TECHNICAL NOTE (v.2):
Edinburgh Airport – new SIDs ACP noise assessment

Methodology

Noise contours have been calculated using the ANCON noise model (v2.3) for the following scenarios to meet the requirements of CAP 725:

- 51-72 dBA Leq contours (plotted at 3 dB intervals) for the existing SIDs in 2018;
- 51-72 dBA Leq contours (plotted at 3 dB intervals) with the new SIDs airspace change implemented in 2018;
- 51-72 dBA Leq contours (plotted at 3 dB intervals) for the forecast year 2023 assuming the airspace change is not approved;
- 51-72 dBA Leq contours (plotted at 3 dB intervals) for the forecast year 2023 with the airspace change implemented; and
- 80 and 90 dBA SEL footprints for the most frequent and noisiest aircraft types currently operating at night, for the existing and proposed new SIDs.

As the airspace change would enable traffic growth, a 2023 scenario assuming the airspace change is not approved (and with traffic growth constrained) has been produced for comparison purposes.

The 51 and 54 dBA Leq contour levels were generated at the request of NATS.

NATS also requested the production of Lmax footprints as a supplementary noise metric for the most frequent and noisiest aircraft types operating on the existing and proposed SIDs.

Leq contours

The Leq contours were based on Edinburgh Airport traffic data for the 92-day summer period (16 June – 15 September 2016, 0700-2300 local time). Total departure and arrival movement numbers by ANCON aircraft type were determined. SID distribution statistics for each runway direction by ANCON type were then calculated and applied to the total summer period daytime departure traffic. This enabled the modelling of an average '100% westerly' and '100% easterly' summer day for 2016, i.e. what would have occurred had all the traffic operated in a single runway direction. These single mode results could then be combined with the runway split to produce average mode contours.

The flight track coordinates of the current nominal SIDs at Edinburgh Airport were supplied by NATS (**Figure 1**).[1] 'Straight-in' arrival tracks for runway 06/24 were assumed. Representative lateral spread was applied to the current nominal departure tracks in the modelling.

NATS also provided flight track coordinates for each of the proposed SIDs (**Figure 2**). Spreads reflecting RNAV routes were modelled for the new SIDs. NATS requested the assessment of two options for the proposed westerly D-HAVEN and easterly E-GOSAM/F-GRICE SIDs:

[1] Note: The secondary, crosswind runway 12/30 is rarely used and therefore not considered by this assessment.

(a) D-HAVEN Option 1 together with E-GOSAM Option 1 and F-GRICE Option 1; and
(b) D-HAVEN Option 2 together with E-GOSAM Option 2 and F-GRICE Option 2.

Thus two sets of Leq contours covering these options were produced for each post-implementation scenario.

All flight profiles of height, speed and thrust were based on proxy 2015 data from Gatwick as they would be representative of operations at Edinburgh Airport.

The effects of the surrounding topography were modelled using *Meridian 2 Gridded Heights* terrain data obtained from Ordnance Survey.

As implementation of the airspace change is planned to be in 2018, it was deemed appropriate to use a long-term average runway split for the Leq contours. Based on the available data (for the past 6 years), the average split was 70% west / 30% east. The same runway split was also assumed for the 2023 forecast contours. Having generated the 2016 Leq day contours for the existing routes and average runway modal split, a scaling factor of +7.7% (i.e. 10 log [1.077] = +0.32 dB) representing two years of traffic growth (as derived from figures supplied by NATS) was applied to the 2016 results to produce the 2018 Leq day contours.

Modelling was then performed with the 2016 summer day departure traffic allocated to the new SIDs, using 2018 route distributions derived from NATS data. The results for the 2016 average summer day scenario with the new SIDs were then scaled by +7.7% (i.e. +0.32 dB) representing two years' traffic growth to 2018.

For the 5-year forecast 2023 scenario assuming the airspace change is <u>not</u> approved, traffic growth from 2018 was constrained at 8% across all routes as advised by NATS. Thus the 2016 results were scaled by a factor of 1.08 x 1.077 = 1.163 or +16.3% (i.e. 10 log [1.163] = +0.66 dB).

For the 5-year forecast 2023 scenario with the airspace change, the 2016 summer day departure traffic was allocated across the new SIDs using 2023 distribution data supplied by NATS, and the 2016 average summer day results scaled by +30% (i.e. 10 log [1.30] = +1.14 dB) representing 7 years' traffic growth from 2016 to 2023.

SEL footprints

SEL footprints were produced for the most frequent and noisiest aircraft types that operate at night (2300-0700 local time) over the 2016 summer period at Edinburgh Airport, for each of the current and proposed SIDs (excluding the new route A-TALLA, which is only for non-jets). The footprints are plotted at 80 and 90 dBA SEL. The most frequent type at night was the Boeing 737-800 (ANCON type 'B738'), whilst the noisiest type with at least one movement per night on average was the Airbus A330 (ANCON type 'EA33').

At the request of NATS, 80 and 90 dBA SEL footprints for a large twin-turboprop (ANCON type 'LTT') were generated for the proposed routes A-TALLA and C-GRICE.

As with the Leq contours, the effects of the surrounding topography were modelled using *Meridian 2 Gridded Heights* terrain data obtained from Ordnance Survey.

Lmax footprints

Lmax footprints were also produced for the same scenarios as the SEL footprints to provide supplementary noise information. They were plotted at levels 70 and 80 dBA Lmax, replicating approximately the extents of the SEL footprints.

Results

Leq contours

The 2018 Leq noise contours modelled with the current SIDs are shown in **Figure 3**. The estimated areas, populations and households within the contours are summarised in **Table 1**. The population database used was a 2016 update of the 2011 Census supplied by CACI Ltd.

The contour results for the 2018 contours with the airspace change implemented are shown in **Figure 4.** The contours for both route options are shown, with the Option 2 results indicated in red. Estimated areas, populations and households within the contours for route options 1 and 2 are given in **Tables 2 & 3** respectively.

The contour results for the 5-year forecast 2023 contours without the airspace change are shown in **Figure 5.** Estimated areas, populations and households within these contours are given in **Table 4**.

The contour results for the 5-year forecast 2023 contours with the airspace change are shown in **Figure 6.** The contours for both route options are shown, with the Option 2 results indicated in red. Estimated areas, populations and households within the contours for route options 1 and 2 are given in **Tables 5 & 6** respectively.

SEL footprints

SEL footprints have been generated for each of the current and proposed departure routes from Runways 24 and 06. Separate diagrams are provided for each aircraft type and runway direction as follows:

- Most frequent aircraft type Boeing 737-800 (B738) on Runway 24 existing SIDs – **Figure 7**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 06 existing SIDs – **Figure 8**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 24 proposed SIDs – **Figure 9**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 06 proposed SIDs – **Figure 10**

- Noisiest aircraft type Airbus A330 (EA33) on Runway 24 existing SIDs – **Figure 11**
- Noisiest aircraft type Airbus A330 (EA33) on Runway 06 existing SIDs – **Figure 12**

- Noisiest aircraft type Airbus A330 (EA33) on Runway 24 proposed SIDs – **Figure 13**
- Noisiest aircraft type Airbus A330 (EA33) on Runway 06 proposed SIDs – **Figure 14**

- Large twin-turboprop (LTT) on Runway 24 proposed SIDs A-TALLA and C-GRICE – **Figure 15**

The estimated areas, populations and households within the SEL footprints are summarised in **Table 7** for the Boeing 737-800, **Table 8** for the Airbus A330 and **Table 9** for the large twin-turboprop. The population database used was a 2016 update of the 2011 Census supplied by CACI Ltd.

Lmax footprints

Lmax footprints have been generated for each of the current and proposed departure routes from Runways 24 and 06. Separate diagrams are provided for each aircraft type and runway direction as follows:

- Most frequent aircraft type Boeing 737-800 (B738) on Runway 24 existing SIDs – **Figure 16**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 06 existing SIDs – **Figure 17**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 24 proposed SIDs – **Figure 18**
- Most frequent aircraft type Boeing 737-800 (B738) on Runway 06 proposed SIDs – **Figure 19**

- Noisiest aircraft type Airbus A330 (EA33) on Runway 24 existing SIDs – **Figure 20**
- Noisiest aircraft type Airbus A330 (EA33) on Runway 06 existing SIDs – **Figure 21**
- Noisiest aircraft type Airbus A330 (EA33) on Runway 24 proposed SIDs – **Figure 22**
- Noisiest aircraft type Airbus A330 (EA33) on Runway 06 proposed SIDs – **Figure 23**

- Large twin-turboprop (LTT) on Runway 24 proposed SIDs A-TALLA and C-GRICE – **Figure 24**

The estimated areas, populations and households within the Lmax footprints are summarised in **Table 10** for the Boeing 737-800, **Table 11** for the Airbus A330 and **Table 12** for the large twin-turboprop. The population database used was a 2016 update of the 2011 Census supplied by CACI Ltd.

ERCD
10 January 2017

Table 1 Edinburgh 2018 Leq contours with existing SIDs - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	60.4	35,100	14,600
> 54	34.1	11,600	4,900
> 57	18.9	4,200	1,800
> 60	10.0	2,100	900
> 63	5.4	400	200
> 66	3.1	100	100
> 69	1.8	< 100	< 100
> 72	1.0	0	0

Table 2 Edinburgh 2018 Leq contours with new SIDs (assuming Option 1 D-HAVEN, Option 1 E-GOSAM & Option 1 F-GRICE routes) - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	59.7	18,800	7,800
> 54	32.1	6,800	2,900
> 57	17.8	4,100	1,700
> 60	9.8	2,100	900
> 63	5.4	400	200
> 66	3.1	200	100
> 69	1.8	< 100	< 100
> 72	1.0	0	0

Table 3 Edinburgh 2018 Leq contours with new SIDs (assuming Option 2 D-HAVEN, Option 2 E-GOSAM & Option 2 F-GRICE routes) - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	59.9	21,100	8,800
> 54	32.9	6,700	2,900
> 57	18.4	4,100	1,700
> 60	10.0	2,200	1,000
> 63	5.4	400	200
> 66	3.1	200	100
> 69	1.8	< 100	< 100
> 72	1.0	0	0

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 4 Edinburgh 2023 Leq contours without airspace change - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	64.6	37,400	15,600
> 54	36.3	13,900	5,800
> 57	20.2	4,600	2,000
> 60	10.7	2,700	1,200
> 63	5.8	400	200
> 66	3.3	300	100
> 69	1.9	< 100	< 100
> 72	1.1	0	0

Table 5 Edinburgh 2023 Leq contours with new SIDs (assuming Option 1 D-HAVEN, Option 1 E-GOSAM & Option 1 F-GRICE routes) - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	71.1	27,400	11,400
> 54	38.1	7,700	3,300
> 57	20.9	4,300	1,900
> 60	11.5	3,200	1,400
> 63	6.4	500	200
> 66	3.6	300	100
> 69	2.0	< 100	< 100
> 72	1.2	0	0

Table 6 Edinburgh 2023 Leq contours with new SIDs (assuming Option 2 D-HAVEN, Option 2 E-GOSAM & Option 2 F-GRICE routes) - area, population and household estimates

