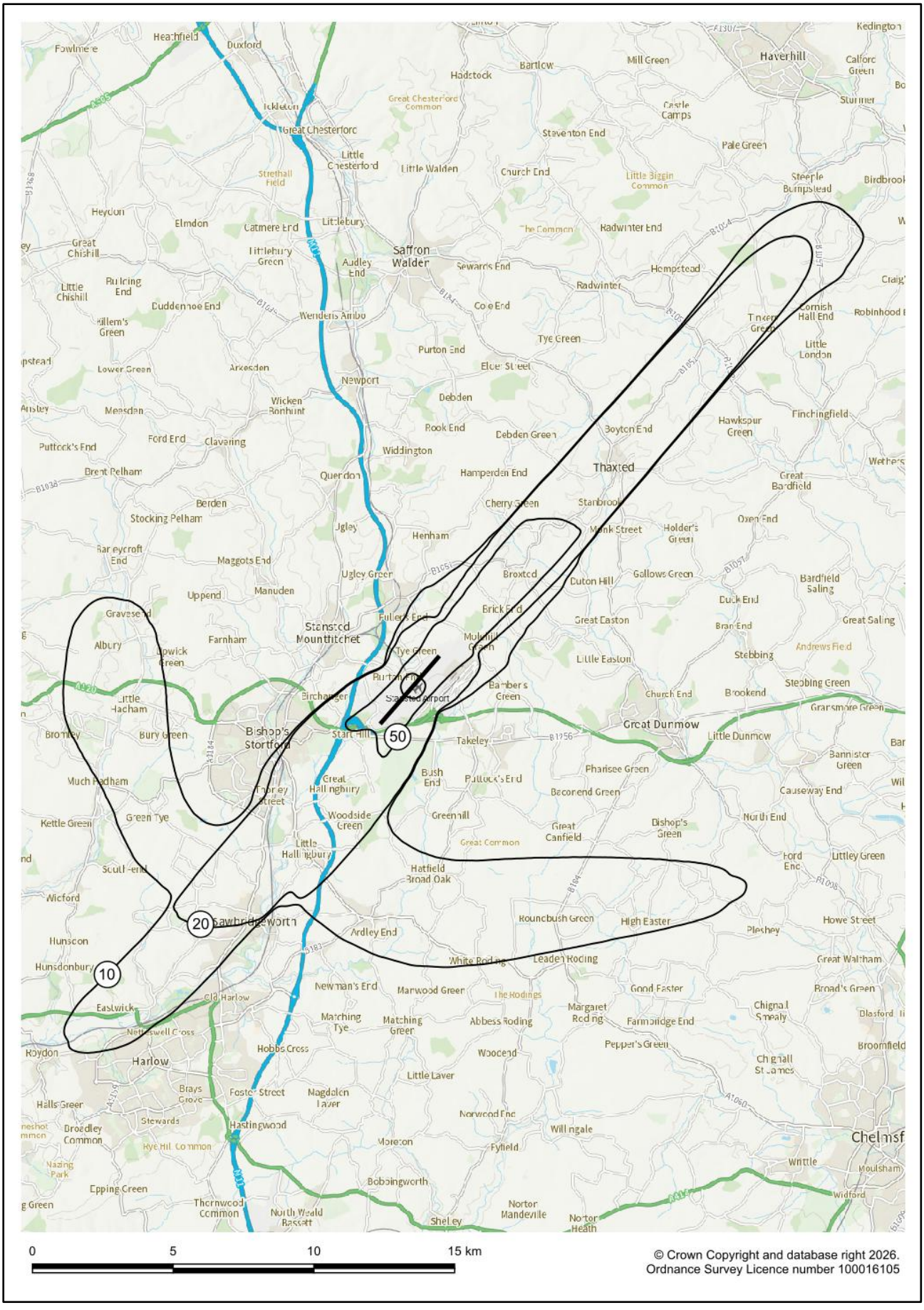


Figure B22 Stansted 2025 summer night standard modal split (72% SW / 28% NE) N60 contours



