Airspace Change Organising Group

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Scottish Terminal Control Area (ScTMA) Cluster - Cumulative Analysis Framework Part 2 (CAF2) Annexes

Issue 2.0 – June 2025

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Introduction

This document provides supporting information for the Cumulative Analysis Framework Part 2 (CAF2) report. The context for the information provided in these annexes is provided in the CAF2 report.

Annex A: Cluster Greenhouse Gas (and Fuel Burn) Modelling Methodology

Introduction

1. This note describes the methodology used for the assessment of Greenhouse Gas (CO_2e) impacts for the ScTMA cluster. The same method is also used for fuel burn calculations. This is a joint methodology in which NATS Enroute Limited (NERL) and Airport Sponsors each contribute different elements to metrics for overall CO_2e performance. The methodology was written and agreed in advance of the analysis being undertaken and so is written, and presented here, in the future tense, even though the analysis has now been undertaken.

Method Overview

2. The CAF2 method (Appendix 3, Masterplan Iteration 3 - ScTMA) recognises that when a whole system of routes is being changed, it is not possible to accurately distinguish between CO_2e performance impacts generated from changes above 7,000ft from those generated by changes below 7,000ft. CAF2 therefore puts forward a joint methodology (which is being followed here) and states that for the Airspace Modernisation Strategy changes, the Airports and NERL will use shared results for CO_2e in their separate ACP submissions. This means that CAF2 and the contributing ACPs will distinguish between the collective effects for flights into and out of different airports, but will not attempt to distinguish between how much of the collective impact is attributable to the NERL ACP (above 7,000ft) and how much is attributable to the local airport ACPs that it connects to (below 7,000ft).
3. As such the method for assessing both the collective CAF2, and airport specific CO_2e is a joint exercise consisting of NERL network analysis and airport analysis of their local changes.
4. The method will use NERL fast-time simulation modelling to establish the difference between the baseline and a single cluster wide design. The airport data is then factored in to show how their different airport system options affect the overall collective impact. This approach to CO_2e analysis for AMS clusters is described in the CAF2 methodology contained in Appendix 1 and 2 of Iteration 3 of the ScTMA Masterplan.
5. More detail is provided on each part of the analysis below, focussing on where the method has strengths and weaknesses with respect to the requirement to base analysis on “anticipated actual changes to aircraft behaviour” (CAP1616i para 6.4).

NERL Fast-Time Method

6. Fast time modelling is undertaken by NERL on:

   - The baseline without airspace change’ scenario and on a single cluster-wide ‘with airspace change’ option.
   - The cluster-wide option consists of the ’with airspace change’ network from the NERL ACP, and a single ‘with airspace change’ airport system option for each of the airports (who have a number of other ‘with airspace change’ options in their FOA which the method picks up at a later stage).

   NERL use the same fast time modelling method as they have for previous ACPs, which is to use flight planned routes as the basis for their analysis.
7. Modelling flight planned routes has the benefit of enabling a like-for-like comparison between the procedural designs. However, it is recognised that flight plan data will vary from day-to-day operations, and may not accurately capture anticipated actual change to aircraft behaviour in all phases of flight. The pros and cons of this approach with respect to each phase of flight are presented below.

Arrivals at the Holding Waypoint and below

8. For arrivals at the holding waypoint and below, the fast time modelling will initially fly aircraft along flight planned routes, but will also replicate the effects of tactical intervention by dynamically modelling holding and, where applicable, vectoring onto final approach in defined Radar Manoeuvring Areas (RMAs). This does not mean that the model can accurately replicate the actual ground tracks, as controller behaviour is variable depending on many factors and is therefore very difficult to predict and model.

9. However, for the purposes of CO_2e analysis, the actual track over the ground is not critical. This is because it is the extra flight time and resultant fuel burn of the holding and track extensions required for sequencing that are critical to the metric. Therefore, the results of the fast time modelling provide the best estimate of the CO_2e consequence of anticipated actual track changes, even though it cannot be used to accurately assess the precise geographic positioning of current or future flights.

Standard Instrument Departures (SIDs)

10. For SIDs the use of flight planned data for historical analysis can be problematic because aircraft are often tactically taken off the flight planned profile. In particular, this is where SIDs have extended level segments at their termination altitude, where in reality they often get tactical climb. For example, this may be where a SID has a procedural level-off to keep it beneath an arrival route/hold racetrack that often has no flights on it. In these cases, ATC regularly provide tactical climb above the SID termination altitude.

Use of Flight-Planned Vertical Profiles for Comparing to Baseline

11. The underestimation of tactical climb is also a potential factor when using flight planned data for analysis of future periods. However, when traffic levels increase, the opportunity for early climb is reduced.

12. Furthermore, the link between increasing traffic and reduction in early climb is not a linear relationship. This is because the ability to provide early climb is not just the consequence of other aircraft, it is also dependent on whether the controller workload allows them time to provide a tactical instruction. Workload increases disproportionately as traffic volumes increases towards capacity. Therefore as airspace reaches capacity the effect of one extra additional flight will have a disproportional impact on the ability to provide early climb.

13. This means that it is not legitimate to assume that vertical profiles from historic years will match those in the future where there is a forecast increase in traffic.

14. At present there is no established methodology for determining the how quickly vertical profiles for departures will tend towards the flight planned levels as traffic increases. This is an area that requires further investigation, however, the forecast increase in traffic for ScTMA pushes today's airspace towards capacity, and so it is not believed that current year profiles would be an accurate representation of anticipated aircraft behaviour.

15. In short, whilst use of flight plan data will underestimate the use of tactical climbs in the baseline (and to some extent the ACP options), it is not known what the extent the underestimation will be. Conversely, assuming vertical profiles including tactical interventions from historic periods will underrepresent the proportion of aircraft that do adhere to flight plan restrictions in a future environment where the number of flights has increased towards capacity.

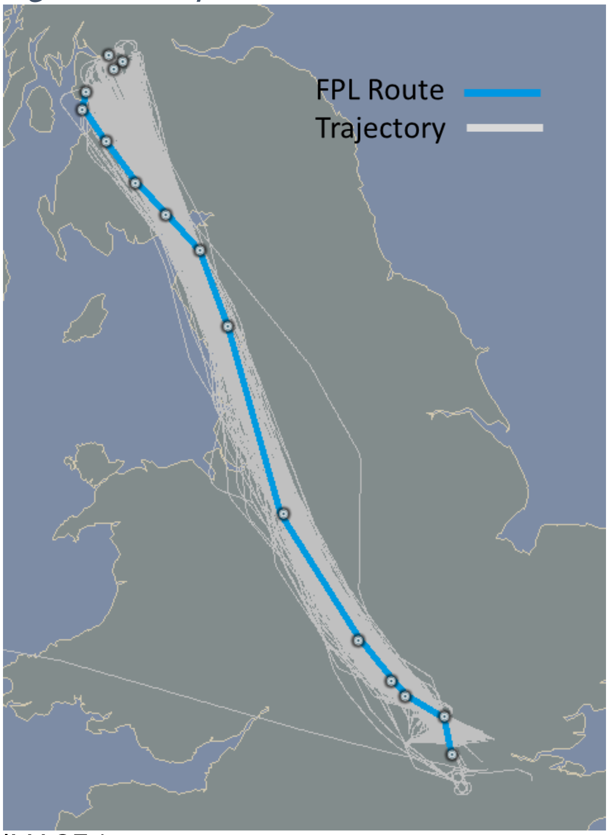
16. The flight plan data and historic data therefore identify the range of potential outcomes for future periods. However, where the actual vertical profiles will sit within this range is not known, as it is not possible to predict the prevalence of tactical climb for future periods where the traffic exceeds both current levels and previous highs. There is no alternative modelling approach/assumptions that can resolve this issue. Discussion on how results should be presented to ensure the effects of assumptions on analysis outcomes are known are discussed in paragraph 26-27.

Flights in the En-route Network

17. The use of flight planned data for the en-route phase is less of an issue with respect to vertical profiles, as there are generally no vertical restrictions (stops offs) in the network (after the end of the SIDs) for departing flights, and arrival profile restrictions on Standard Arrival Routes (STARs) are regularly adhered to and included in planned calculations for both baseline and 'do something' scenarios. However, flight planned data does not capture all the lateral variation in tracks. These may be shortcuts or track extensions.

18. Fast time analysis must use common start and end points so that the comparison between the baseline and the design is like-for-like. This means that route profiles are extended far into the network, which can be another UK airport, an FIR boundary point or even a point in neighbouring airspace. Figure 1 shows comparisons of flight plan track against actual tracks for a city pair. This demonstrates both track extension and shortcutting. However, over the length of the en-route segments (including ATS routes and STARs but not Instrument Approach Procedures and SIDs) this suggests that flight planned routes are a reasonable approximation for average actual tracks, given the length of track that gets modelled.

Figure 1: Comparison of Planned and Actual Trajectories in the En-Route Network



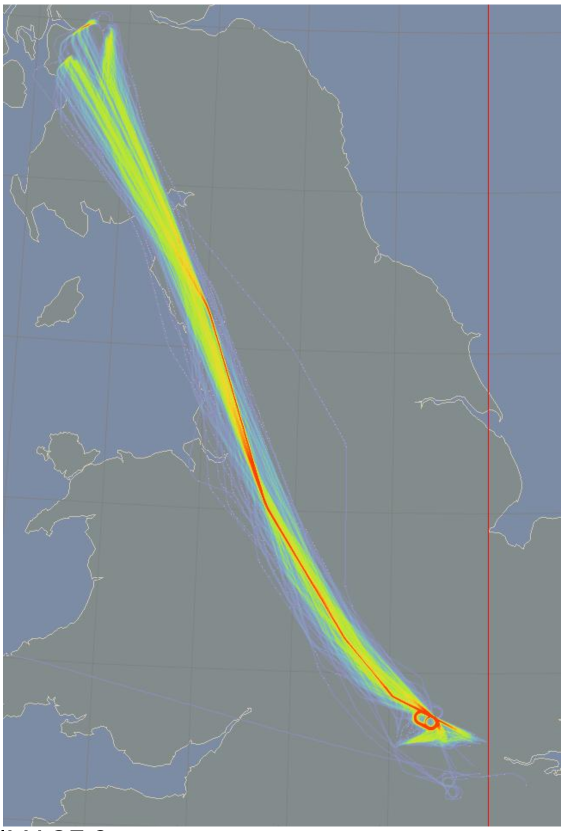


IMAGE 1 IMAGE 2

Image 1 shows all of the Glasgow to London Heathrow flights during May 2024. The blue line in Image 1 shows the flight planned route, grey lines demonstrate the variability in track performance shown. Image 2 showing the same flights in a heatmap format.

19. It should be noted that track extensions are generally expected to be less likely in a Performance Based Navigation (PBN) environment because, during busy periods, the PBN route design will be relied upon to provide separation. However, shortcutting will still occur during the less busy periods to provide more efficient tracks where possible. This benefit is not captured through use of flight plan data for predicting future PBN traffic pattens and as such will mean that future benefit will be underestimated in these instances.

20. In conclusion, it is proposed that flight planned data is a reasonable approximation for average actual tracks in the network, but it is recognised that there could still be a bias in the results, which in some areas may

lead to underestimation of benefits and other cases overestimation. Providing transparency around this uncertainty is discussed further in paragraph 26-27.

Local Profile Analysis of Airport System Options

21. Airports undertake analysis to identify how their low-level airport system options affect the profiles and track lengths of the routes and therefore their CO_2e performance. Airport system options are not expected to have a significant impact on the amount of airborne delay in the system, as this is primarily dictated by the network approach to delay management which is captured by the NERL modelling.
22. The airports will use the ground tracks that are used in the noise analysis for this local CO_2e assessment for both SIDs and low level arrivals. Fuel burn is then calculated using default vertical profiles[1].
23. The CO_2e analysis will use the noise track PBN procedure centrelines to capture anticipated changes to the average tracks for both arrivals and departures. Assessment of the dispersed tracks used in noise analysis is not deemed to add value as the tracks either side of the average would be expected to have similar fuel burn profiles for straight segments and those on the inside/outside of turns would tend to cancel one another out.
24. This local data will indicate how the airport system options relate to one another.

Overall CO_2e Performance for Each Airport

25. The fast-time results and the local airport analysis will be combined (as per the worked example in the CAF2 methodology) to provide the best estimate of CO_2e impact for all options, and for all traffic into and out of the airport at both low level and in the en-route phase.

Forecasting Performance for 10 Year Period

26. The above method will be used to generate an average CO_2e per flight for both 2027 and 2036, and for both the without airspace change and with airspace change options. Results for years in between 2027 and 2036 are generated by linear interpolation between the results for 2027and 2036

Models and Data

27. The NERL network analysis utilises AirTop, an industry leading fast time modelling tool coupled with a combination of BADA 4.2 and 3.13. Edinburgh Airport use BADA 3.16 and Glasgow Airport use BADA 3.15 in combination with AEDT version 3e.
28. The use of different models reflects the different focus of the analysis at each step, with AirTop being appropriate for modelling the dynamic effect of the design on flows and holding, while AEDT and BADA are industry accepted tools for analysing individual trajectories (the results of which can then be aggregated).
29. Use of different BADA datasets is assumed to have a negligible effect on results and no bearing on the conclusions drawn. This is because up-issues of the BADA dataset generally involve adding data (e.g. more aircraft types and/or more performance parameters) rather than changing the data from previous versions. Note that the Eurocontol have not granted access to airports for BADA4 on the basis that BADA3 variants remain valid and were sufficient for the type of analyses being undertaken.

[1] The modified profiles used for the noise modelling are derived only for noise modelling purposes (following CAP2091) and we are not aware of any methodology to validate noise-modified profiles for the purposes of engine performance/fuel burn calculations. Hence, the noise-modified profiles are not used in the calculation of CO2e. As the vertical profiles for the low-level airport analysis are not anticipated to change in the “with” and “without” airspace change scenarios, the use of default profiles is considered to be appropriate.