Leq (dBA)	Area (km^2)	Population	Households
> 51	70.9	31,600	13,100
> 54	38.9	7,700	3,300
> 57	21.6	4,400	1,900
> 60	11.8	3,200	1,400
> 63	6.4	500	200
> 66	3.6	300	100
> 69	2.0	< 100	< 100
> 72	1.2	0	0

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 7 Boeing 737-800 (B738) SEL footprints – area, population and household estimates

SID	Runway	SEL (dBA)	Area (km^2)	Population	Households
Existing SIDs					
TALLA	24	> 80	27.3	13,200	5,600
TALLA	24	> 90	4.7	500	200
GOSAM	24	> 80	27.4	12,000	4,900
GOSAM	24	> 90	4.7	500	200
GRICE	24	> 80	28.0	12,900	5,300
GRICE	24	> 90	4.7	500	200
GOSAM	06	> 80	25.7	3,200	1,400
GOSAM	06	> 90	4.7	100	< 100
GRICE	06	> 80	25.4	3,200	1.400
GRICE	06	> 90	4.7	100	< 100
TALLA	06	> 80	25.3	3,300	1,400
TALLA	06	> 90	4.7	100	< 100
Proposed SIDs					
B5-GOSAM	24	> 80	27.4	12,200	5,000
B5-GOSAM	24	> 90	4.7	500	200
B2-GOSAM	24	> 80	27.6	6,600	2,800
B2-GOSAM	24	> 90	4.7	500	200
C-GRICE	24	> 80	26.4	6,100	2,800
C-GRICE	24	> 90	4.7	500	200
D-HAVEN (Option 1)	24	> 80	26.6	4,800	2,200
D-HAVEN (Option 1)	24	> 90	4.7	500	200
D-HAVEN (Option 2)	24	> 80	27.6	7,600	3,300
D-HAVEN (Option 2)	24	> 90	4.7	500	200
E-GOSAM (Option 1)	06	> 80	25.6	2,600	1,200
E-GOSAM (Option 1)	06	> 90	4.7	200	100
E-GOSAM (Option 2)	06	> 80	26.0	3,300	1,500
E-GOSAM (Option 2)	06	> 90	4.7	200	100
F-GRICE (Option 1)	06	> 80	25.3	2,600	1,200
F-GRICE (Option 1)	06	> 90	4.7	200	100
F-GRICE (Option 2)	06	> 80	25.3	3,300	1,400
F-GRICE (Option 2)	06	> 90	4.7	200	100
G-HAVEN	06	> 80	25.3	3,300	1,500
G-HAVEN	06	> 90	4.7	200	100
H-TALLA	06	> 80	25.3	3,300	1,500
H-TALLA	06	> 90	4.7	200	100
H-GOSAM	06	> 80	25.3	3,300	1,500
H-GOSAM	06	> 90	4.7	200	100

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 8 Airbus A330 (EA33) SEL footprints – area, population and household estimates

SID	Runway	SEL (dBA)	Area (km^2)	Population	Households
Existing SIDs					
TALLA	24	> 80	57.1	38,700	16,200
TALLA	24	> 90	8.6	700	300
GOSAM	24	> 80	55.0	50,400	21,300
GOSAM	24	> 90	8.6	700	300
GRICE	24	> 80	55.5	36,600	15,400
GRICE	24	> 90	8.6	700	300
GOSAM	06	> 80	51.6	18,300	8,000
GOSAM	06	> 90	8.3	300	100
GRICE	06	> 80	53.5	7,800	3,300
GRICE	06	> 90	8.3	300	100
TALLA	06	> 80	51.7	6,600	2,800
TALLA	06	> 90	8.3	300	100
Proposed SIDs					
B5-GOSAM	24	> 80	55.0	50,300	21,200
B5-GOSAM	24	> 90	8.6	700	300
B2-GOSAM	24	> 80	55.1	16,200	7,000
B2-GOSAM	24	> 90	8.6	700	300
C-GRICE	24	> 80	50.7	8,800	4,100
C-GRICE	24	> 90	8.6	700	300
D-HAVEN (Option 1)	24	> 80	51.1	12,500	5,700
D-HAVEN (Option 1)	24	> 90	8.6	800	300
D-HAVEN (Option 2)	24	> 80	53.1	16,700	7,100
D-HAVEN (Option 2)	24	> 90	8.6	700	300
E-GOSAM (Option 1)	06	> 80	51.3	7,600	3,200
E-GOSAM (Option 1)	06	> 90	8.3	300	100
E-GOSAM (Option 2)	06	> 80	51.5	7,800	3,300
E-GOSAM (Option 2)	06	> 90	8.3	300	100
F-GRICE (Option 1)	06	> 80	53.8	9,500	4,000
F-GRICE (Option 1)	06	> 90	8.3	300	100
F-GRICE (Option 2)	06	> 80	54.0	8,600	3,600
F-GRICE (Option 2)	06	> 90	8.3	300	100
G-HAVEN	06	> 80	51.2	6,600	2,800
G-HAVEN	06	> 90	8.3	300	100
H-TALLA	06	> 80	51.2	6,600	2,800
H-TALLA	06	> 90	8.3	300	100
H-GOSAM	06	> 80	51.2	6,600	2,800
H-GOSAM	06	> 90	8.3	300	100

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 9 Large twin-turboprop (LTT) SEL footprints – area, population and household estimates

SID	Runway	SEL (dBA)	Area (km^2)	Population	Households
Proposed SIDs					
A-TALLA	24	> 80	3.9	300	100
A-TALLA	24	> 90	0.4	0	0
C-GRICE	24	> 80	3.9	300	100
C-GRICE	24	> 90	0.4	0	0

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 10 Boeing 737-800 (B738) Lmax footprints – area, population and household estimates

SID	Runway	Lmax (dBA)	Area (km^2)	Population	Households
Existing SIDs					
TALLA	24	> 70	20.9	6,200	2,600
TALLA	24	> 80	5.0	500	200
GOSAM	24	> 70	20.9	5,800	2,500
GOSAM	24	> 80	5.0	500	200
GRICE	24	> 70	20.9	5,600	2,400
GRICE	24	> 80	5.0	500	200
GOSAM	06	> 70	18.5	1,400	700
GOSAM	06	> 80	5.0	200	100
GRICE	06	> 70	18.5	1,500	700
GRICE	06	> 80	5.0	200	100
TALLA	06	> 70	18.5	1,500	700
TALLA	06	> 80	5.0	200	100
Proposed SIDs					
B5-GOSAM	24	> 70	20.9	5,500	2,400
B5-GOSAM	24	> 80	5.0	500	200
B2-GOSAM	24	> 70	20.6	2,900	1,400
B2-GOSAM	24	> 80	5.0	500	200
C-GRICE	24	> 70	19.9	5,000	2,300
C-GRICE	24	> 80	5.0	500	200
D-HAVEN (Option 1)	24	> 70	19.8	3,600	1,700
D-HAVEN (Option 1)	24	> 80	5.0	500	200
D-HAVEN (Option 2)	24	> 70	20.6	3,800	1,800
D-HAVEN (Option 2)	24	> 80	5.0	500	200
E-GOSAM (Option 1)	06	> 70	18.6	1,600	800
E-GOSAM (Option 1)	06	> 80	5.0	200	100
E-GOSAM (Option 2)	06	> 70	18.5	1,700	800
E-GOSAM (Option 2)	06	> 80	5.0	200	100
F-GRICE (Option 1)	06	> 70	18.5	1,600	800
F-GRICE (Option 1)	06	> 80	5.0	200	100
F-GRICE (Option 2)	06	> 70	18.5	1,700	800
F-GRICE (Option 2)	06	> 80	5.0	200	100
G-HAVEN	06	> 70	18.5	1,700	800
G-HAVEN	06	> 80	5.0	200	100
H-TALLA	06	> 70	18.5	1,700	800
H-TALLA	06	> 80	5.0	200	100
H-GOSAM	06	> 70	18.5	1,700	800
H-GOSAM	06	> 80	5.0	200	100

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 11 Airbus A330 (EA33) Lmax footprints – area, population and household estimates

SID	Runway	Lmax (dBA)	Area (km^2)	Population	Households
Existing SIDs					
TALLA	24	> 70	33.1	24,600	10,200
TALLA	24	> 80	7.1	700	300
GOSAM	24	> 70	33.4	28,300	11,700
GOSAM	24	> 80	7.1	700	300
GRICE	24	> 70	34.2	25,000	10,300
GRICE	24	> 80	7.1	700	300
GOSAM	06	> 70	29.3	6,600	2,800
GOSAM	06	> 80	6.9	300	100
GRICE	06	> 70	30.0	4,300	1,900
GRICE	06	> 80	6.9	300	100
TALLA	06	> 70	29.0	3,800	1,600
TALLA	06	> 80	6.9	300	100
Proposed SIDs					
B5-GOSAM	24	> 70	33.4	27,900	11,500
B5-GOSAM	24	> 80	7.1	600	300
B2-GOSAM	24	> 70	34.8	7,400	3,200
B2-GOSAM	24	> 80	7.1	600	300
C-GRICE	24	> 70	30.0	6,200	2,900
C-GRICE	24	> 80	7.1	700	300
D-HAVEN (Option 1)	24	> 70	29.8	5,400	2,500
D-HAVEN (Option 1)	24	> 80	7.1	700	300
D-HAVEN (Option 2)	24	> 70	32.5	7,400	3,300
D-HAVEN (Option 2)	24	> 80	7.1	600	300
E-GOSAM (Option 1)	06	> 70	29.2	4,300	1,900
E-GOSAM (Option 1)	06	> 80	6.9	300	100
E-GOSAM (Option 2)	06	> 70	29.0	3,900	1,700
E-GOSAM (Option 2)	06	> 80	6.9	300	100
F-GRICE (Option 1)	06	> 70	30.7	3,900	1,700
F-GRICE (Option 1)	06	> 80	6.9	300	100
F-GRICE (Option 2)	06	> 70	30.2	3,900	1,700
F-GRICE (Option 2)	06	> 80	6.9	300	100
G-HAVEN	06	> 70	29.0	3,900	1,700
G-HAVEN	06	> 80	6.9	300	100
H-TALLA	06	> 70	29.0	3,900	1,700
H-TALLA	06	> 80	6.9	300	100
H-GOSAM	06	> 70	29.0	3,900	1,700
H-GOSAM	06	> 80	6.9	300	100

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Table 12 Large twin-turboprop (LTT) Lmax footprints – area, population and household estimates

SID	Runway	Lmax (dBA)	Area (km^2)	Population	Households
Proposed SIDs					
A-TALLA	24	> 70	7.5	400	200
A-TALLA	24	> 80	0.9	0	0
C-GRICE	24	> 70	7.4	500	200
C-GRICE	24	> 80	0.9	0	0

Note: Populations and households are given to the nearest 100. The population database used is a 2016 update of the 2011 Census supplied by CACI Ltd.