APPENDIX C

Tables

Table C1 Stansted 2024 and 2025 average summer day movements by ANCON type

ANCON type	2024 departures	2024 arrivals	2024 total	2025 departures	2025 arrivals	2025 total	Change departures	Change arrivals	Change total
B733	0.4	0.3	0.7	0.3	0.3	0.7	0.0	0.0	0.0
B736	0.8	0.9	1.7	0.9	0.9	1.8	+0.1	0.0	+0.1
B738	177.3	155.2	332.5	169.1	152.4	321.6	-8.2	-2.8	-11.0
B738MAX	32.9	30.0	62.9	44.7	40.8	85.5	+11.7	+10.8	+22.5
B739MAX	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	+0.1
B744G	0.5	0.3	0.8	0.9	0.8	1.7	+0.4	+0.5	+0.9
B744P	0.4	0.4	0.8	0.4	0.4	0.8	0.0	0.0	+0.1
B744R	0.4	0.4	0.8	0.4	0.4	0.7	0.0	0.0	0.0
B747	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B748	0.6	0.1	0.7	0.0	0.0	0.0	-0.6	-0.1	-0.7
B757C	0.0	0.2	0.2	0.0	0.0	0.0	0.0	-0.2	-0.2
B757E	0.2	0.4	0.7	0.5	0.1	0.5	+0.2	-0.4	-0.1
B762	0.3	0.0	0.3	0.1	0.1	0.2	-0.2	0.0	-0.1
B763G	1.8	1.5	3.2	1.8	1.6	3.5	+0.1	+0.1	+0.2
B763P	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
B764	0.1	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.0
B772G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B773G	5.8	5.8	11.6	5.4	5.4	10.8	-0.4	-0.4	-0.8
B788	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
B789	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
CRJ	0.2	0.2	0.4	0.3	0.3	0.5	+0.1	+0.1	+0.2
CRJ900	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
EA221	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
EA30	0.6	0.0	0.6	0.5	0.0	0.5	-0.1	0.0	-0.1
EA31	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
EA318	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
EA319C	4.1	4.1	8.2	3.3	3.3	6.6	-0.7	-0.8	-1.6
EA319NC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA319V	0.3	0.3	0.6	0.4	0.2	0.6	+0.1	-0.1	0.0
EA320C	6.6	6.9	13.5	7.3	7.2	14.5	+0.7	+0.3	+1.0
EA320NC	4.7	4.4	9.1	4.6	4.5	9.2	-0.1	+0.1	0.0
EA320NP	0.0	0.0	0.0	0.4	0.4	0.8	+0.4	+0.4	+0.8
EA320V	2.5	2.6	5.1	3.4	3.3	6.8	+0.9	+0.8	+1.7
EA321C	3.0	2.9	5.9	3.2	2.9	6.1	+0.2	0.0	+0.2
EA321NC	3.9	4.2	8.1	3.5	3.8	7.3	-0.5	-0.3	-0.8
EA321NP	0.5	0.6	1.0	0.8	1.0	1.8	+0.4	+0.4	+0.8
EA321V	1.3	2.7	4.1	0.4	0.9	1.3	-1.0	-1.8	-2.8

ANCON type	2024 departures	2024 arrivals	2024 total	2025 departures	2025 arrivals	2025 total	Change departures	Change arrivals	Change total
EA33	1.5	1.6	3.1	0.8	0.9	1.7	-0.7	-0.7	-1.4
EA34	0.2	0.2	0.5	0.2	0.2	0.4	0.0	0.0	0.0
EA346	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA359	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA3510	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ERJ	1.0	1.1	2.1	1.0	1.0	1.9	0.0	-0.1	-0.1
ERJ170	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
ERJ190	1.2	1.1	2.3	1.3	1.3	2.6	+0.1	+0.2	+0.3
EXE3	12.7	12.9	25.6	12.4	12.3	24.7	-0.4	-0.6	-0.9
L4P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LTT	0.5	0.5	1.1	0.1	0.1	0.1	-0.5	-0.5	-1.0
SP	0.2	0.3	0.5	0.4	0.4	0.8	+0.2	+0.1	+0.3
STP	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
STT	0.5	0.5	1.1	0.5	0.5	1.0	0.0	0.0	-0.1
Total	**267.6**	**243.0**	**510.5**	**269.6**	**248.0**	**517.6**	**+2.1**	**+5.0**	**+7.1**
							(+1%)	(+2%)	(+1%)

Notes:

- All numbers are rounded to 1 decimal place. Movement changes have been calculated from unrounded numbers.
- ANCON type assignments were based on the Cirium aircraft fleet database.