30. While these models and parameters differ, they are all individually robust enough for use in individual sponsor CAP1616 analyses. The CAF2 methodology recognises the validity of which states “It is assumed that the approach(es) agreed to meet CAP1616 will be sufficiently robust for use in the CAF.” [Appendix 2 Para 128]

Contextual Information

31. No modelling methodology is perfect, and so while the approach laid out above represents current best practice for estimating CO_2e effects of airspace change, it is not without shortcomings. Annex B of the CAF2 therefore provides further transparency around the use of flight planned vertical profiles. Annex B is provided to show the extent to which the use of flight planned vertical profiles may affect the overall CO_2e result. It also discusses how shortcutting and other vectoring patterns may or may not be expected to change in the future, and how this could have a bearing on the results presented.

Post Implementation Review (PIR)

32. The CAP 1616 Stage 7, Post Implementation Review (PIR) will look at actual traffic numbers flown post implementation and compares against forecast traffic data provided, so a comparison of traffic and fleet mix versus that forecast in earlier stages can be made.
33. PIR phase also provides an opportunity to compare actual performance for the year immediately prior to and post implementation. This will enable a more accurate calculation of the scale of the long term benefit in Green House Gas (GHG/CO_2e) emissions.
34. In addition, by comparing the delta between actual trajectory modelling and flight plan trajectory modelling immediately prior to and post implementation, the PIR will provide data to assess the accuracy of modelling assumptions used in the preparation of the ACP.

Summary

35. This approach is both proportionate and the best practice available at this time, using industry leading models and performance dataset. It is based on flight planned data for comparison to baseline, but uses the same low-level ground tracks as used in noise modelling for comparing local options, and uses industry leading fast-time analysis to capture delay. The resultant calculations are described as an ‘enabled benefit’ (i.e. one based on flight planned routes) compared to the baseline.

Annex B: Supplementary Methodology/Contextual Information for Scottish Airspace Modernisation CO_2e Calculation

Introduction

36. The methodology presented in Annex A highlights the need for contextual information to aid interpretation of the CO_2e (and fuel burn) results. This annex presents that contextualisation and should be read in conjunction with Annex A.

Background

37. This Annex presents details of on the technical methodology used to model future enabled CO_2e benefits brought by the proposals. An enabled CO_2e benefit is a measure designed to correlate with the fuel saving resulting from more efficient routes within the new proposals.

38. To provide fuel and CO_2e analysis, modelling is used to simulate the design with the goal of understanding a proposal's performance verses the 'without airspace change' baseline. This is standard practice in all airspace change proposals, and an important step to ensure alignment is made to the CAA's Airspace Modernisation Strategy.

39. Providing background information to this analysis helps to highlight that aircraft profiles modelled many years ahead of implementation may differ from those eventually flown in reality. There are always variables such as weather, world events, military activity and more, which cannot be predicted. To aid transparency, this annex has been produced to demonstrate that the methodology used provides a good indication of the enabled benefit of the proposed change. The actual impact can only be calculated following implementation of the change through a direct comparison between the baseline trajectory data and actual trajectory data following the change. This work will be undertaken as part of the Stage 7 Post-Implementation Review.

Modelling lateral profiles for CO_2e

40. Both arriving and departing aircraft can be vectored laterally. This involves air traffic control giving instructions that take aircraft off their routes to instead fly a bespoke trajectory given the traffic scenario and airspace limitations at that time.

41. Vectoring is subject to a myriad of factors including interactions with other aircraft, ATC workload, military activity and weather which by their nature cannot be foreseen with a degree of certainty. It is not possible to predict with accuracy how these factors will affect vectoring for an individual aircraft or how the factors will change over time. This means that large scale airspace change proposals that need detailed CO_2e modelling have to rely on modelling the planned lateral aircraft tracks.

42. While it is recognised that modelling the planned tracks may vary from those seen in reality, the industry standard modelling process of using planned tracks provides a good indication of the performance of a proposal.

43. Furthermore, when a whole flight is modelled, the difference between flight planned routes and actual routes flown can have a tendency to average out - as illustrated earlier in CAF2 Annex A. Therefore, when the whole end-to-end flight plan route is modelled, with the addition of holding analysis, the use of planned tracks provides a reliable indication of whether a proposed change will positively or negatively impact the CO_2e greenhouse gas emissions for a specific flight or flights.

Modelling vertical profiles for CO_2e

44. Similarly, for the vertical element of a flight, no two flights are the same, climb and descent rates are based on engine type, aircraft weight, wind, temperature etc.

45. Arrival profiles are generally more consistent than departure profiles as an economic descent rate tends to be similar between all aircraft, and descent restrictions on STARs tend to be consistently applied by air traffic control (ATC).

46. However, for departures, level off restrictions that exist to provide separation against a conflicting route may not need to be adhered to, if there is no traffic on the conflicting route at the time In this situation aircraft may be climbed by ATC above the SID restrictions.

47. How many aircraft will be climbed above the SID profile in the future or how many will level off due to conflicting aircraft is not possible to predict with accuracy. The modelling therefore assumes that level off restrictions are present in both with and without change scenarios.

48. It should be noted that there are some trends that are likely in a more systemised environment in future. With some SIDs climbing to higher levels it is expected that:

- it is more likely that aircraft will fly the vertical restrictions on a SID and
- the modelled CO_2e difference between an aircraft levelling off on the SID and not levelling off will be less (when comparing the vertical elements in isolation).

49. The following examples show the CO_2e generated by a single flight on common route. These show how the modelling of a restricted profile (as used in the CO2e analysis) can vary the difference between existing and proposed airspace when compared to the same flight modelled with an unrestricted profile. This comparison is provided for context. All the profiles for this comparison have been modelled using BADA at a nominal weight in nil wind (Figures showing the analysed profiles are shown at the end of this Annex).

Table 1: Example 1 - Airbus A320 Glasgow to Palma

Runway 05 cruise level of FL350, portion of flight to CALDA (N of Manchester)

Scenario	Restricted (as modelled)	Unrestricted
Existing Airspace	6.08T	5.73T
Proposed Airspace	5.62T	5.52T
Difference	0.46T	0.21T

50. Based on the table above, the variance of Restricted vs Unrestricted benefits, in this example, is between 0.46T and 0.21T.

Table 2: Example 2 - Airbus A380 Glasgow to PETIL

Runway 23 Cruise Level FL370, Portion of flight over North Sea to UK boundary at PETIL.

Scenario	Restricted (as modelled)	Unrestricted
Existing Airspace	49.05T	48.52T
Proposed Airspace	47.98T	47.02T
Difference	1.07T	1.50T

51. Based on the table above, the variance of Restricted vs Unrestricted benefits, in this example, is between 1.07T and 1.50T.

Table 3: Example 3 - Boeing 737-900 from Edinburgh to Amsterdam

Runway 06 Cruise Level of FL330, portion of flight over North Sea

Scenario	Restricted (as modelled)	Unrestricted
Existing Airspace	9.89T	9.40T
Proposed Airspace	9.18T	9.08T
Difference	0.71T	0.32T

52. Based on the table above, the variance of Restricted vs Unrestricted benefits, in this example, is between 0.71T and 0.32T.

Table 4: Example 4 - Boeing 737-800 from Edinburgh to Belfast

Runway 24 Cruise Level of FL200

Scenario	Restricted (as modelled)	Unrestricted
Existing Airspace	4.12T	3.93T
Proposed Airspace	4.03T	3.98T
Difference	0.09T	-0.05T

53. Based on the table above, the variance of Restricted vs Unrestricted benefits, in this example, is between 0.09T and –0.05T.

54. These examples show how, for both the existing departures and the proposed departures, unrestricted climb profiles would generate less CO_2e than the restricted vertical profiles that are modelled.

55. In Examples 1, 2 and 3 the proposed SIDs also facilitate a shorter flight plan track mileage and so in both the restricted and unrestricted scenarios there is a CO_2e saving regardless of vertical considerations.

56. However, in Example 4 the planned track mileage is further in the proposed option compared to the baseline due to the ground track of the proposed SID and the associated network changes. Therefore, flying the existing SID with no vertical restrictions would, when modelled, generate less CO_2e than flying the proposed SID with no vertical restrictions.

Summary

57. Any enabled benefits claimed for a proposed new design is inherently a prediction for how planes will fly post deployment, several years from the point of modelling.

58. The benefits attributed to the cluster are calculated based on route data provided by Eurocontrol using the NEST tool which is the European standard. The efficiency of each aircraft is then analysed using BADA information through AirTOP, an industry leading fast time modelling tool.

59. Assuming an equal spread of aircraft types between all appropriate departure routes would mean overall CO_2e and overall track mileage would always be directly correlated if vertical restrictions are removed.

60. With this assumption in mind, it is acknowledged that when future traffic forecasts are considered, there may be a reduced benefit for both airports in the Scottish Airspace Modernisation cluster if vertical restrictions are not modelled. This is more likely to have a greater impact on Edinburgh Airport, based on the forecast track mileage difference. Furthermore, it should be noted that the benefits stated may even increase in some cases (as illustrated in the above examples).

61. However, it is expected that the impact of track mileage differential would be minimised by the track savings enabled by proposed access, particularly from Edinburgh Airport, to the highly beneficial Firth of Forth routes for larger (and therefore greater CO_2e generating) aircraft.

62. We therefore expect the real-life outcomes to be somewhere between a flight plan-based model that is the basis of the results reported in the FOA, and an optimal fuel-efficient ‘unrestricted’ profile scenarios as per the example presented above. However, as it is not possible to accurately forecast this outcome, the procedural departure profiles are used as an approximation of benefit until real life track data, including both lateral and vertical profiles, can be used to corroborate findings through the Stage 7 Post Implementation Review process.

63. In all cases it is important not to consider one factor in isolation.

64. To conclude, it is acknowledged that based on the methodology described above, there is a possible difference between the enabled benefits reported and what would eventually be realised post deployment. However, regardless of which methodology is used, it is anticipated that the proposed changes will enable a cluster wide CO_2e benefit on average per flight.