Figure 1 Edinburgh Airport existing SIDs

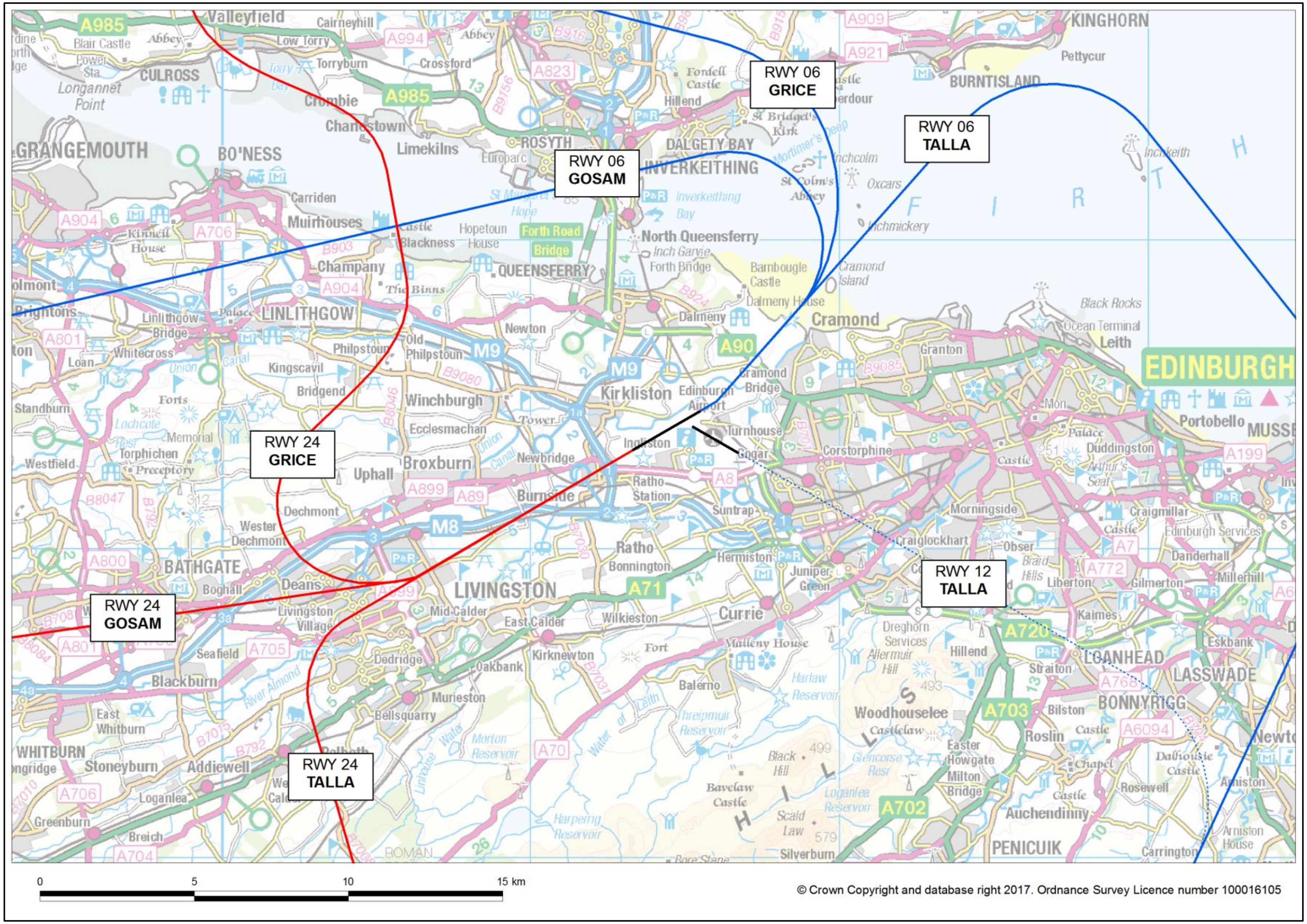

Figure 2 Edinburgh Airport proposed SIDs

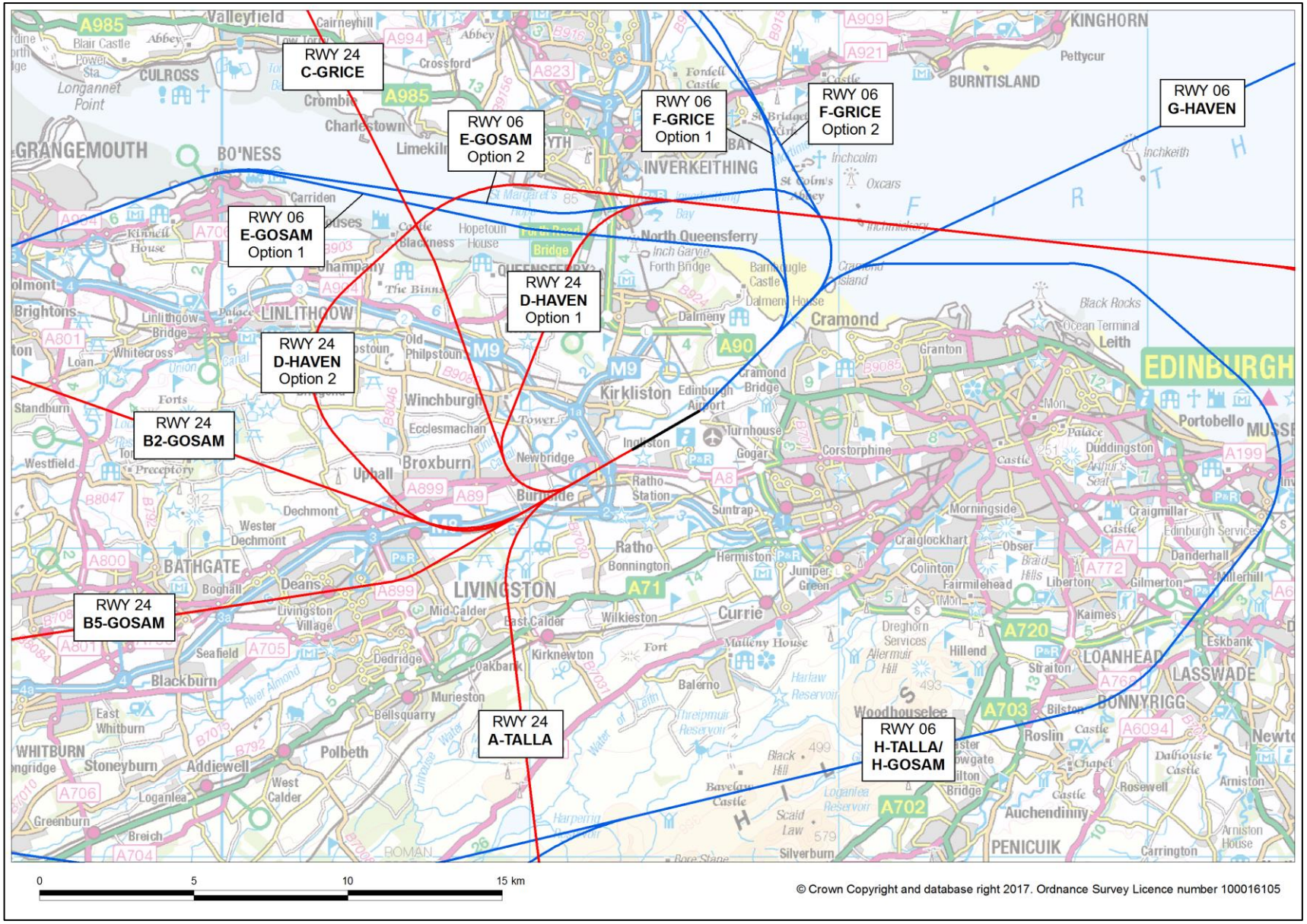

Figure 3 Edinburgh 2018 average summer day (70% W / 30% E) 51-72 dBA Leq noise contours – with existing SIDs

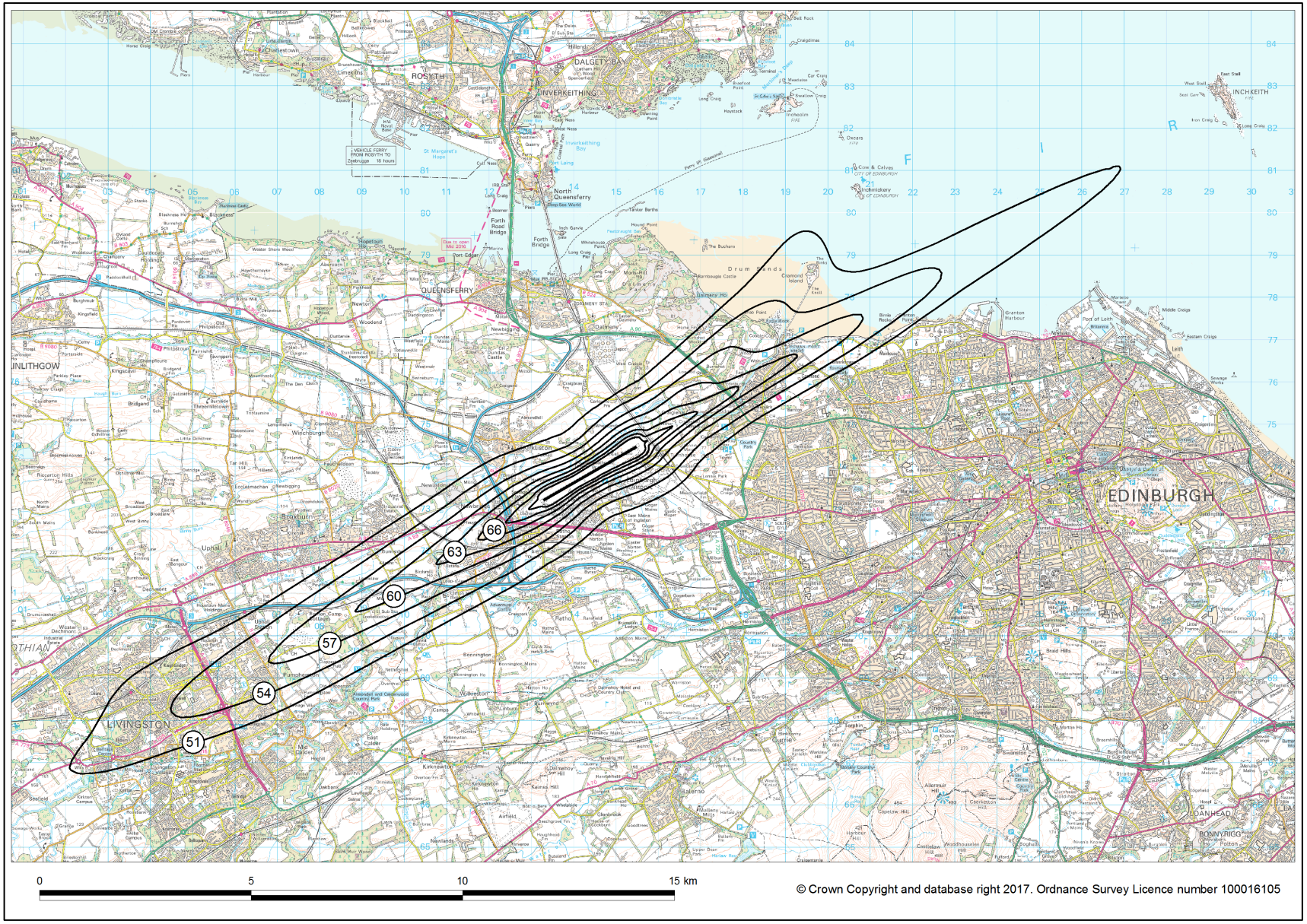

Figure 4 Edinburgh 2018 average summer day (70% W / 30% E) 51-72 dBA Leq noise contours – with proposed SIDs