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Table C2 Stansted 2024 and 2025 average summer night movements by ANCON type

ANCON type	2024 departures	2024 arrivals	2024 total	2025 departures	2025 arrivals	2025 total	Change departures	Change arrivals	Change total
B733	0.6	0.6	1.1	0.6	0.6	1.1	0.0	0.0	0.0
B736	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
B738	25.8	48.0	73.7	24.9	41.6	66.5	-0.9	-6.3	-7.2
B738MAX	4.4	7.4	11.9	6.3	10.2	16.5	+1.9	+2.7	+4.6
B739MAX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B744G	0.0	0.2	0.2	0.0	0.0	0.0	0.0	-0.1	-0.1
B744P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B744R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B748	0.0	0.5	0.5	0.0	0.0	0.0	0.0	-0.5	-0.5
B757C	0.1	0.0	0.2	0.0	0.0	0.0	-0.1	0.0	-0.2
B757E	1.9	1.7	3.6	1.7	2.1	3.8	-0.2	+0.4	+0.2
B762	0.0	0.2	0.2	0.0	0.0	0.0	0.0	-0.2	-0.2
B763G	1.2	1.5	2.7	1.2	1.4	2.6	0.0	-0.1	-0.1
B764	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B773G	0.5	0.5	0.9	0.5	0.5	1.0	+0.1	0.0	+0.1
B789	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CRJ900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA30	0.1	0.6	0.7	0.5	1.0	1.5	+0.4	+0.3	+0.8
EA319C	0.1	0.1	0.2	0.1	0.1	0.2	-0.1	0.0	0.0
EA319V	0.0	0.0	0.0	0.0	0.2	0.2	0.0	+0.2	+0.2
EA320C	0.5	0.3	0.8	0.1	0.2	0.3	-0.4	0.0	-0.4
EA320NC	0.0	0.3	0.3	0.0	0.2	0.2	0.0	-0.1	-0.1
EA320V	0.3	0.2	0.4	0.1	0.1	0.2	-0.2	0.0	-0.2
EA321C	1.0	1.2	2.1	0.7	1.1	1.8	-0.2	-0.1	-0.3
EA321NC	1.0	0.8	1.8	1.1	0.7	1.8	0.0	-0.1	0.0
EA321NP	0.1	0.0	0.1	0.1	0.0	0.2	+0.1	0.0	+0.1
EA321V	1.4	0.1	1.5	0.5	0.0	0.5	-0.9	-0.1	-1.0
EA33	0.1	0.0	0.2	0.0	0.0	0.0	-0.1	0.0	-0.1
EA34	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
ERJ	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1
ERJ190	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	0.0
EXE3	1.5	1.3	2.8	1.1	1.1	2.2	-0.4	-0.2	-0.6
L4P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP	0.0	0.0	0.1	0.1	0.1	0.1	0.0	+0.1	+0.1
STP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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ANCON type	2024 departures	2024 arrivals	2024 total	2025 departures	2025 arrivals	2025 total	Change departures	Change arrivals	Change total
STT	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total	**40.9**	**65.6**	**106.5**	**39.7**	**61.4**	**101.1**	**-1.1**	**-4.2**	**-5.3**
							(-3%)	(-6%)	(-5%)

Notes:

- All numbers are rounded to 1 decimal place. Movement changes have been calculated from unrounded numbers.
- ANCON type assignments were based on the Cirium aircraft fleet database.

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
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 Dreamliner
B789	Boeing 787-9 Dreamliner
B7810	Boeing 787-10 Dreamliner
BA46	BAe 146/Avro RJ series
CRJ	Bombardier CRJ100/200 series

ANCON type	Description
CRJ700	Bombardier CRJ700 series
CRJ900	Bombardier CRJ900 series
CRJ1000	Bombardier CRJ1000 series
DC87	McDonnell Douglas DC-8-70 series
DC10	McDonnell Douglas DC-10
E190E2	Embraer E190-E2
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 E170/175
ERJ190	Embraer E190/195

ANCON type	Description
EXE2	Chapter 2 executive (business) jets
EXE3	Chapter 3 executive (business) jets
FK10	Fokker 70/100
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.
dBA	Units of sound level on the A-weighted scale, which incorporates a frequency weighting approximating the characteristics of human hearing.
DfT	Department for Transport (UK Government)
ERCD	Environmental Research and Consultancy Department
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.
LOAEL	Lowest Observed Adverse Effect Level
mppa	million passengers per annum
N60	Number of aircraft noise events exceeding 60 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
STAL	Stansted Airport Limited