Figure 2: Example 1 Glasgow to Palma Baseline Restricted NORBO1J SID

Track Length: 173.2 NM

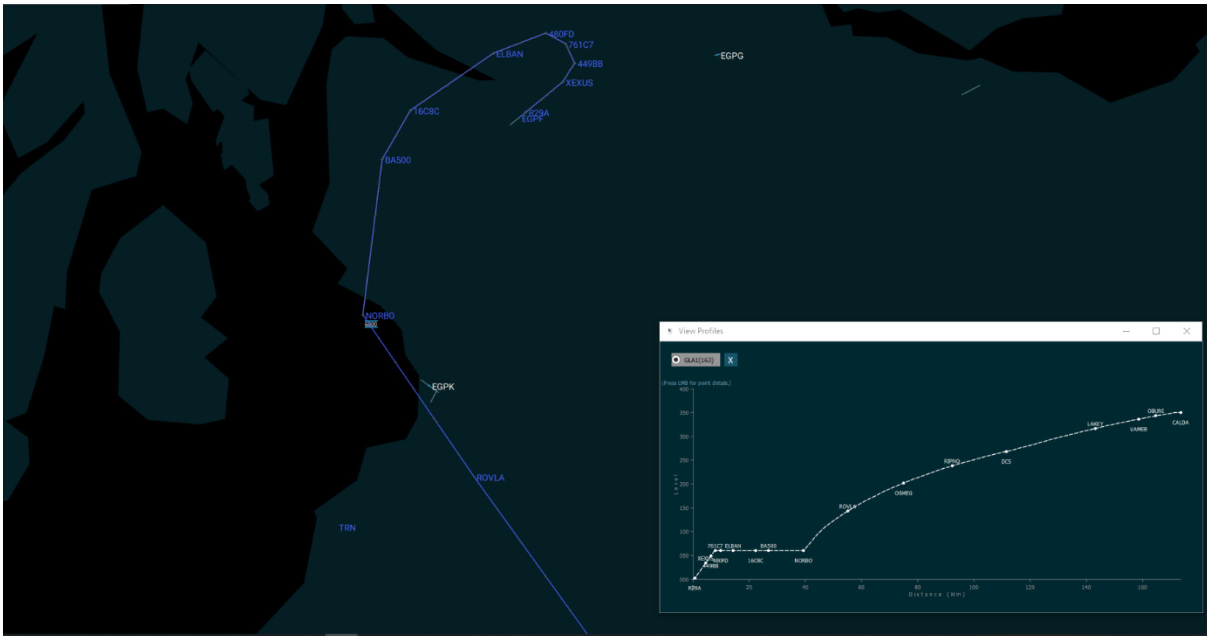


Figure 3: Example 1 Glasgow to Palma Baseline Unrestricted NORBO1J SID

Track Length: 173.2 NM

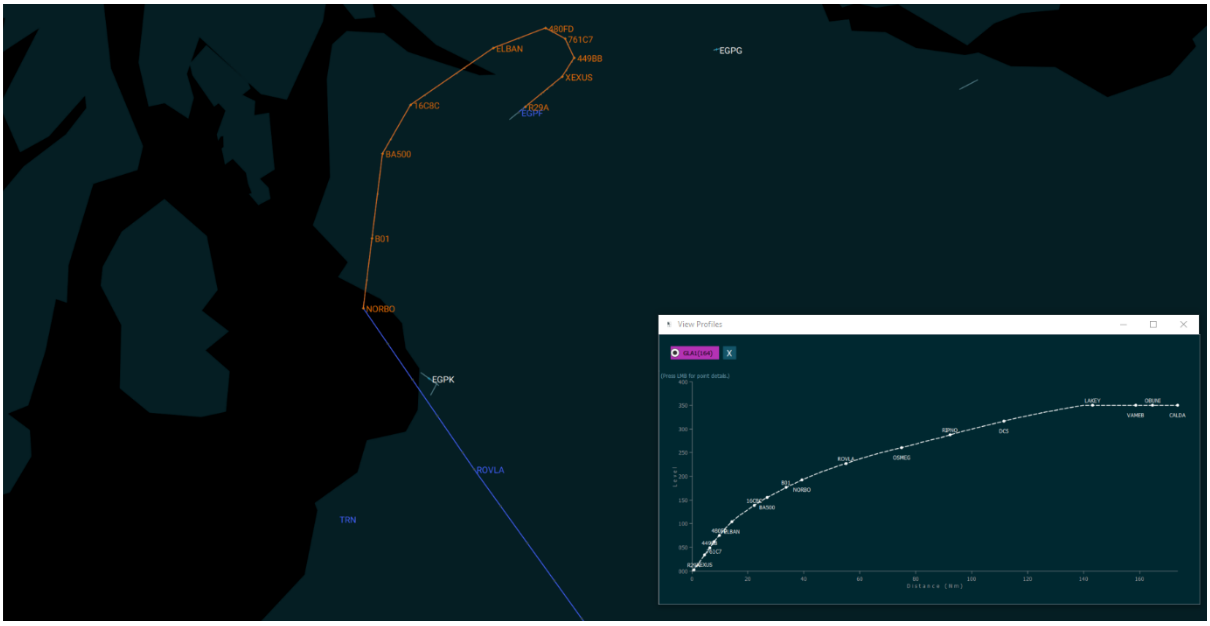


Figure 4: Example 1 Glasgow to Palma Proposal Restricted BEEFY1Y

Track Length: 157.38 NM

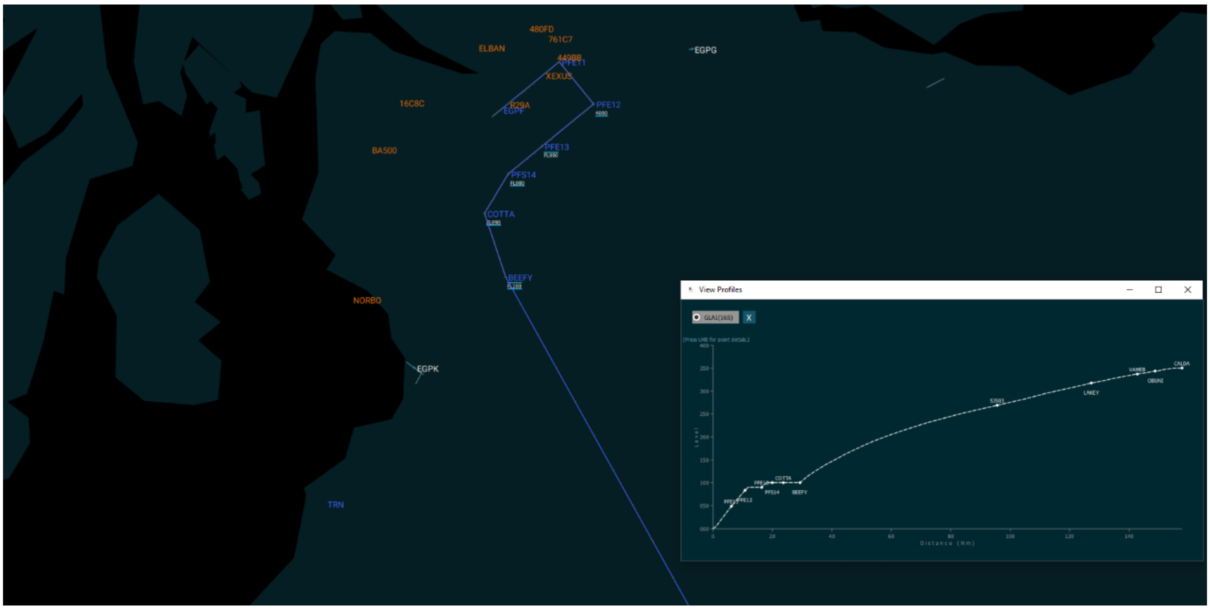


Figure 5: Example 1 Glasgow to Palma Proposal Unrestricted BEEFY 1Y

Track Length: 157.38 NM

Figure 6: Example 2 Glasgow to Dubai Baseline Restricted NORBO 1H

Track Length: 354.74 NM

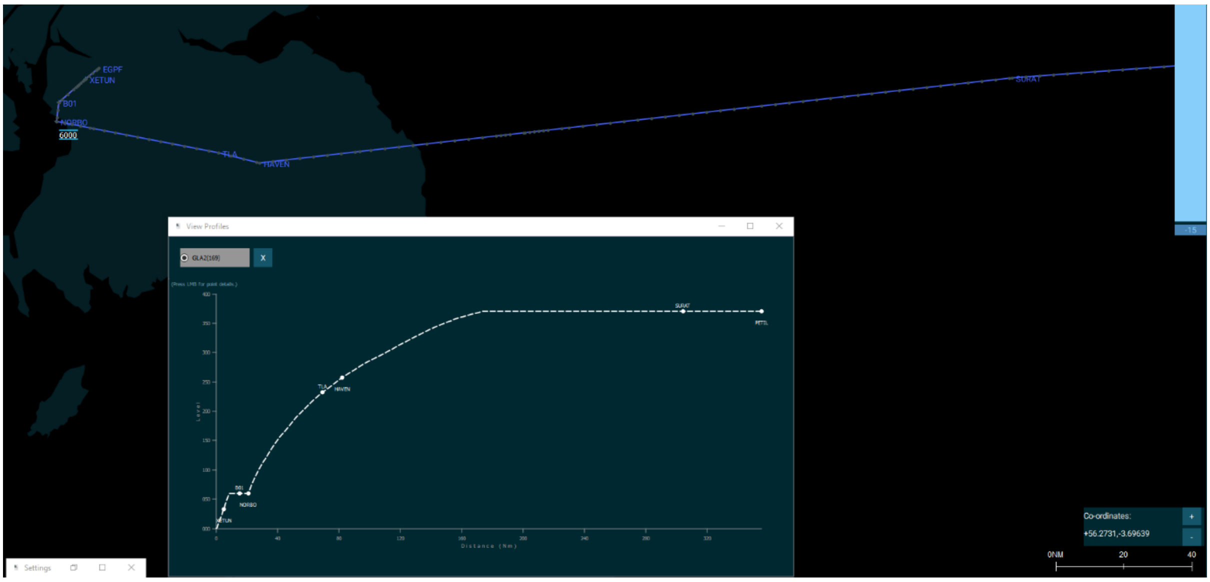


Figure 7: Example 2 Glasgow to Dubai Baseline Unrestricted NORBO 1H

Track Length: 354.74 NM

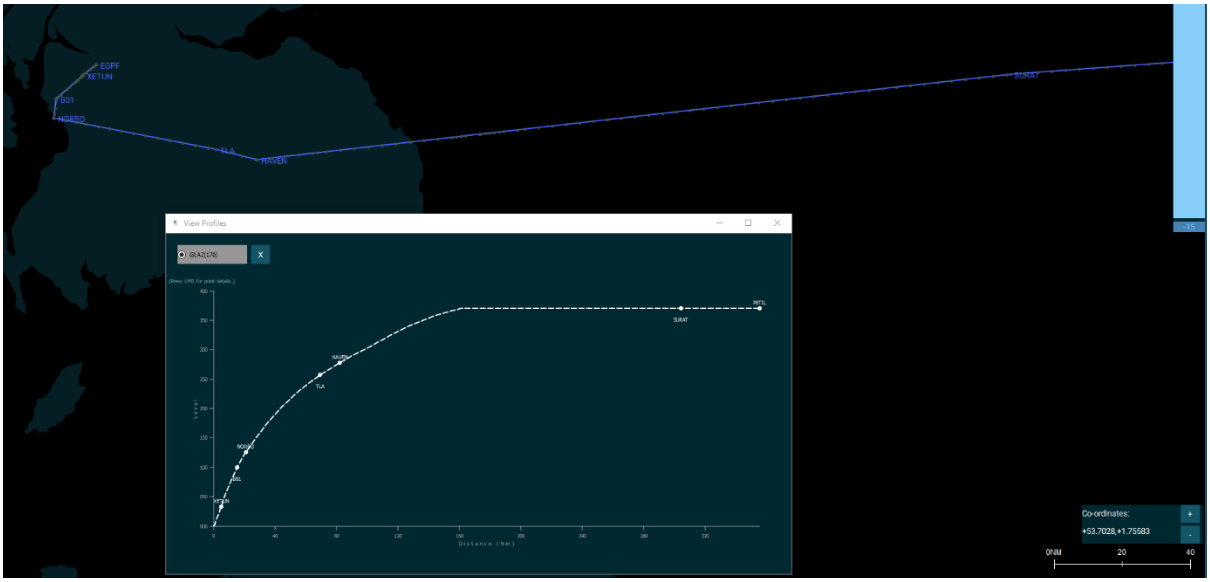


Figure 8: Example 2 - Glasgow to Dubai Proposal Restricted MOODI1W
Track Length: 337.79 NM

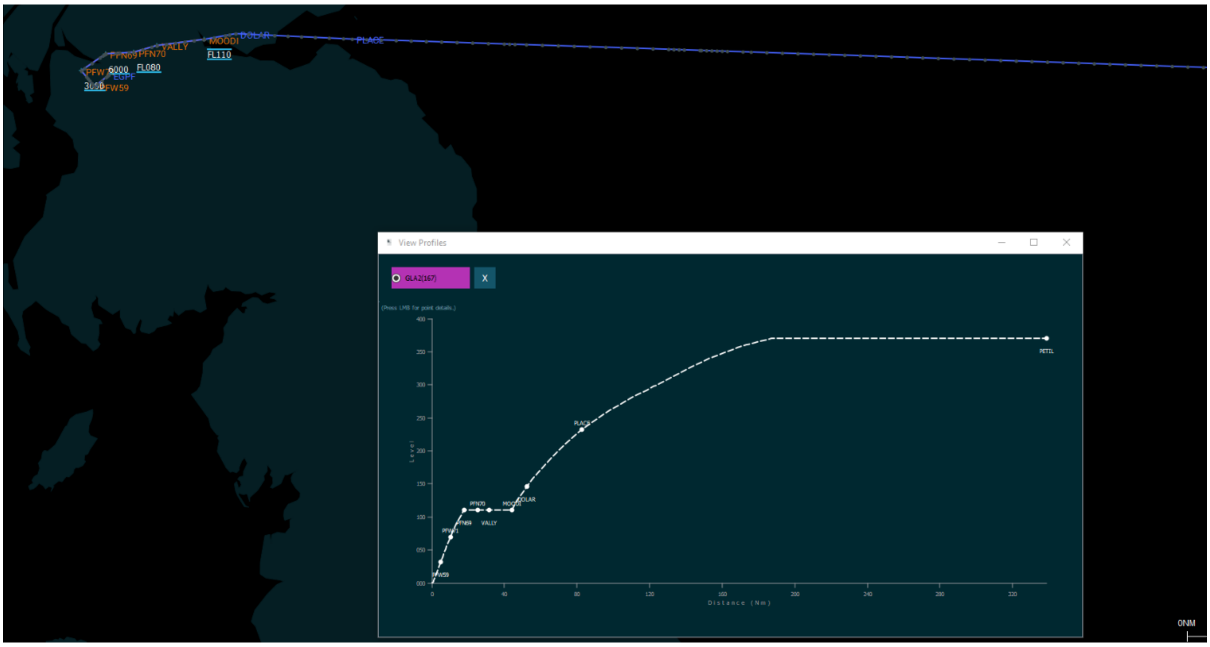


Figure 9: Example 2 Glasgow to Dubai Proposal Unrestricted MOODI1W
Track Length: 337.79 NM