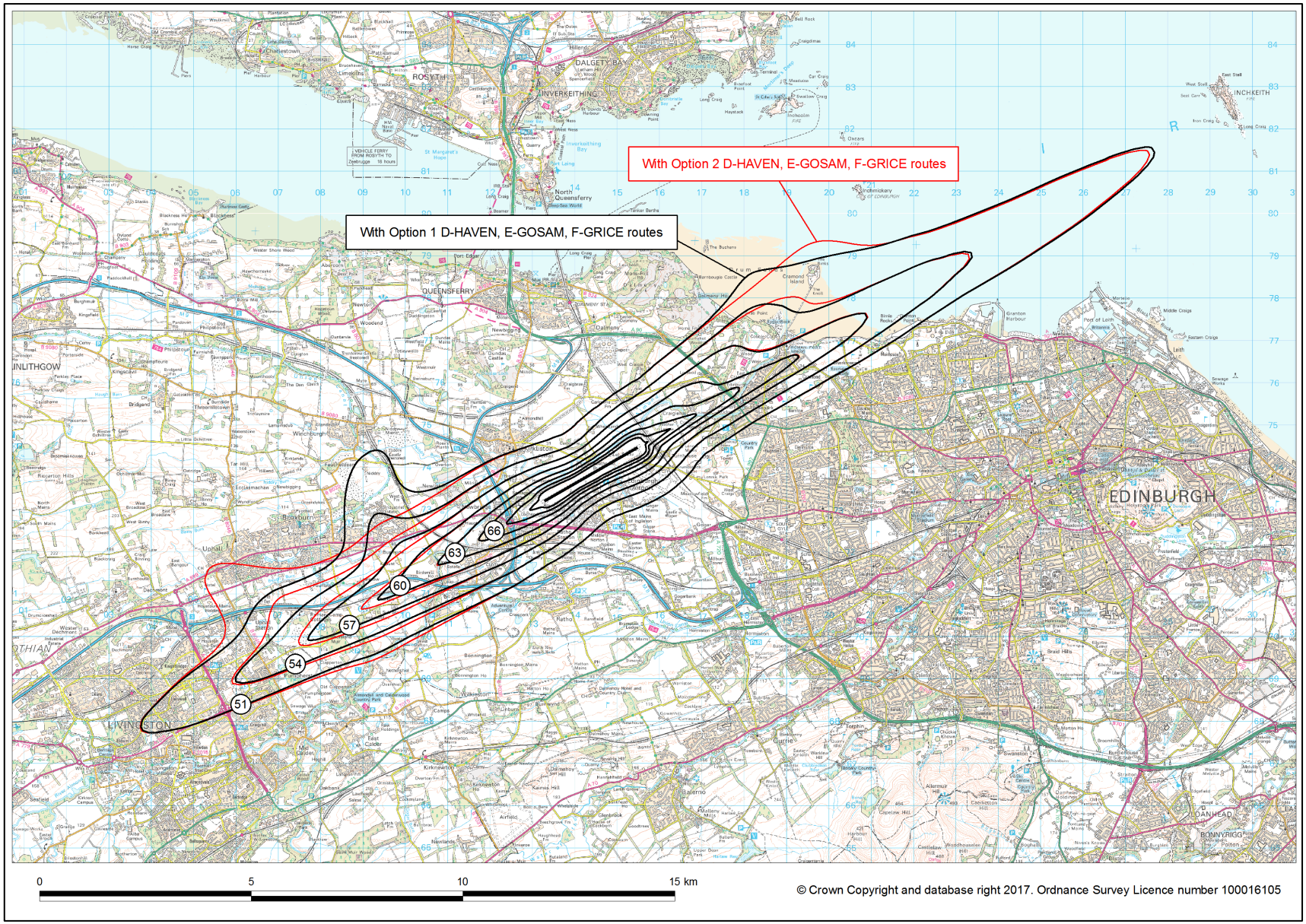

Figure 5 Edinburgh 2023 average summer day (70% W / 30% E) 51-72 dBA Leq noise contours – without airspace change

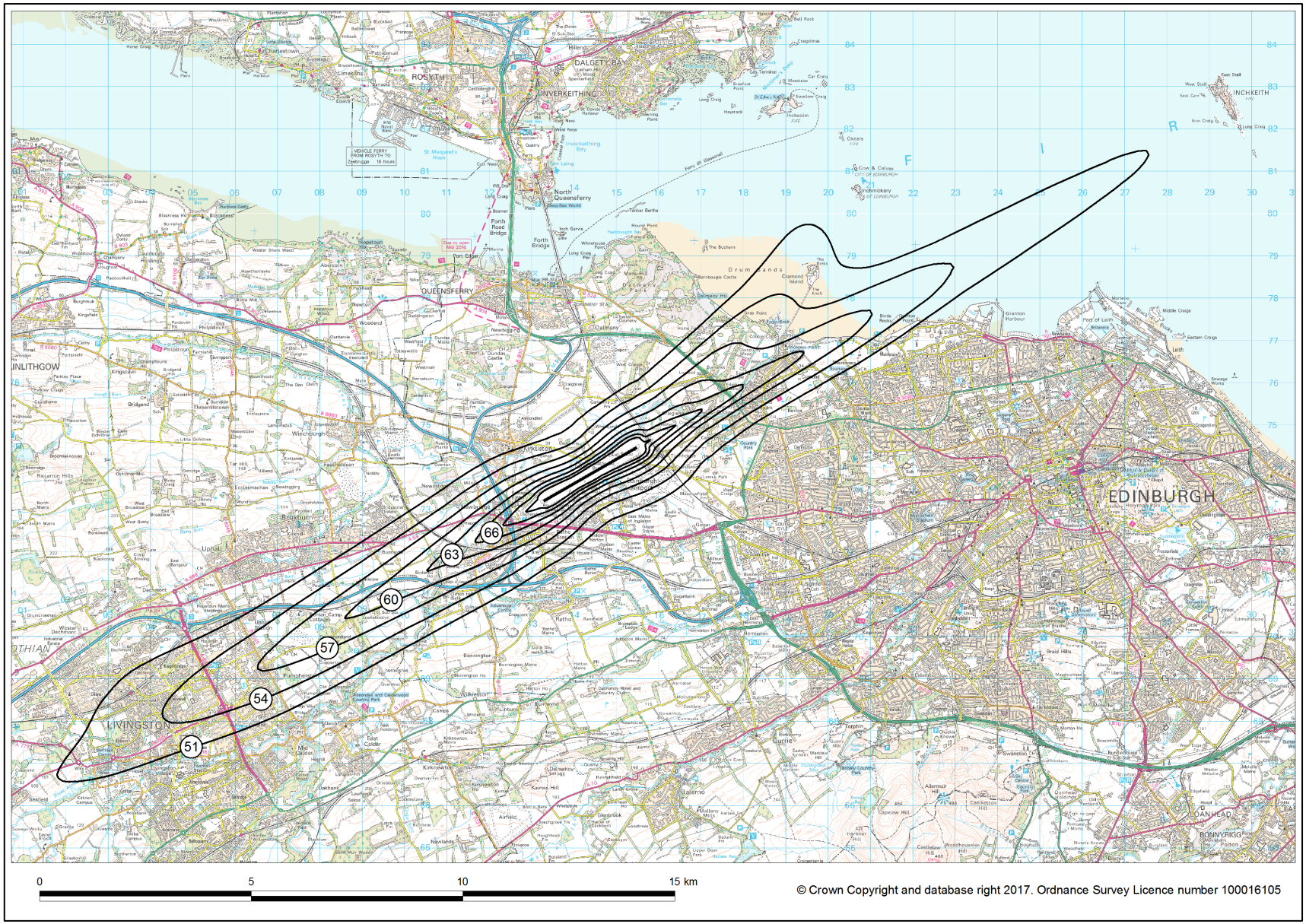

Figure 6 Edinburgh 2023 average summer day (70% W / 30% E) 51-72 dBA Leq noise contours – with proposed SIDs