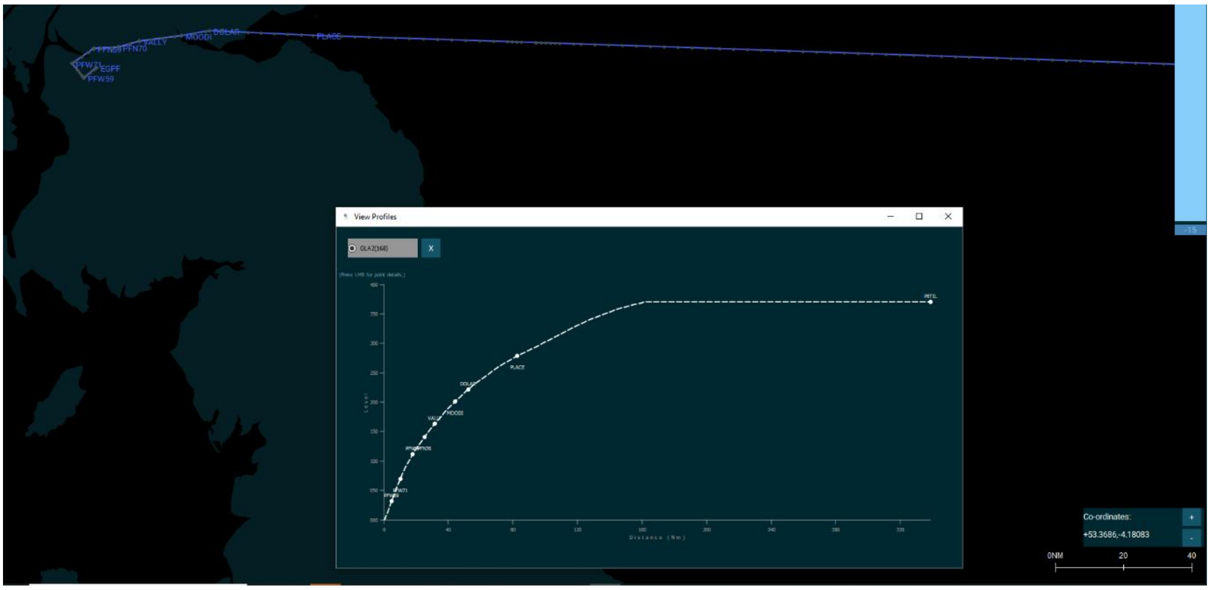


Figure 10: Example 3 Edinburgh to Amsterdam Baseline Restricted TLA6D SID

Track Length: 343.57 NM

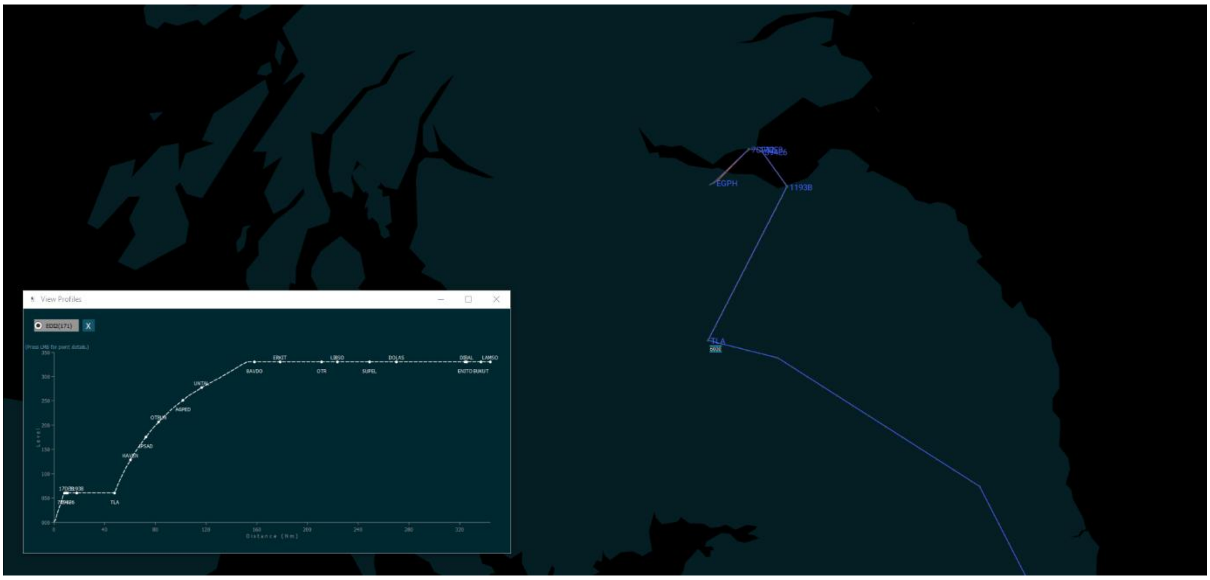


Figure 11: Example 3 Edinburgh to Amsterdam Baseline Unrestricted TLA6D SID

Track Length: 343.57 NM

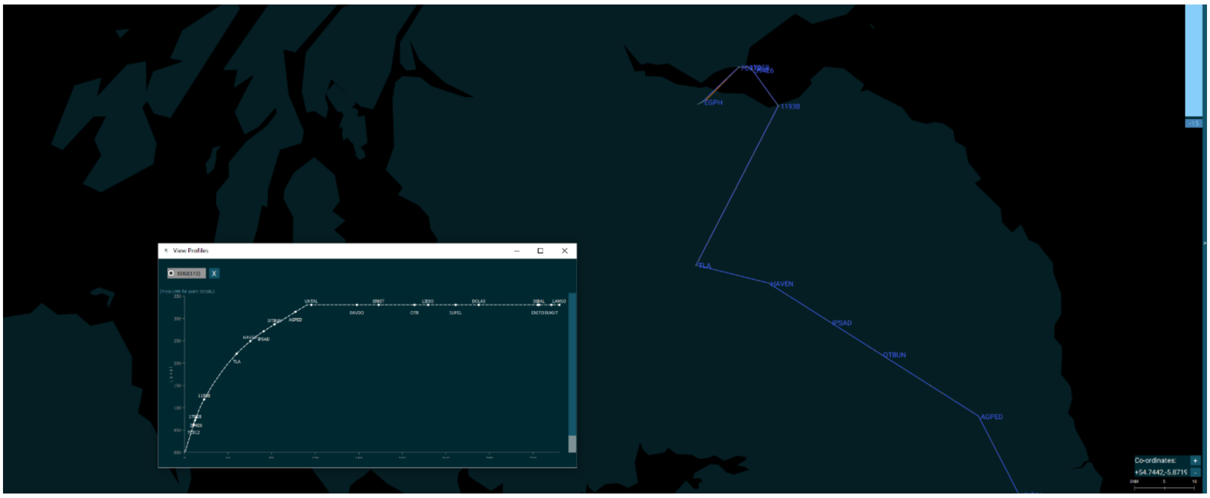


Figure 12: Example 3 Edinburgh to Amsterdam Proposal Restricted BERRY1B

Track Length: 326.27 NM

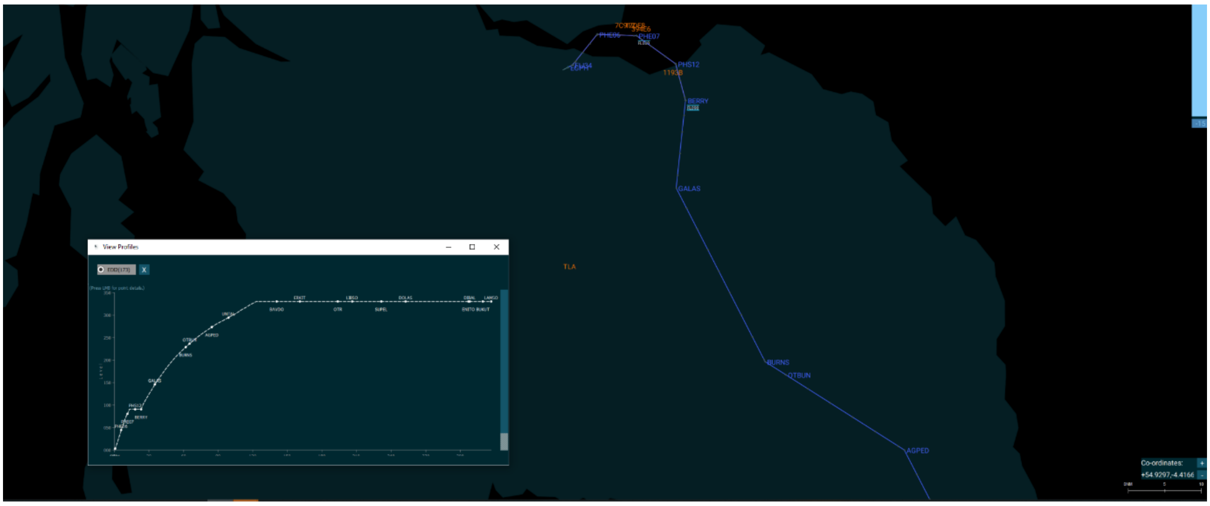


Figure 13: Example 3 Edinburgh to Amsterdam Proposal Unrestricted BERRY1B

Track Length: 326.27 NM

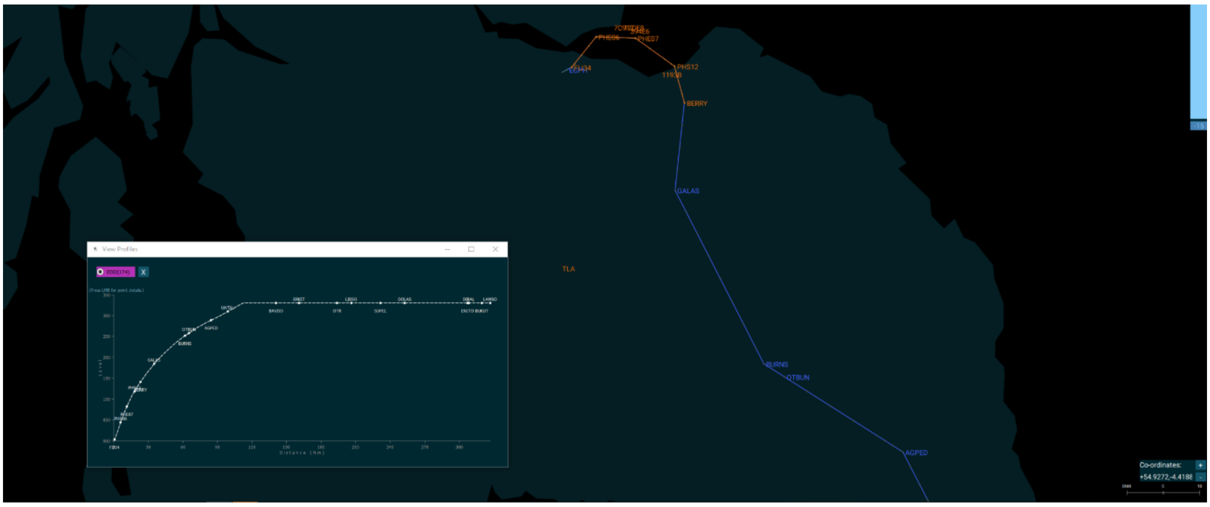


Figure 14: Example 4 Edinburgh to Belfast Baseline Restricted GOSAM1C
Track Length: 134.41 NM

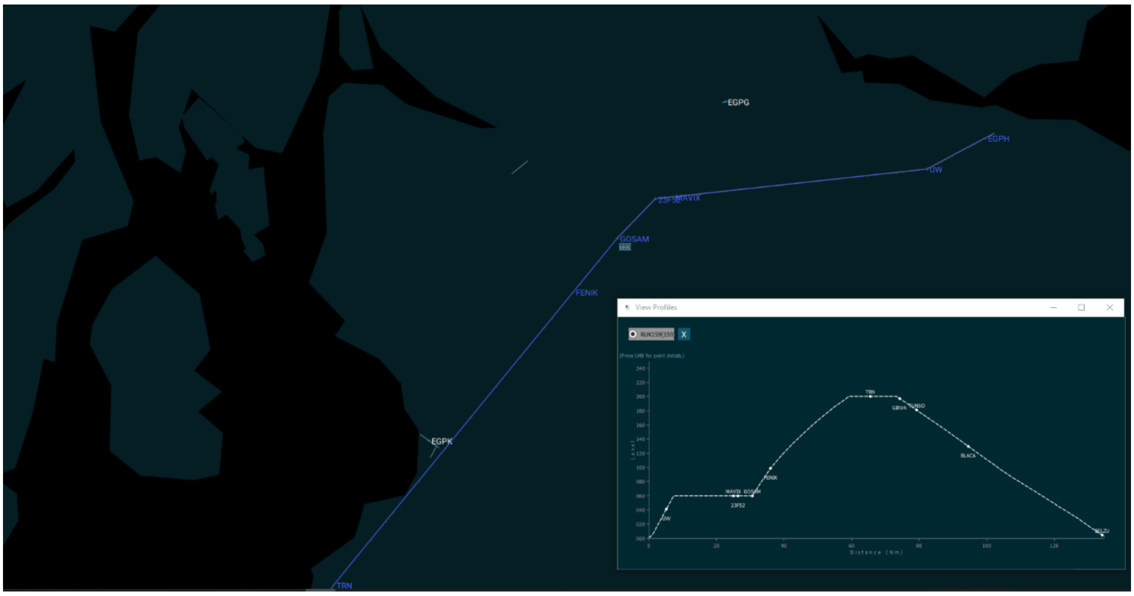


Figure 15: Example 4 Edinburgh to Belfast Baseline Unrestricted GOSAM1C
Track Length: 134.41 NM

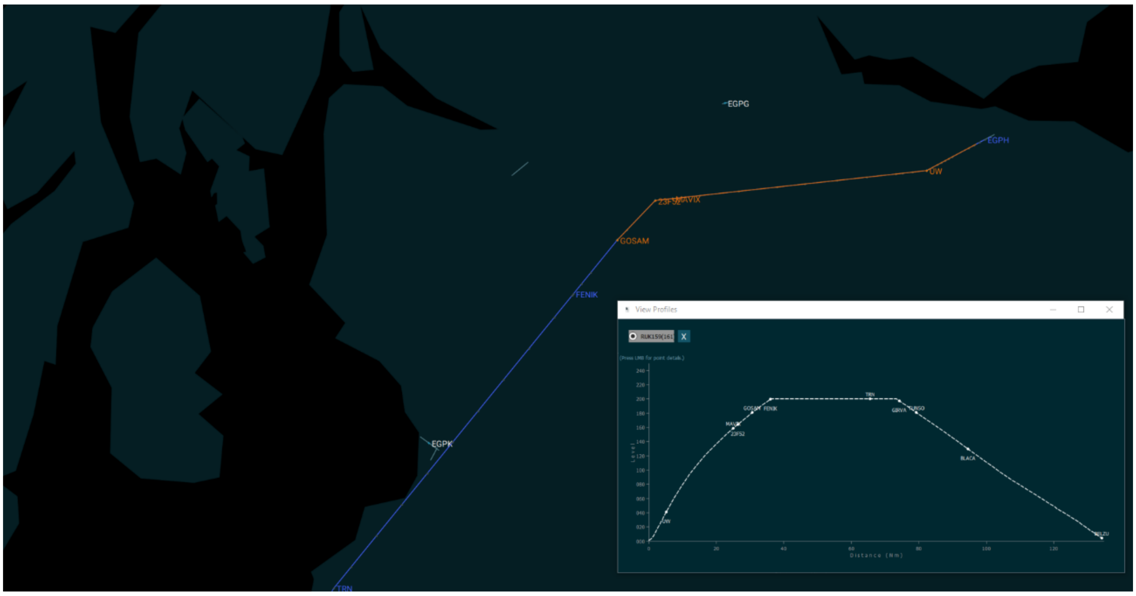


Figure 16: Example 4 Edinburgh to Belfast Proposal Restricted STEPS1A
Track Length: 136.74 NM

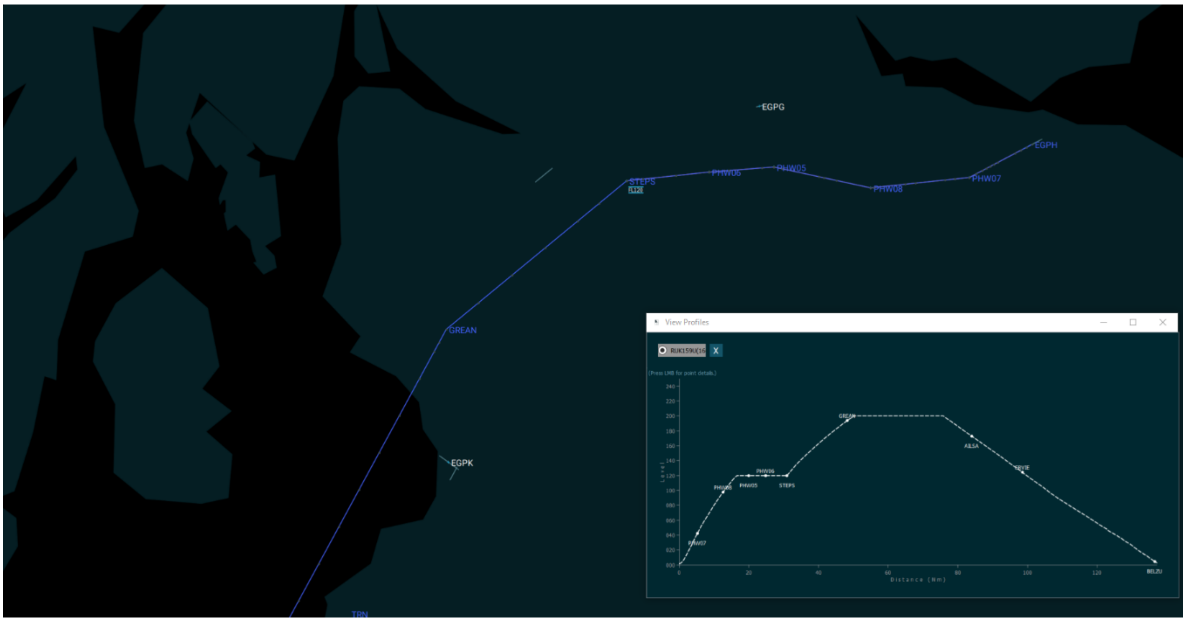
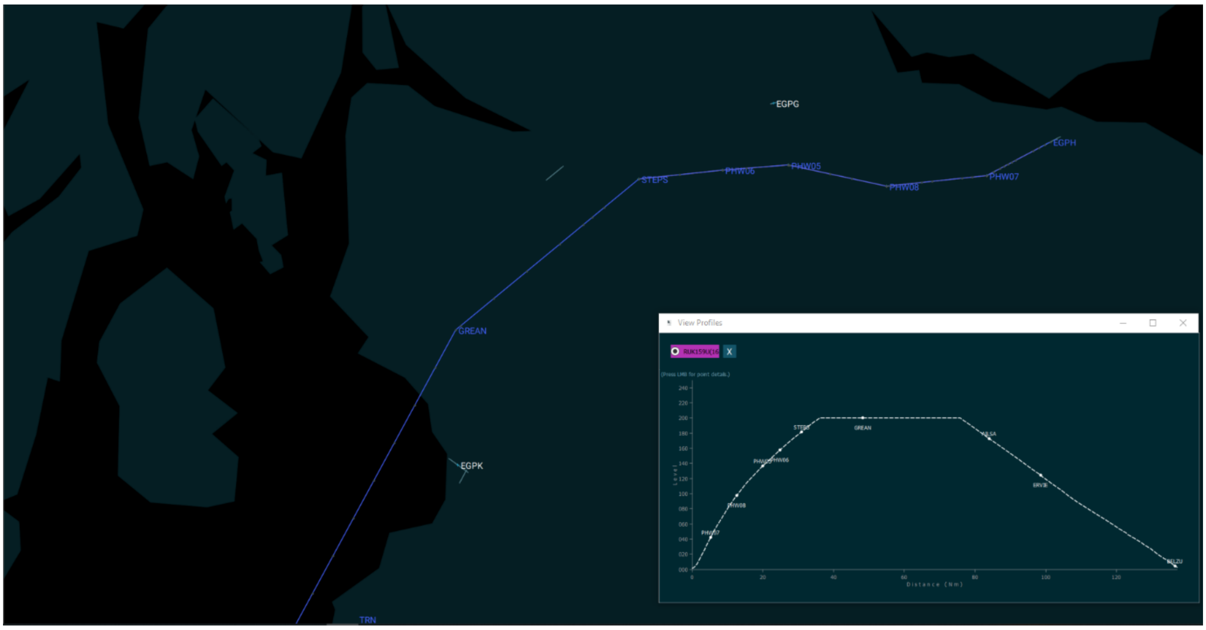


Figure 17: Example 4 Edinburgh to Belfast Proposal Unrestricted STEPS1A
Track Length: 136.74 NM



Annex C: CAF2 Shared Assumptions

65. This annex lists common assumptions used by sponsors in their respective ACPs to ensure consistency across the ScTMA cluster. The common assumptions were written and agreed by sponsors in advance of the analysis being undertaken and so is written, and presented here, in the future tense, even though the analysis has now been undertaken.

66. CAP1616 does not prescribe methodologies and therefore sponsors may legitimately use different models and methods of analysis. Assumptions relevant individual sponsors are to be captured in that sponsor's ACP. It is the sponsor's responsibility to ensure CAA acceptance of local models/methods through their CAA account manager.

Danger Area 514 (DA514) Activation Assumptions

67. DA514 activation would affect the availability of routes over the Firth of Forth. DA514 activations of up to 4 hours are expected up to 55 times per year. At the maximum expected rate (55 activations for 4 hours) this would represent only 2.5% of the time. In reality it is likely to be less. Modelling DA514 activation would add significant complexity to the FOA and the outcomes would be negligible. Modelling DA514 activation has therefore not been taken into account in the FOA analyses.

Common Fuel to CO_2e conversion Factor

68. A conversion factor of 3.18 (to 3 significant figures) must be used to convert aviation fuel kg to CO_2e kg. This has been sourced from Aviation Turbine Fuel in the UK Government conversion factors for company reporting of GHG emissions in January 2024. It is assumed that all aircraft use this fuel and therefore the conversion factor for aviation spirit does not need to be considered.

Common Definition for Traded flights

69. The UK Emissions Trading Scheme (ETS) applies as follows:

Table 5: Traded/Non-Traded Definition by Origin/Destination

Airport			UK ETS Traded status	
Country	ICAO Code	Airport	Arrivals from	Departures to
Austria	LO	All	Non-traded	Traded
Belgium	EB	All	Non-traded	Traded
Bulgaria	LB	All	Non-traded	Traded
Croatia	LD	All	Non-traded	Traded
Republic of Cyprus	LC	All	Non-traded	Traded
Czech Republic	LK	All	Non-traded	Traded
Denmark	EK	All	Non-traded	Traded
Estonia	EE	All	Non-traded	Traded
Finland	EF	All	Non-traded	Traded
France	LF	All	Non-traded	Traded
Germany	ED	All	Non-traded	Traded
Greece	LG	All	Non-traded	Traded
Hungary	LH	All	Non-traded	Traded
Ireland	EI	All	Non-traded	Traded
Iceland	BI	All	Non-traded	Traded
Italy	LI	All	Non-traded	Traded
Latvia	EV	All	Non-traded	Traded

Airport			UK ETS Traded status	
Country	ICAO Code	Airport	Arrivals from	Departures to
Lithuania	EY	All	Non-traded	Traded
Luxembourg	EL	All	Non-traded	Traded
Malta	LM	All	Non-traded	Traded
Netherlands	EH	All	Non-traded	Traded
Norway	EN	All	Non-traded	Traded
Poland	EP	All	Non-traded	Traded
Portugal	LP	All, except Azores and Madera (below)	Non-traded	Traded
Portugal	LP	LPCR	Non-traded	Non-traded
Portugal	LP	LPFL	Non-traded	Non-traded
Portugal	LP	LPGR	Non-traded	Non-traded
Portugal	LP	LPHR	Non-traded	Non-traded
Portugal	LP	LPPD	Non-traded	Non-traded
Portugal	LP	LPLA	Non-traded	Non-traded
Portugal	LP	LPPI	Non-traded	Non-traded
Portugal	LP	LPAZ	Non-traded	Non-traded
Portugal	LP	LPSJ	Non-traded	Non-traded
Portugal	LP	LPMA	Non-traded	Non-traded
Romania	LR	All	Non-traded	Traded
Slovakia	LZ	All	Non-traded	Traded
Slovenia	LJ	All	Non-traded	Traded
Spain	LE	All	Non-traded	Traded
Sweden	ES	All	Non-traded	Traded
Switzerland	LS	All	Non-traded	Traded
UK	EG	All, except Crown Dependencies (below)	Traded	Traded
UK	EG	EGNS	Non-traded	Non-traded
UK	EG	EGJA	Non-traded	Non-traded
UK	EG	EGJB	Non-traded	Non-traded
UK	EG	EGJJ	Non-traded	Non-traded
Gibraltar	LX	LXGB	Traded	Traded
Canary Islands	GC	All	Non-traded	Non-traded

Airport			UK ETS Traded status	
Country	ICAO Code	Airport	Arrivals from	Departures to
French Guiana	SO	All	Non-traded	Non-traded
France (Mayotte and Réunion)	FM	FMCZ	Non-traded	Non-traded
France (Mayotte and Réunion)	FM	FMEE	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFA	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFB	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFC	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFM	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFR	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFS	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFF	Non-traded	Non-traded
France (Guadeloupe, Martinique, Saint Barthélemy, Saint Martin)	TF	TFFG	Non-traded	Non-traded

DEPARTURES/ARRIVALS TO/FROM ANY COUNTRY NOT LISTED ARE NON-TRADED

70. Following flights are NOT-TRADED regardless of arrival/departure destination:

- Flights where aircraft weight is below 5,700kg MTOW
- Aircraft following Visual Flight Rules only
- Aircraft transporting Heads of State, Heads of Governments or Ministries
- Military operations (unless they have filed a flightplan and follow airways)
- Circular flights (flight tests or circuits)

71. Flights should be allocated to the traded vs non-traded categories before fuel/CO_2e is calculated (rather than applying it as a percentage to the final fuel/CO_2e figures). This will take account of differences in the fleet mix between traded and non-traded categories.

72. TAG unit A1.1 2.5.2 says “CBA could be based on either the factor-cost or market-price unit of account”. For consistency all ACPS should use the market-price unit of account.

73. CAA have agreed the CORISA scheme does not need to be taken into account.

74. Both traded and non–traded flights should be monetised using the TAG workbooks.

75. Non-traded TAG values are listed in the CBA as 'community benefit', whereas the traded values are under the 'Airspace users benefit' on the basis that the value of the CO_2e differences between options will be captured in the cost of future UK ETS permits. This follows the method of the AD6 ACP.