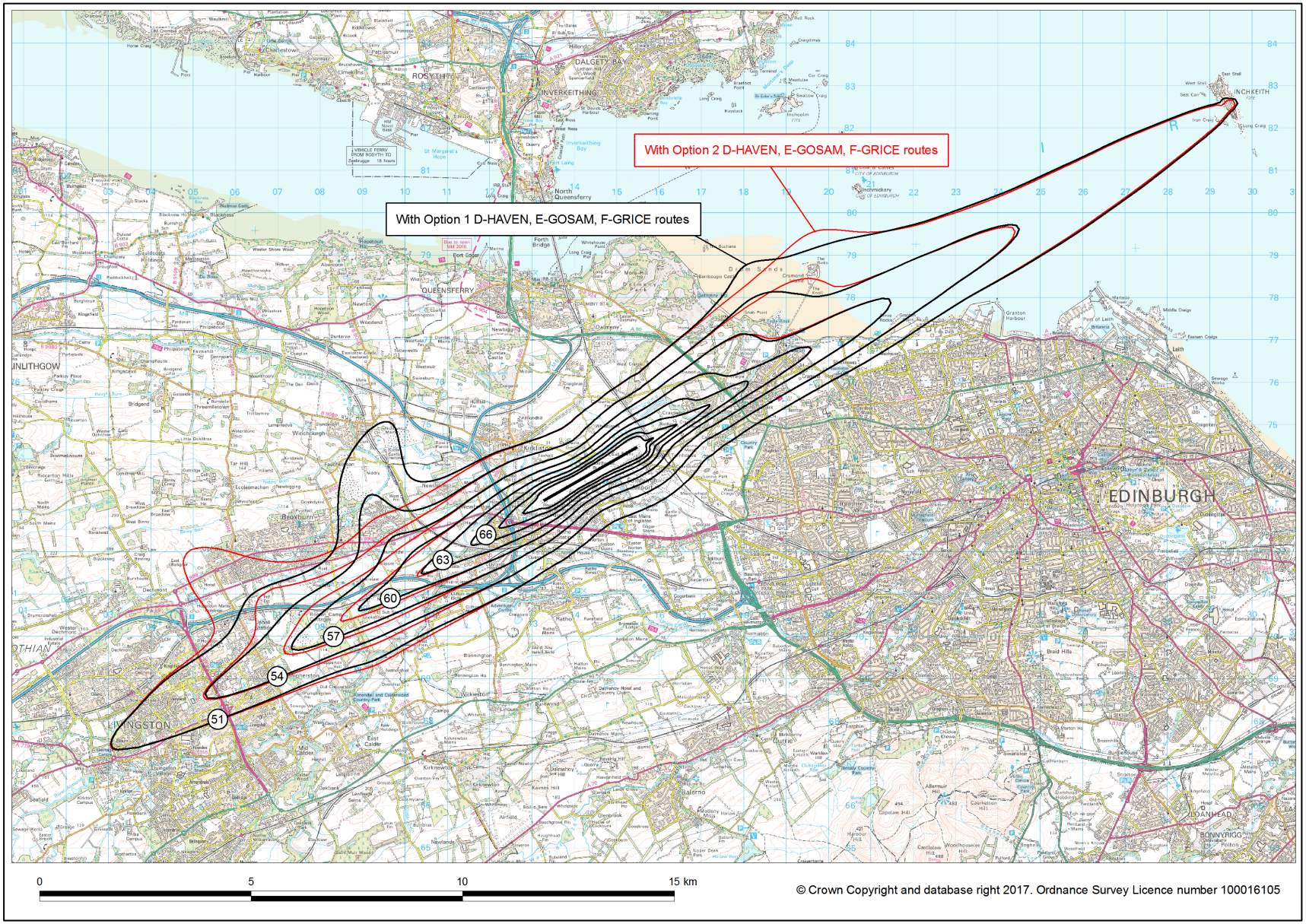

Figure 7 Boeing 737-800 SEL footprints for Runway 24 – existing SIDs

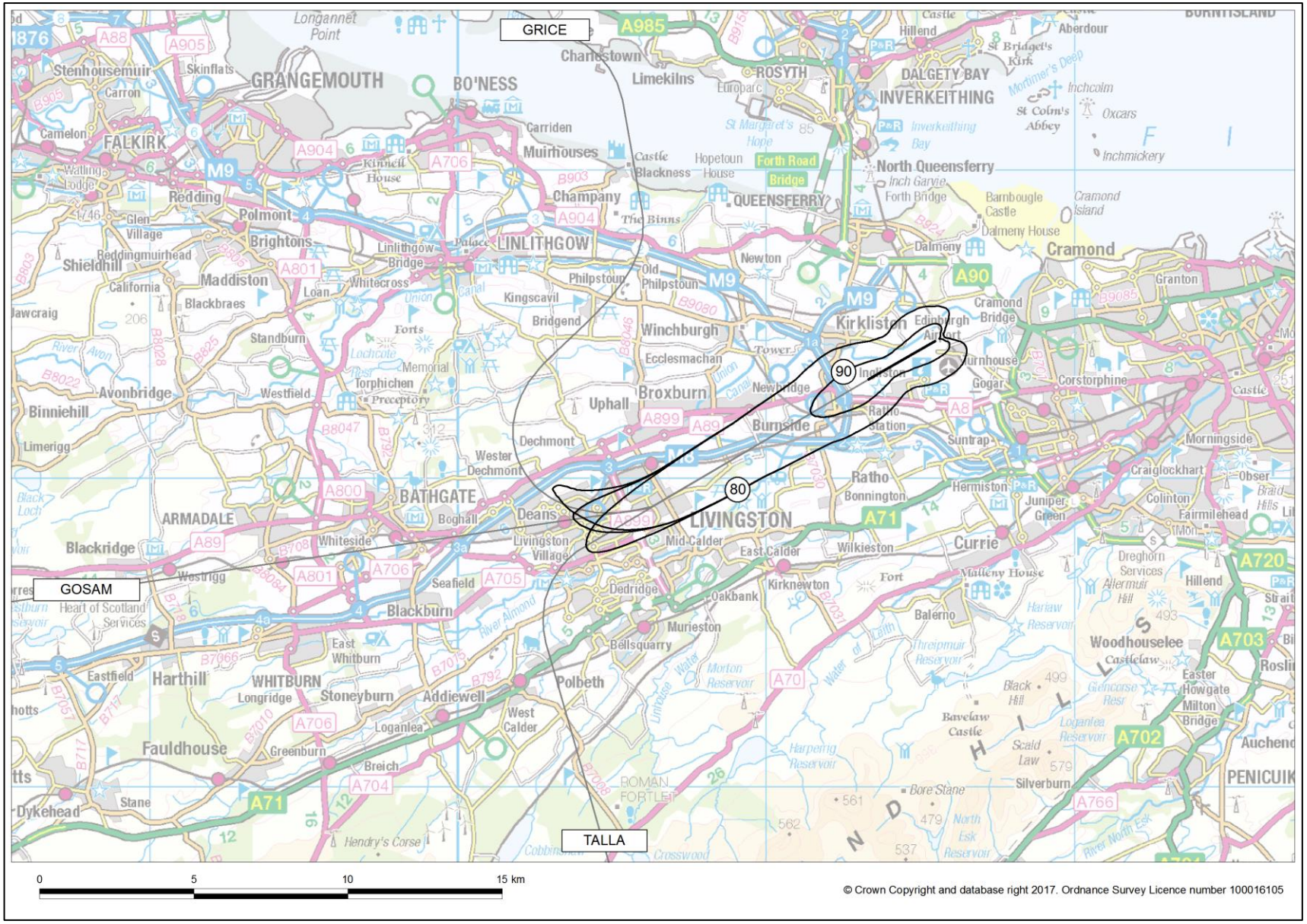

Figure 8 Boeing 737-800 SEL footprints for Runway 06 – existing SIDs

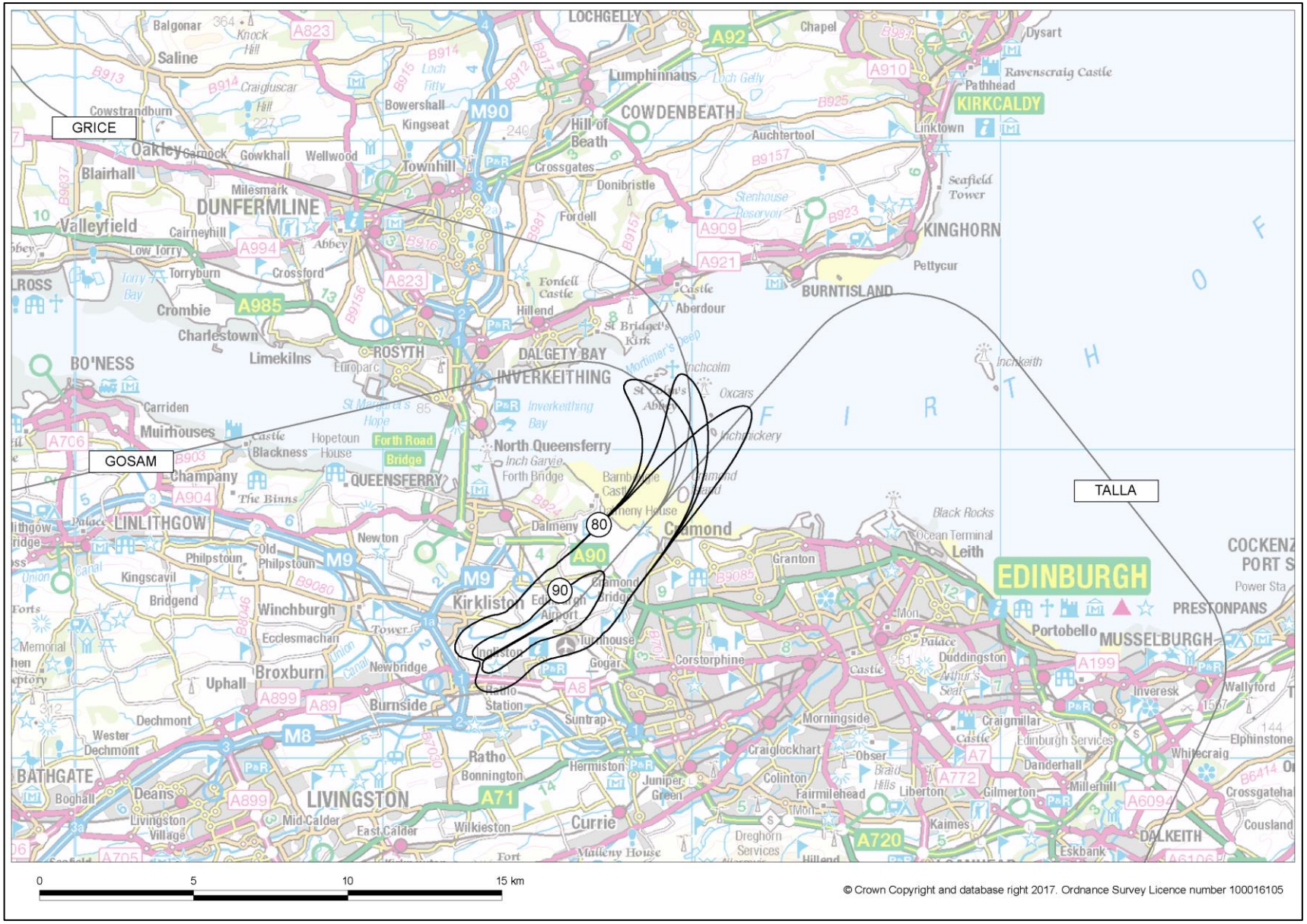

Figure 9 Boeing 737-800 SEL footprints for Runway 24 – proposed SIDs

Figure 10 Boeing 737-800 SEL footprints for Runway 06 – proposed SIDs

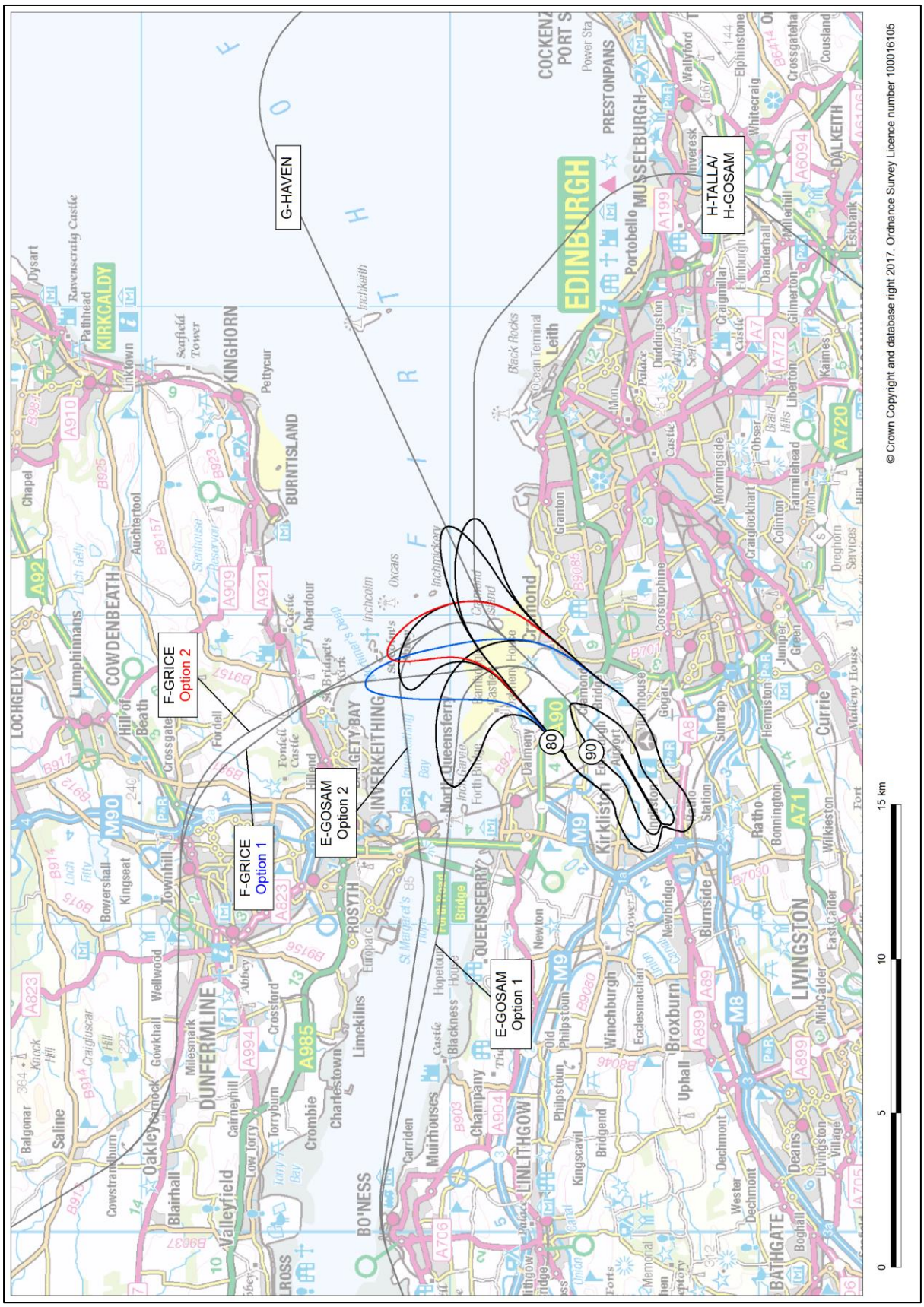

Figure 11 Airbus A330 SEL footprints for Runway 24 – existing SIDs

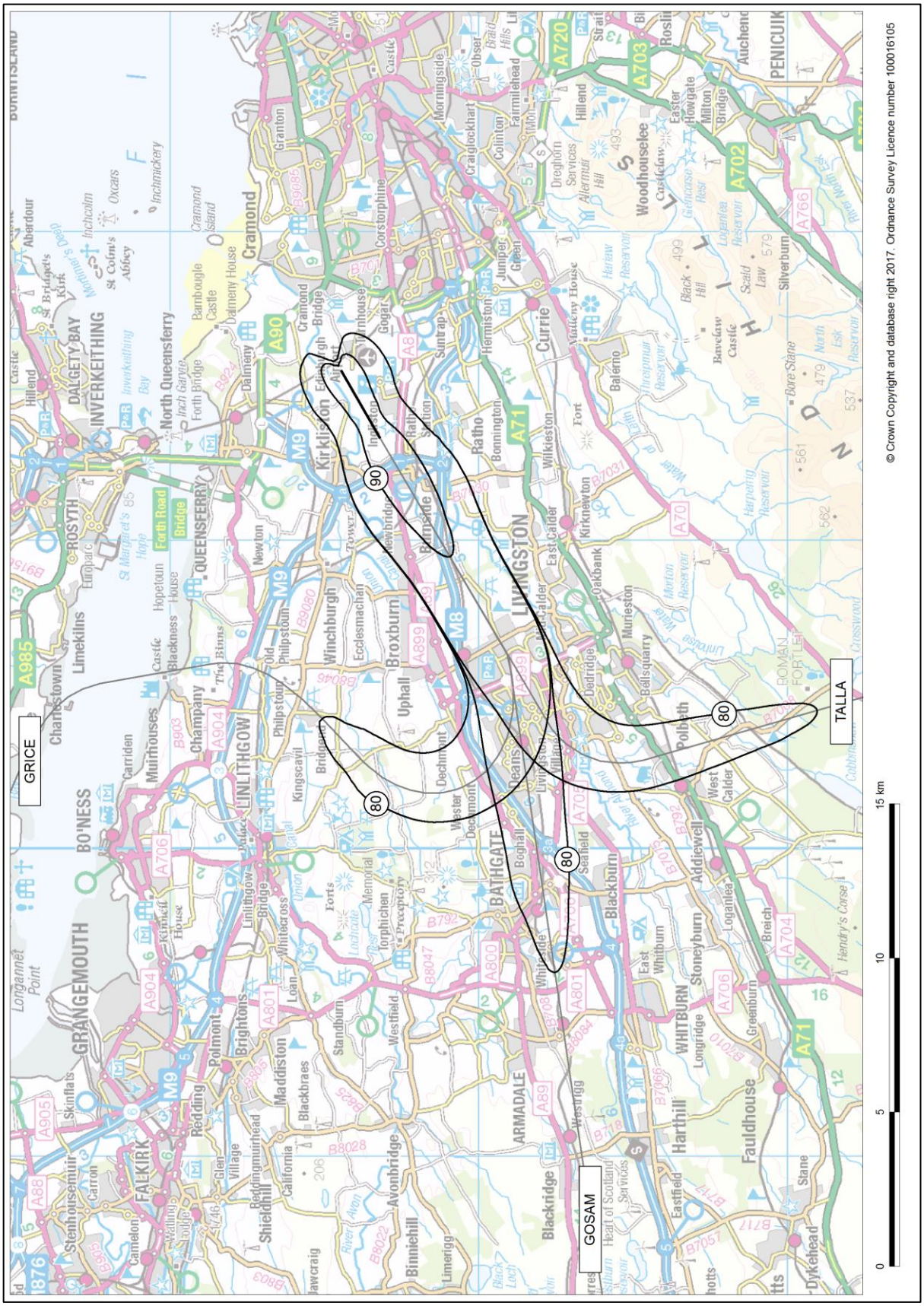

Figure 12 Airbus A330 SEL footprints for Runway 06 – existing SIDs

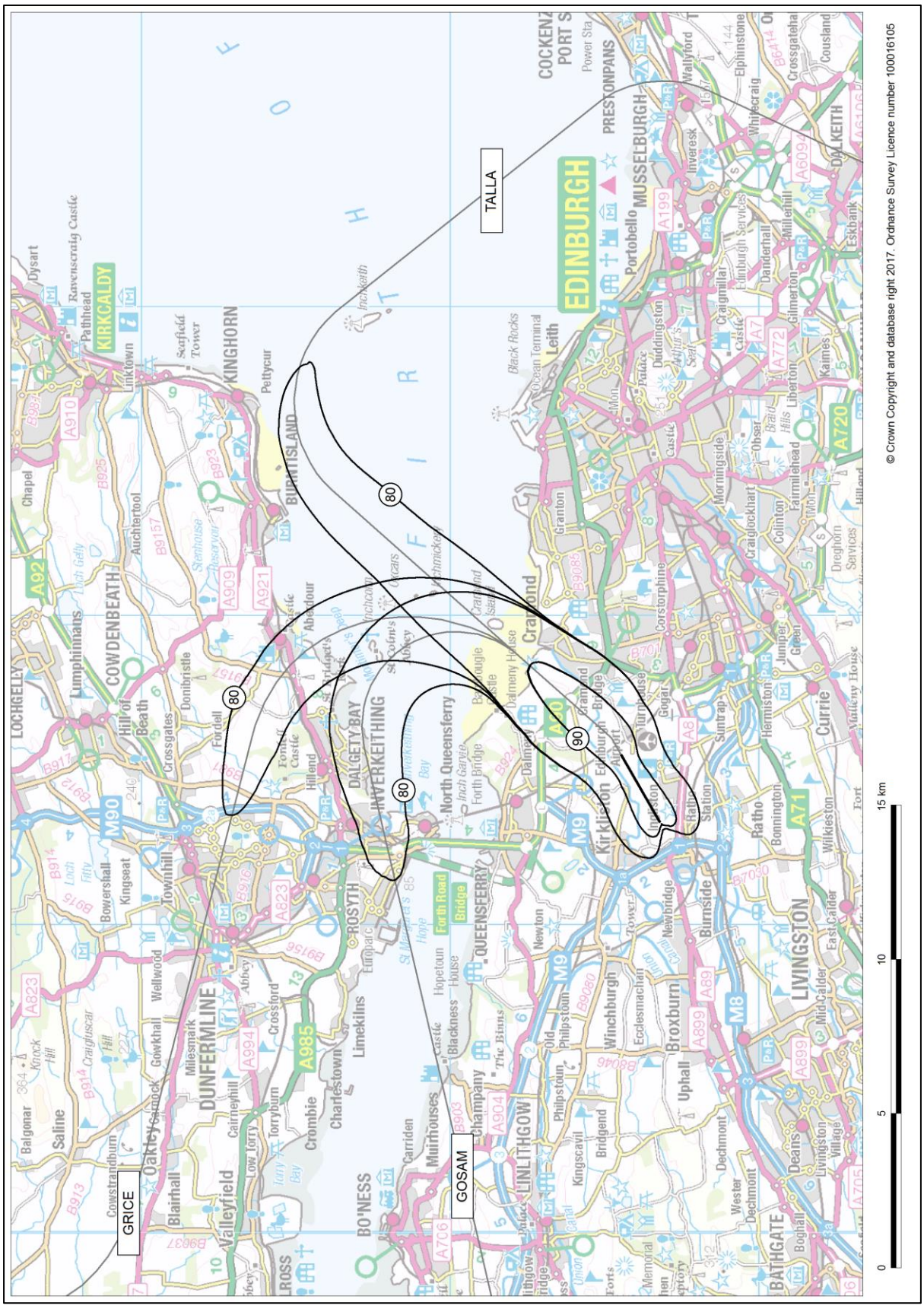

Figure 13 Airbus A330 SEL footprints for Runway 24 – proposed SIDs

Figure 14 Airbus A330 SEL footprints for Runway 06 – proposed SIDs

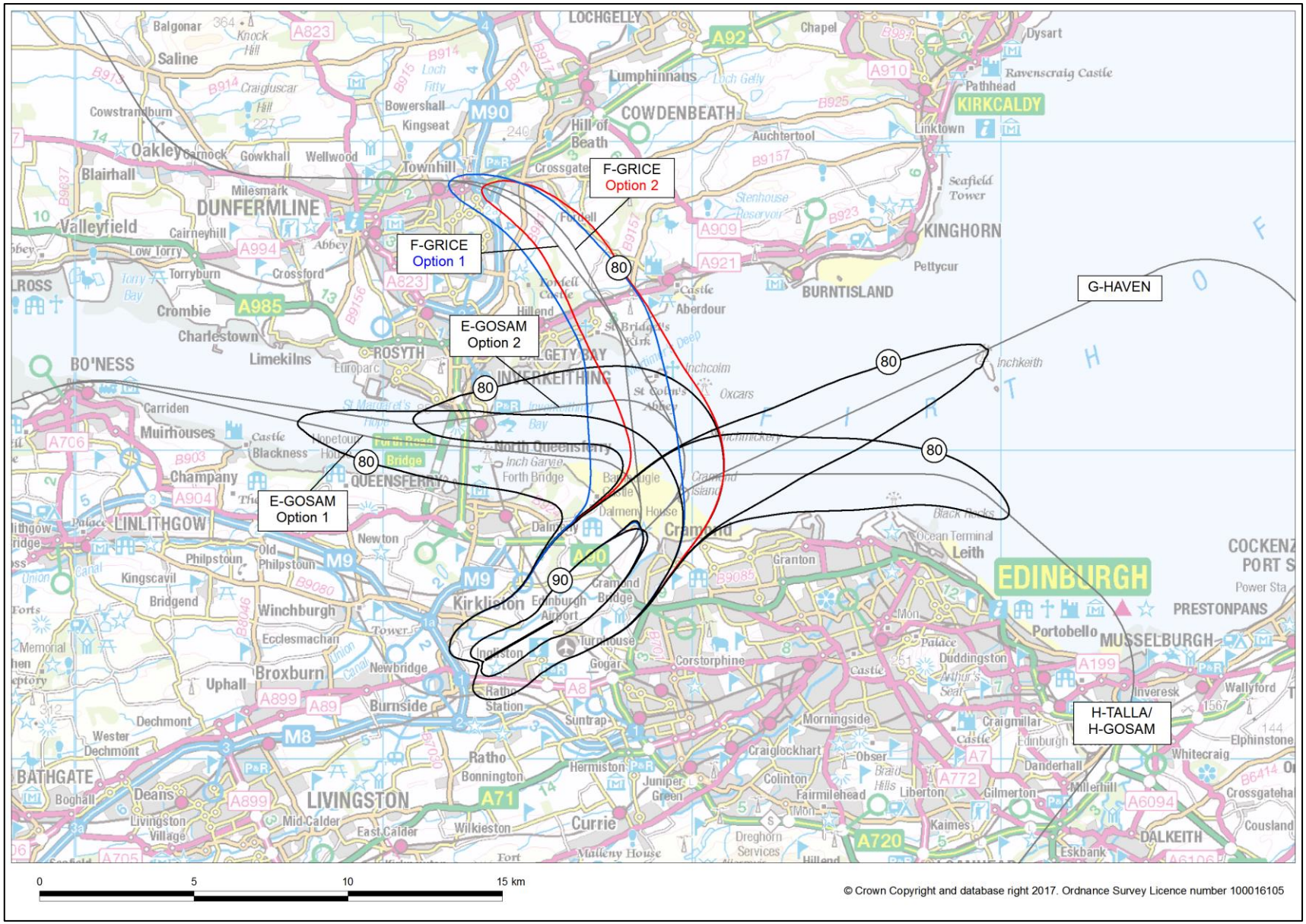

Figure 15 Large twin-turboprop SEL footprints for Runway 24 – proposed SIDs A-TALLA & C-GRICE