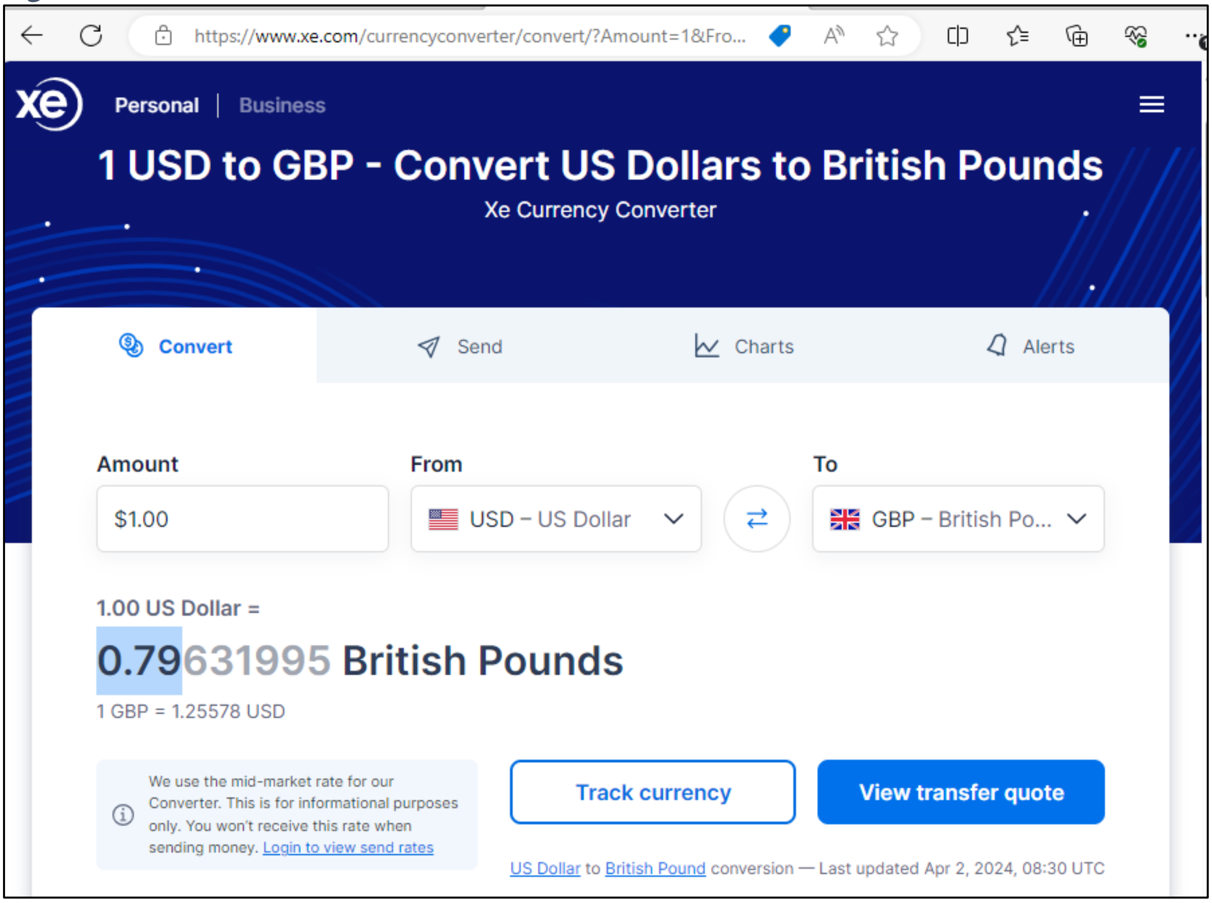
Common Fuel Cost per T

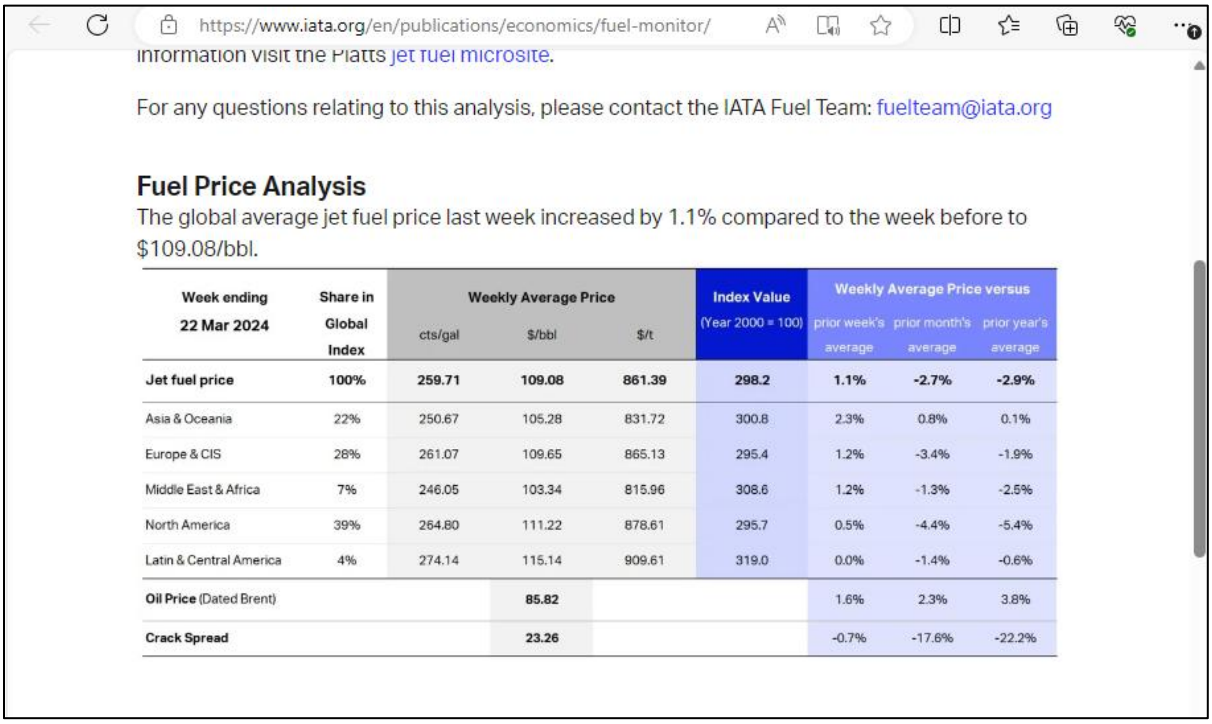
76. Figure 18 shows the fuel cost ($861.39 sourced from: IATA Fuel Monitor for week ending 22/03/24) and $ to £ conversion (0.796 sourced from: XE Currency Exchange on 02/04/24) rate used for calculating fuel costs to airlines.

77. Cost per Tonne (T) to use in SCTMA FOA: £685.99.

78. The resultant monetised values for future fuel cost will therefore be in 2024 'todays' prices. These must then be discounted using the social time preference rate to provide a Net Present Value (NPV) for inclusion in cost benefit tables (CAP1616f para 3.43 to 3.49). See later section on discounting for further details.

Figure 18: Screenshots of 22/03/24 Conversion Rates and Fuel Price for Fuel Cost




https://www.iata.org/en/publications/economics/fuel-monitor/

information visit the Platts jet fuel microsite.

For any questions relating to this analysis, please contact the IATA Fuel Team: fuelteam@iata.org

Fuel Price Analysis

The global average jet fuel price last week increased by 1.1% compared to the week before to $109.08/bbl.

Week ending 22 Mar 2024	Share in Global Index	Weekly Average Price			Index Value	Weekly Average Price versus		
		cts/gal	$/bbl	$/t	(Year 2000 = 100)	prior week's average	prior month's average	prior year's average
Jet fuel price	**100%**	**259.71**	**109.08**	**861.39**	**298.2**	**1.1%**	**-2.7%**	**-2.9%**
Asia & Oceania	22%	250.67	105.28	831.72	300.8	2.3%	0.8%	0.1%
Europe & CIS	28%	261.07	109.65	865.13	295.4	1.2%	-3.4%	-1.9%
Middle East & Africa	7%	246.05	103.34	815.96	308.6	1.2%	-1.3%	-2.5%
North America	39%	264.80	111.22	878.61	295.7	0.5%	-4.4%	-5.4%
Latin & Central America	4%	274.14	115.14	909.61	319.0	0.0%	-1.4%	-0.6%
Oil Price (Dated Brent)			**85.82**			1.6%	2.3%	3.8%
Crack Spread			**23.26**			-0.7%	-17.6%	-22.2%

Common Ground Delay cost per minute

79. Airport sponsors are to use pre-departure delay costs sourced from EUROCONTROL Standard Inputs for Economic Analyses - 16 Cost of delay (ansperformance.eu).

80. Monetised values for future fuel cost must be stated in real terms and discounted to provide a Net Present Value (NPV) for inclusion in cost benefit tables (CAP1616f para 3.43 to 3.49). See later section on discounting for further details.

Airborne Delay cost per minute

81. NERL will monetise airborne delay by using the NATS cost per minute.

82. Monetised values for future delays must be stated in real terms and discounted to provide a Net Present Value (NPV) for inclusion in cost benefit tables (CAP1616f para 3.43 to 3.49). See later section on cost benefit for further details.

Common Cost Benefit Evaluation/Discounting Assumptions

83. All cost benefit values should be expressed in real terms with a 2024 base year, before being discounted (as per TAG Unit A1.1 Section 2.6.). That is, any nominal prices used will need adjusting into real prices using relevant GDP deflators (TAG Data Book, Annual Parameters tab).

84. To aid comparability, a fuel price per tonne is provided in an earlier section - this will be provided as a 2024 price for use in cost benefit tables. Accordingly, the fuel values in the cost benefit evaluation will already be expressed in real terms and will not need adjusting further.

85. All discounting should be calculated using the standard 3.5% social time preference rate, with the exception of noise values which should be calculated using the reduced rate of 1.5% (as per TAG Table A.1.1.1 and the green book TAG Unit A1.1 - Cost Benefit Analysis (publishing.service.gov.uk para 2.7.5).

Population Database Assumptions

86. Population databases sources don't need to be the same as long as they are acceptable to the CAA Account Manager of the respective ACP.

87. Population datasets do not need to have forecast data, but each sponsor should ensure results are supplemented with data about future developments from the local planning portal.

Definition of Overflight

88. CAA CAP 1498 provides two definitions of overflight. Sponsors should use the wider definition of overflight relating to a 48.5 degree angle as stipulated in CAA CAP 1616i.

Controlled Airspace (CAS) Analysis Method

89. Producing statistics on CAS changes is relatively straightforward for the cluster, but breaking it down for each ACP is difficult because many of the areas are used by more than one sponsor. Trying to split the statistics down by ACP creates the risk of double counting of both positive and negative impacts.

90. The agreed approach to quantitative assessment is for each ACP to quote the cluster wide results to meet the requirements to quantify (but not monetise), and provide a qualitative commentary for the areas affected by the designs within their own proposal

91. CAA accept there is no established method for monetising the CAS changes and so do not expect sponsors to monetise them for FOA or CAF2, unless there is a clear consequence that can be monetised. (i.e. CAA reserve the right to request monetised impacts, if they determine there may be some).

Annex D: Additional Figures for Cluster-Wide Baseline “without airspace change”

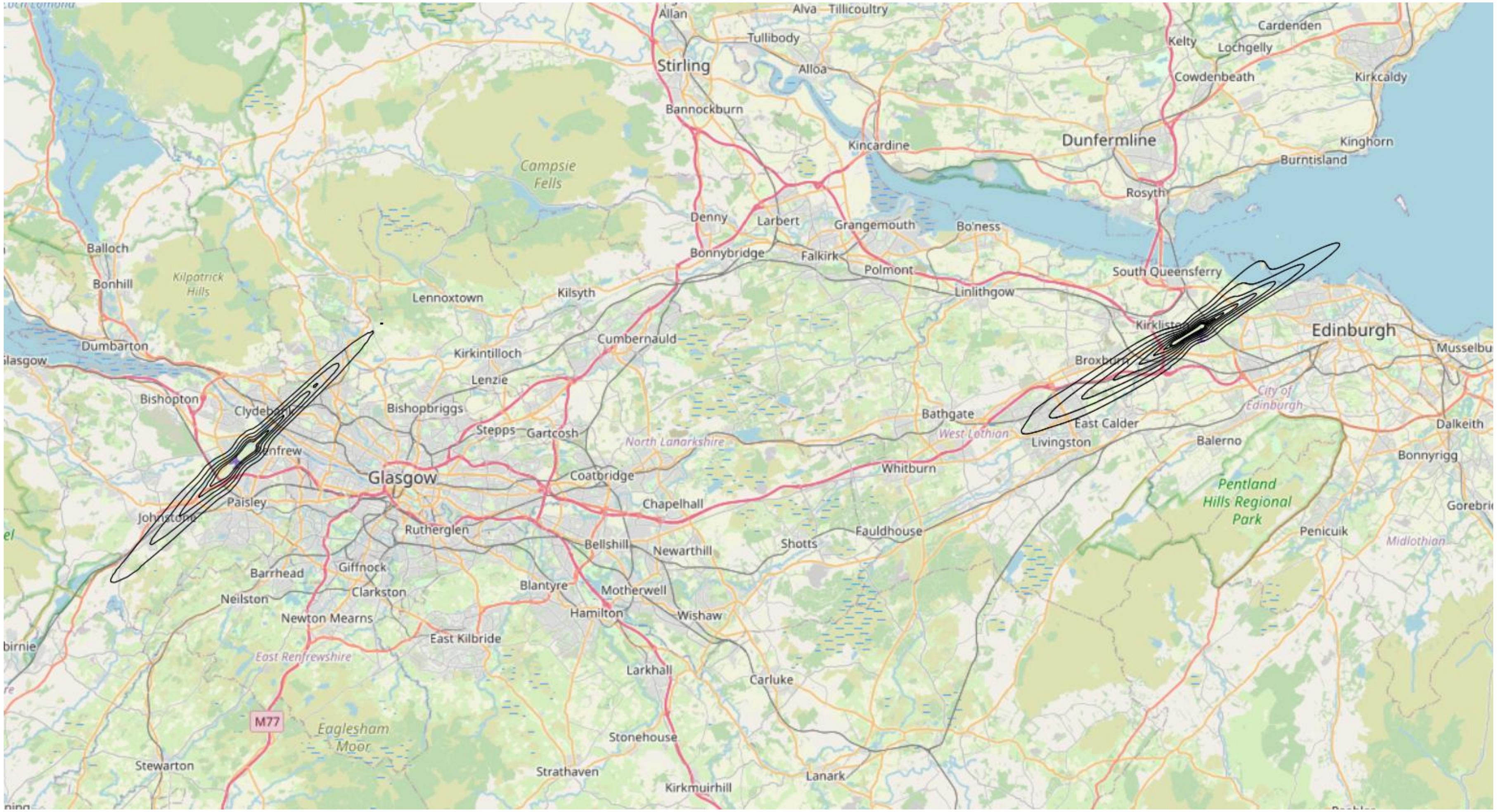
Contours For Cluster-Wide Baseline

92. The main document presents data tables for L_{Aeq}, Nx and Overflight contours. The Figures below present the contours themselves. Note that these are necessarily large scale to cover both airports. For detailed maps showing more local detail seethe individual ACPs covering the area of interest.

93. Glasgow Airport’s current day contours are from 2022, whereas Edinburgh Airport’s are from 2023.

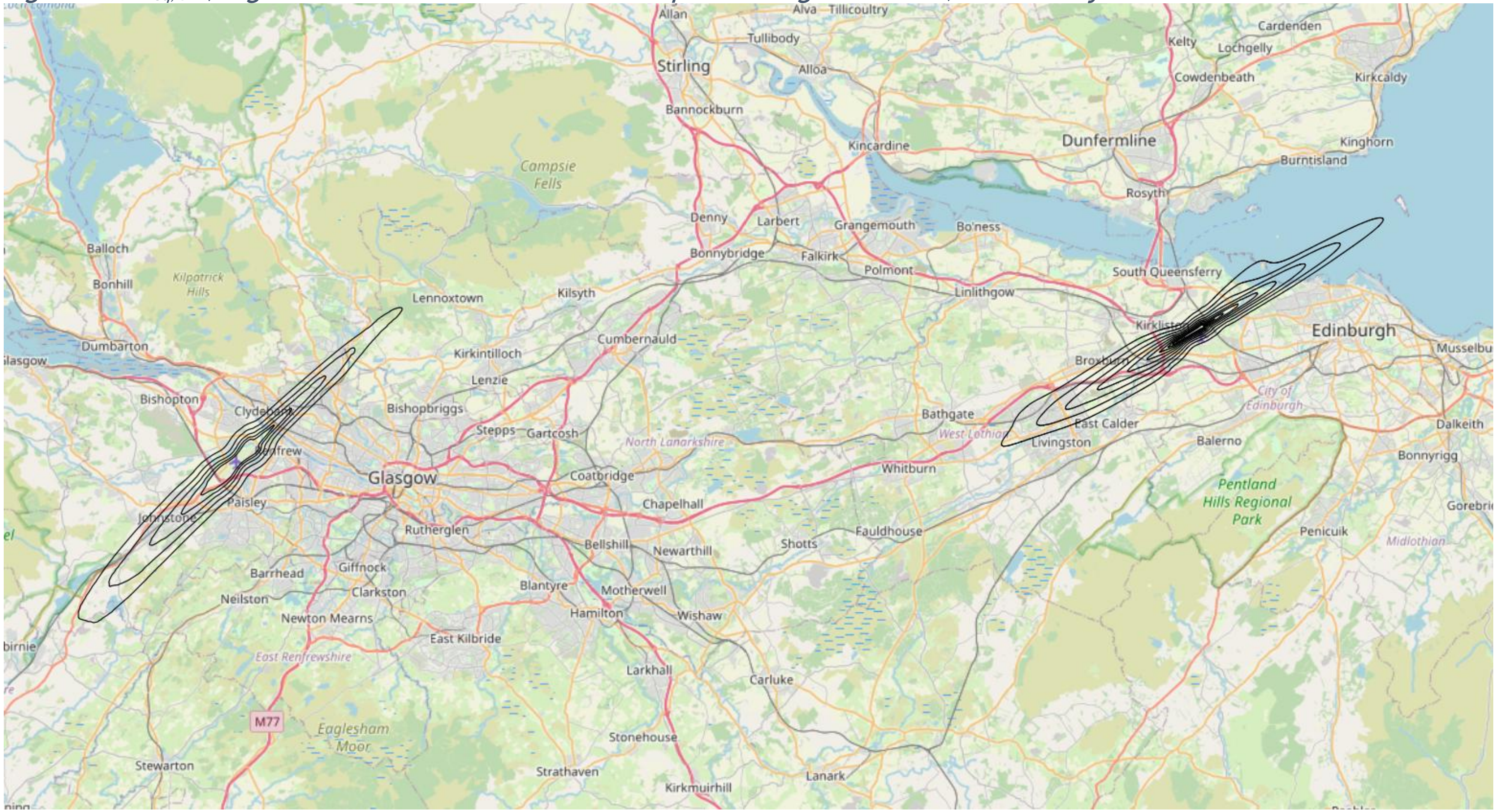
L_{Aeq} Contours for Baseline

Figure 19: $L_{Aeq,\ 16\ Hr}$, Daytime Cluster Wide "Without Airspace Change" Baseline, Current Day



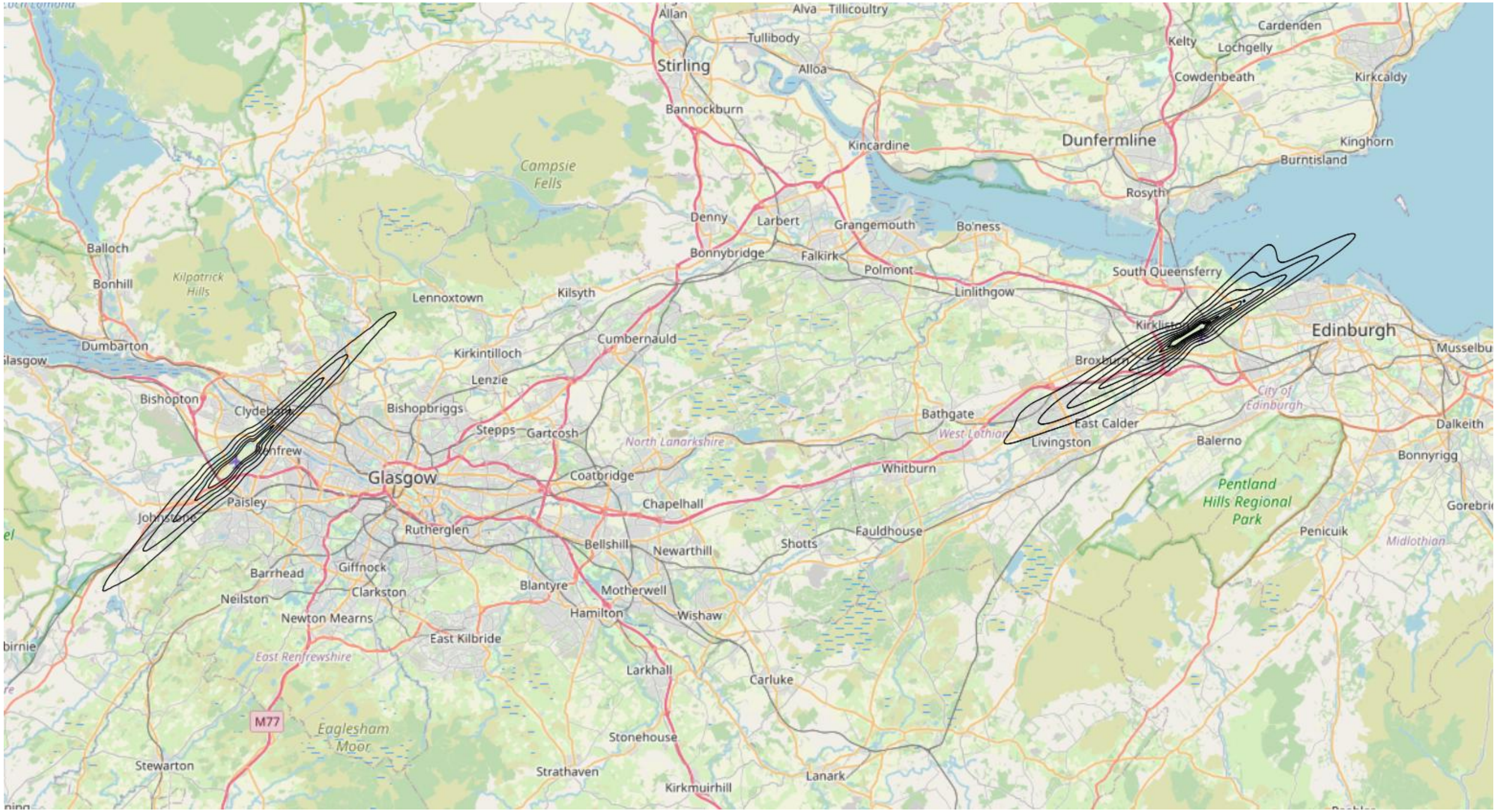
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 51dBA $L_{Aeq,\ 16\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 20: $L_{Aeq,\ 8\ Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day



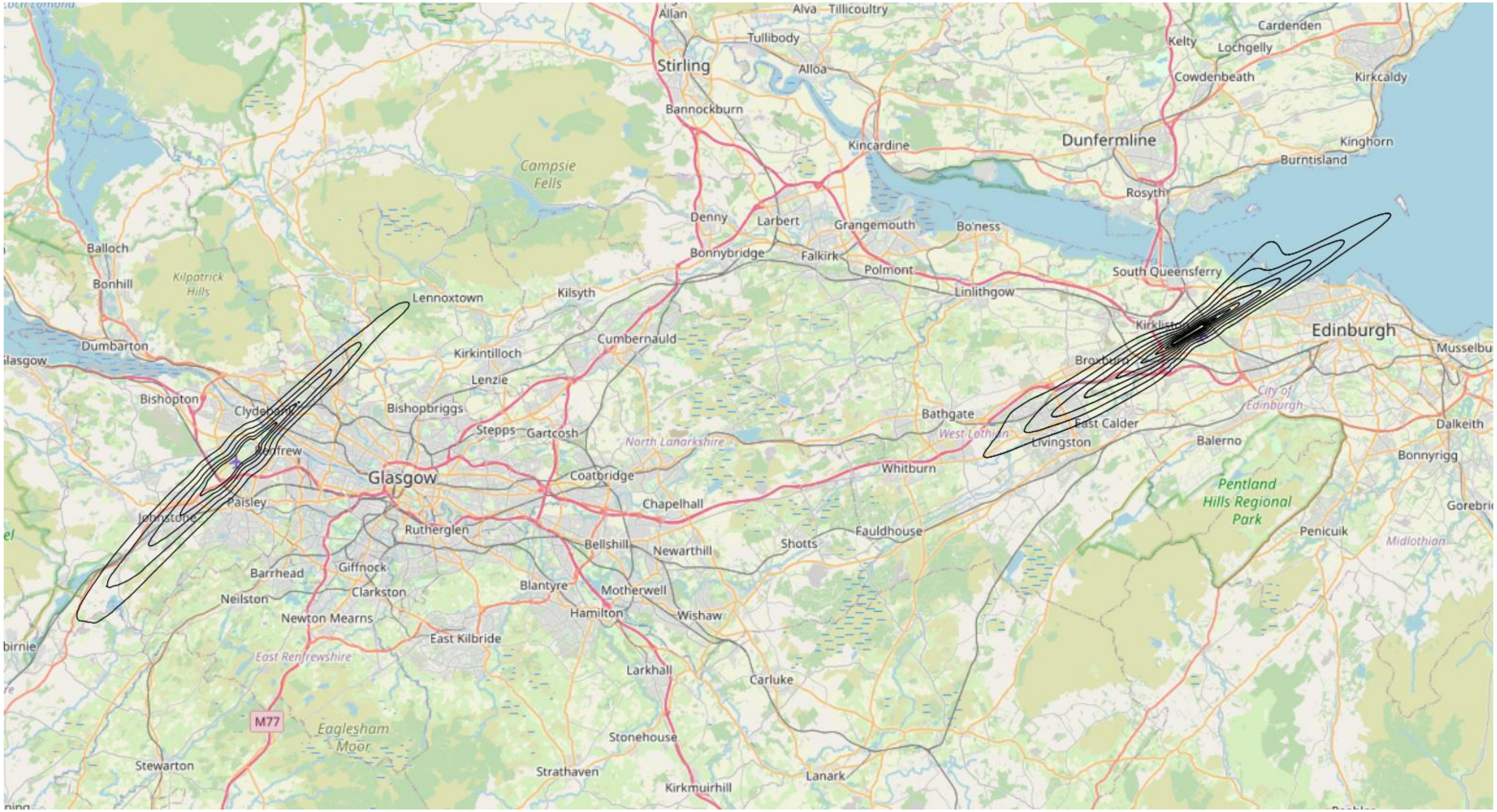
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 45dBA $L_{Aeq,\ 8\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 21: $L_{Aeq,\ 16\ Hr}$, Daytime Cluster Wide "Without Airspace Change" Baseline, 2027



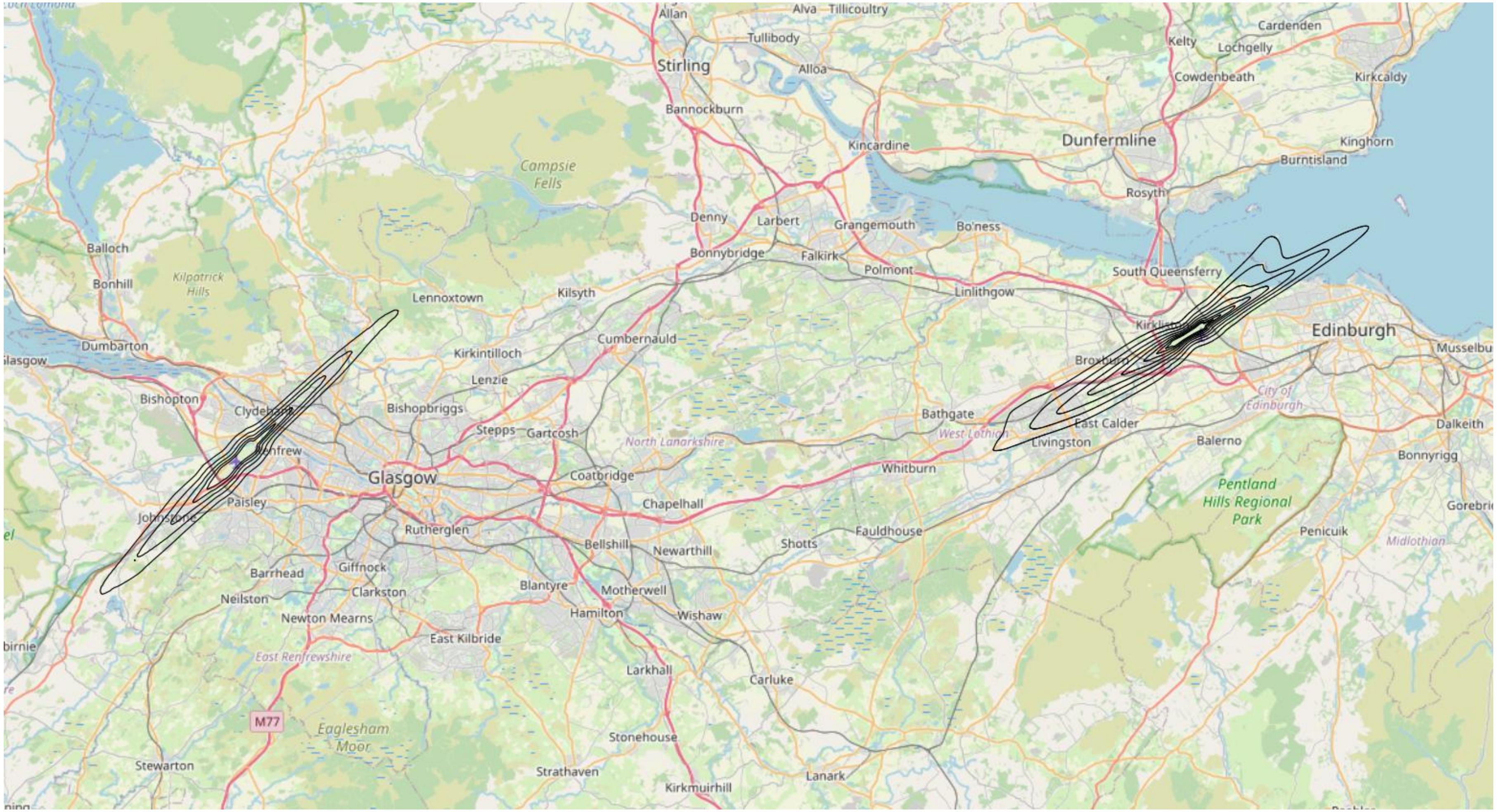
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 51dBA $L_{Aeq,\ 16\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 22: $L_{Aeq,\ 8\ Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027