Figure 16 Boeing 737-800 Lmax footprints for Runway 24 – existing SIDs

Figure 17 Boeing 737-800 Lmax footprints for Runway 06 – existing SIDs

Figure 18 Boeing 737-800 Lmax footprints for Runway 24 – proposed SIDs

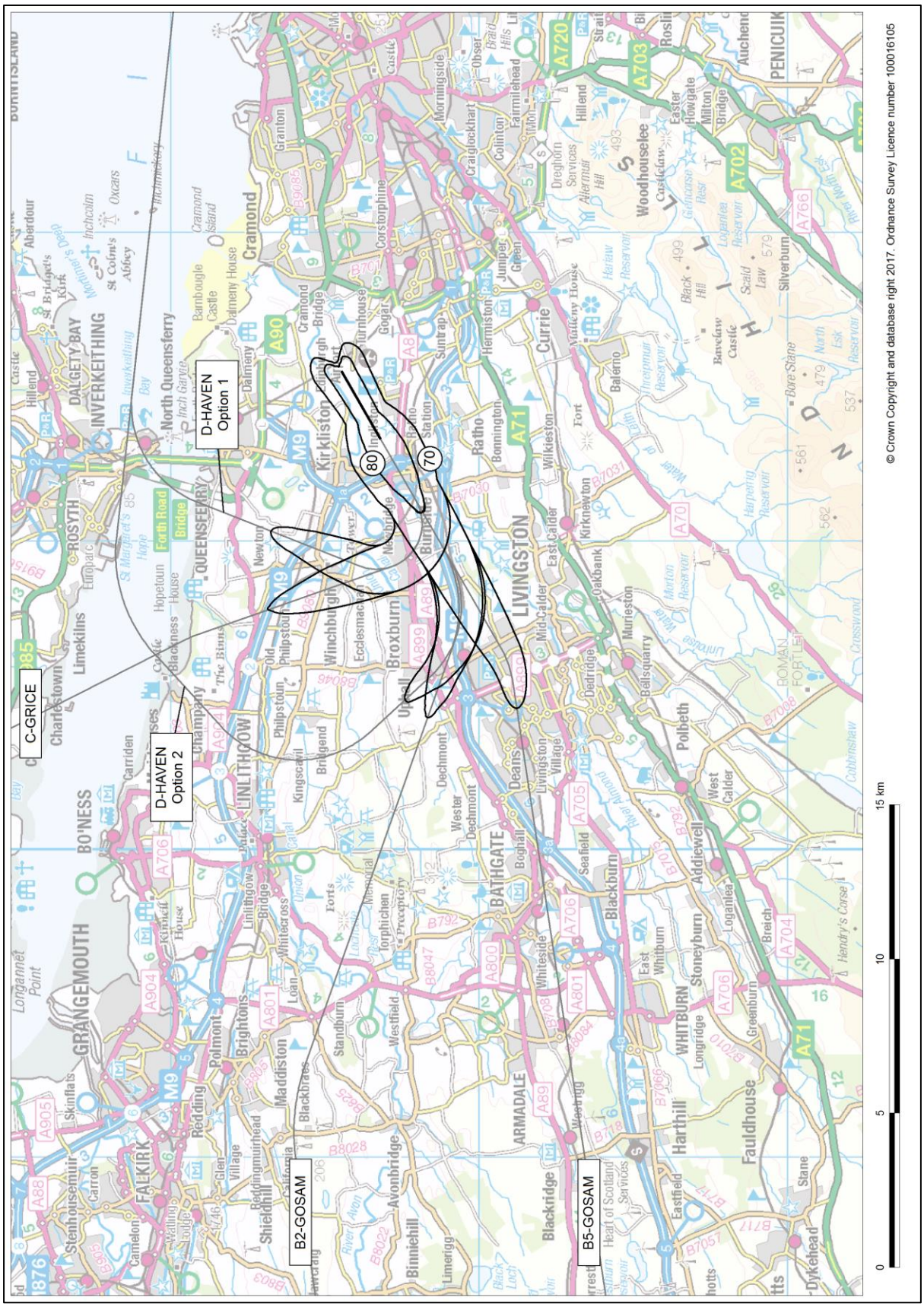

Figure 19 Boeing 737-800 Lmax footprints for Runway 06 – proposed SIDs

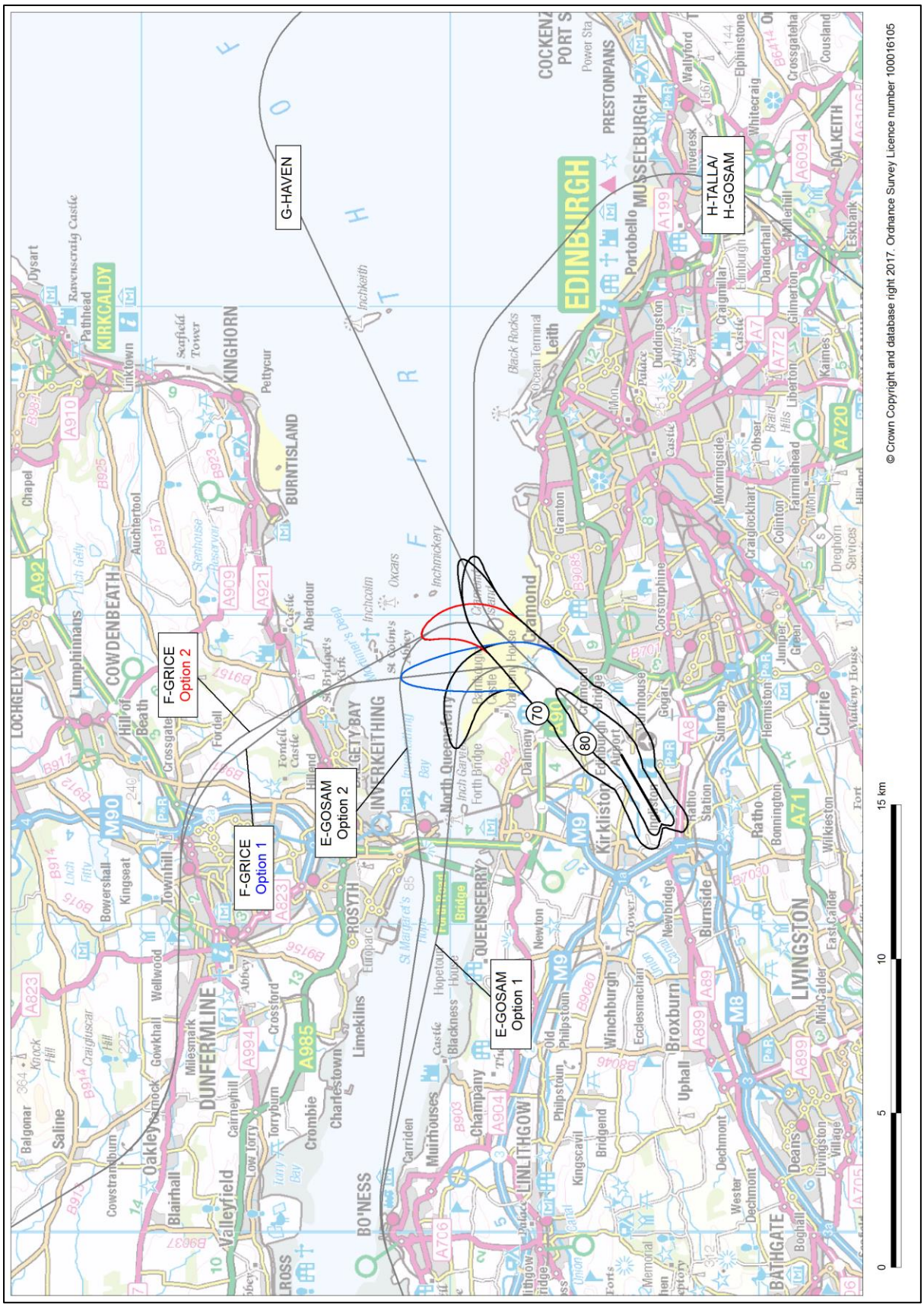

Figure 20 Airbus A330 Lmax footprints for Runway 24 – existing SIDs

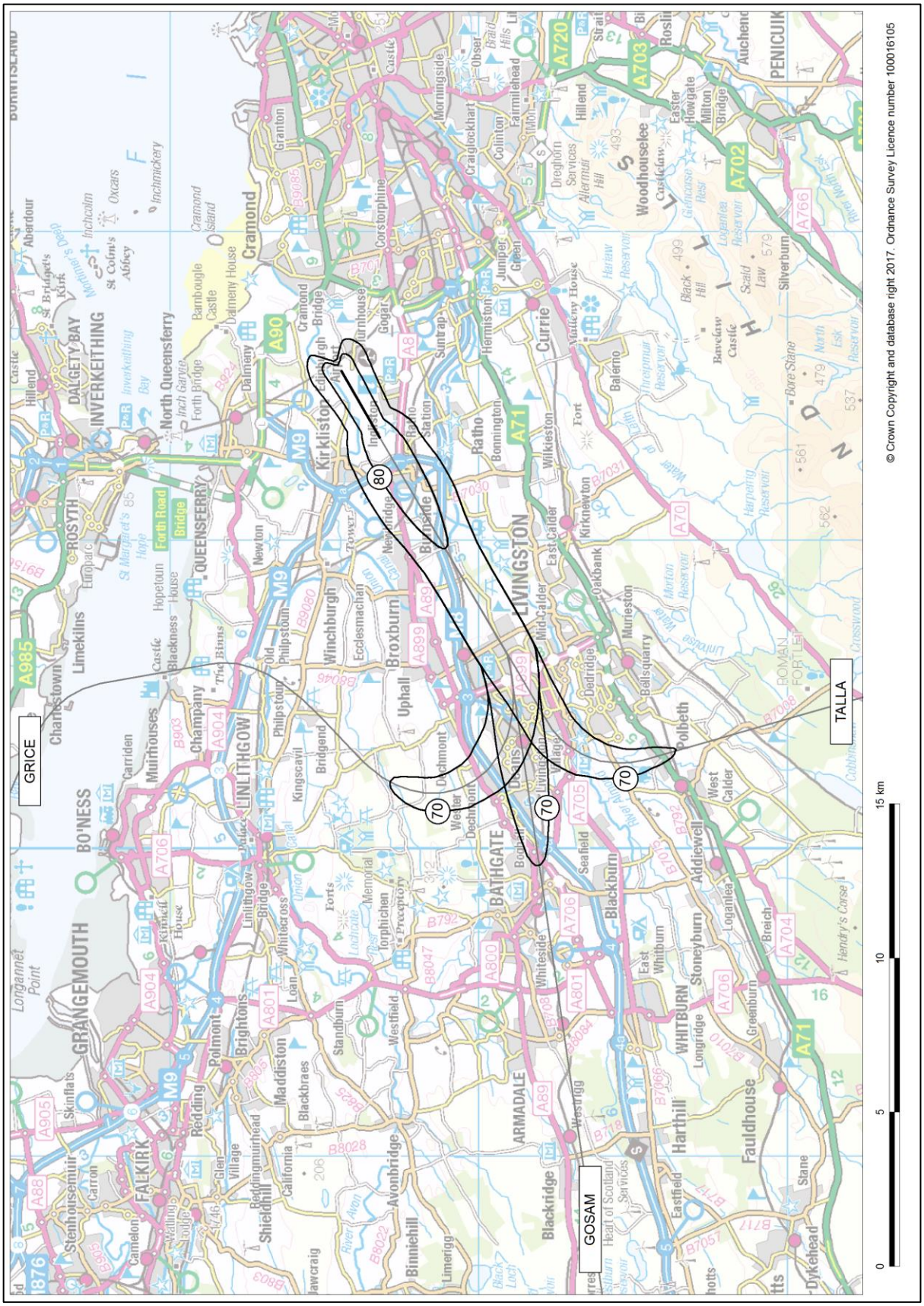

Figure 21 Airbus A330 Lmax footprints for Runway 06 – existing SIDs

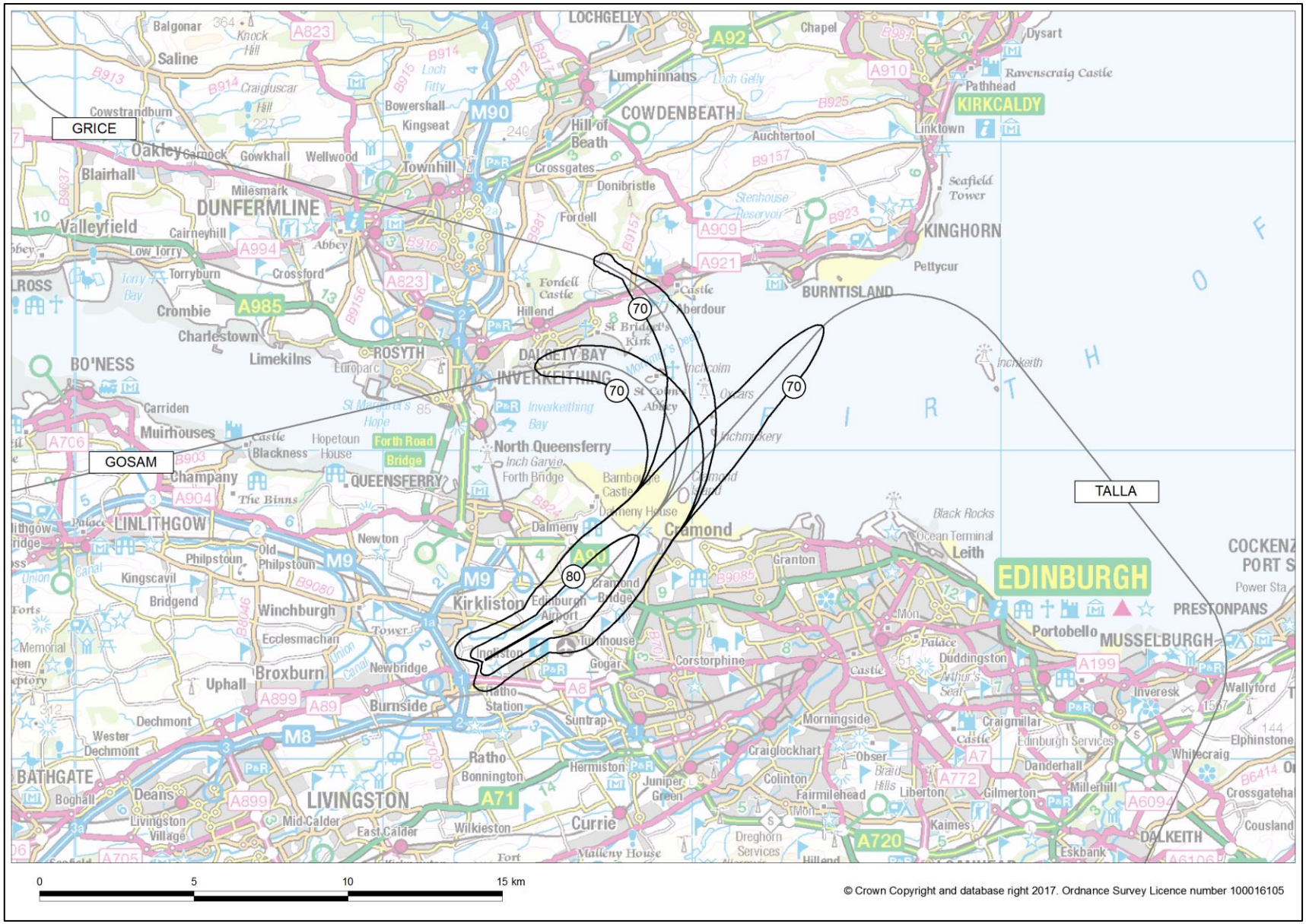

Figure 22 Airbus A330 Lmax footprints for Runway 24 – proposed SIDs

Figure 23 Airbus A330 Lmax footprints for Runway 06 – proposed SIDs

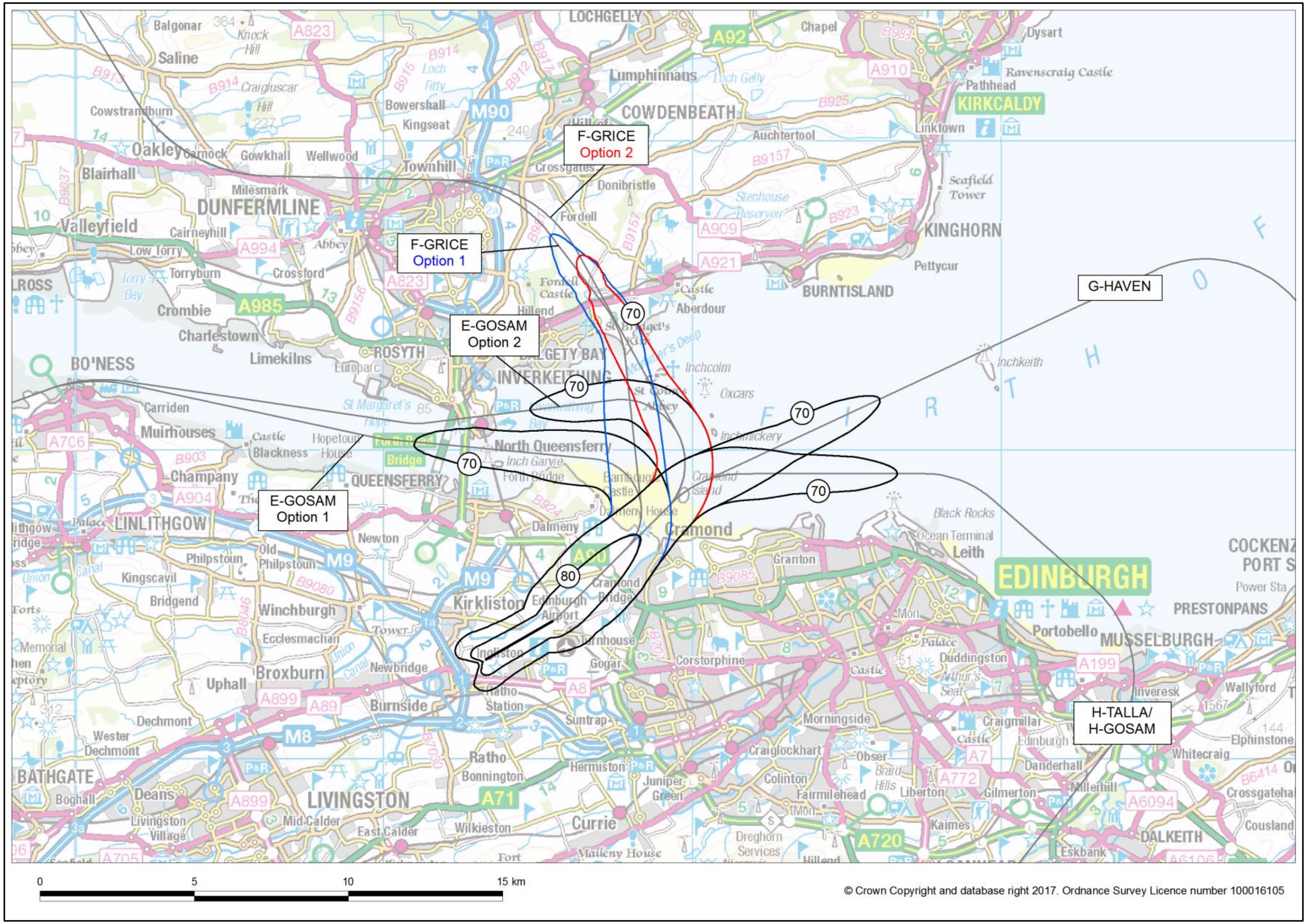

Figure 24 Large twin-turboprop Lmax footprints for Runway 24 – proposed SIDs A-TALLA & C-GRICE