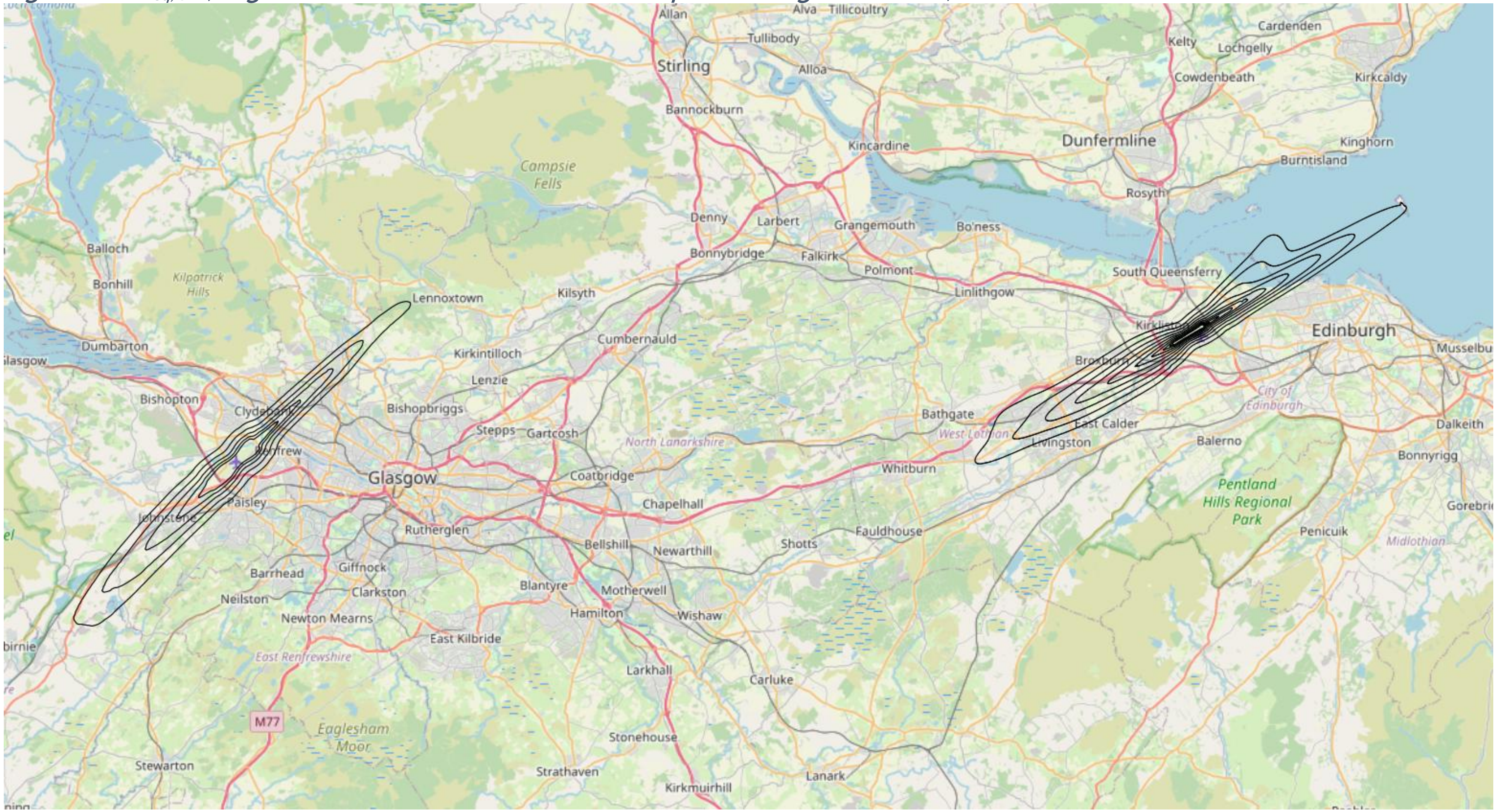
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 45dBA $L_{Aeq,\ 8\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 23: $L_{Aeq, 16 Hr}$, Daytime Cluster Wide “Without Airspace Change” Baseline, 2036



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 51dBA $L_{Aeq, 16 Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

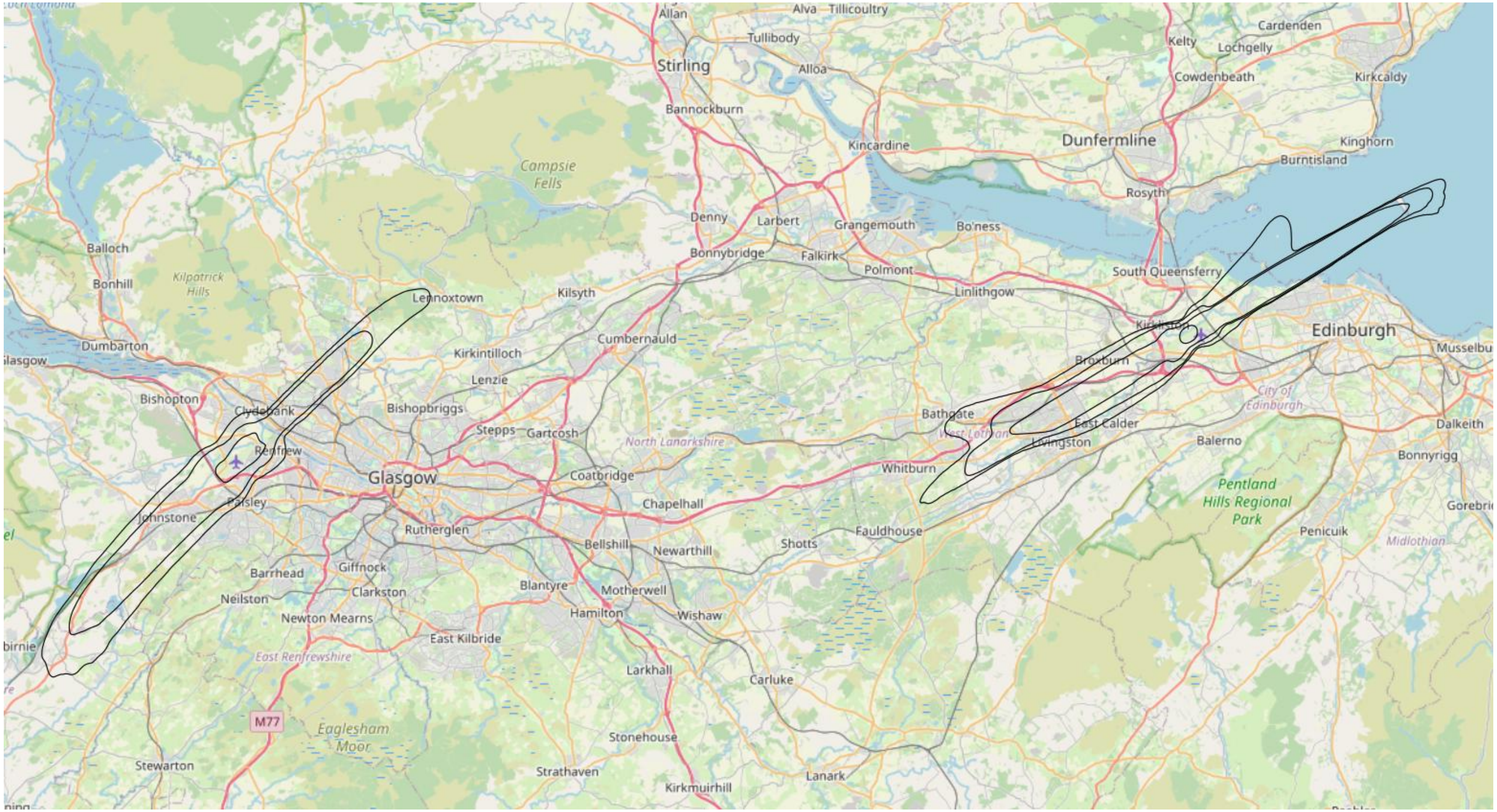
Figure 24: $L_{Aeq, 8 Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 45dBA $L_{Aeq, 8 Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

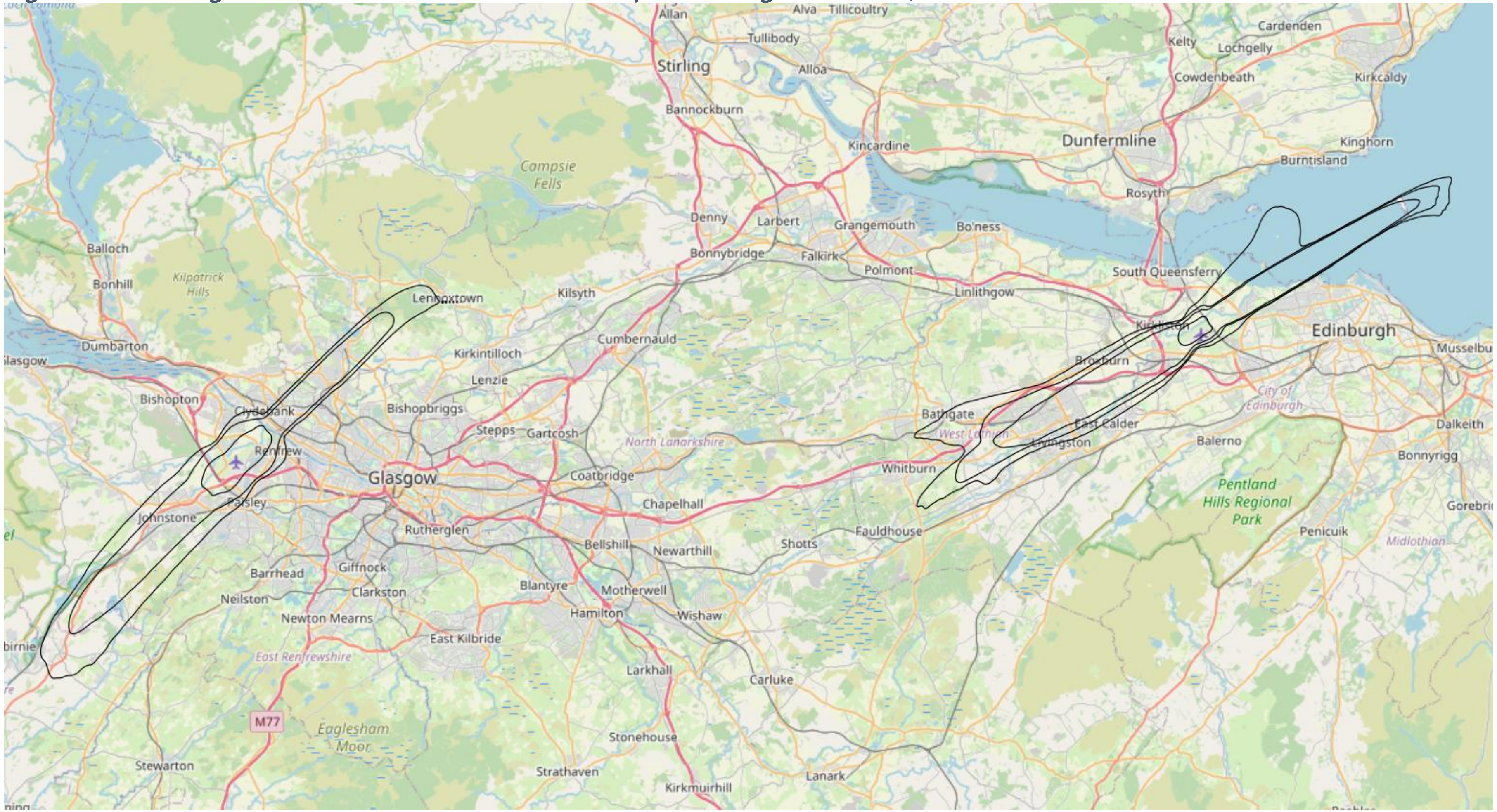
Nx Contours for Baseline

Figure 25: N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day



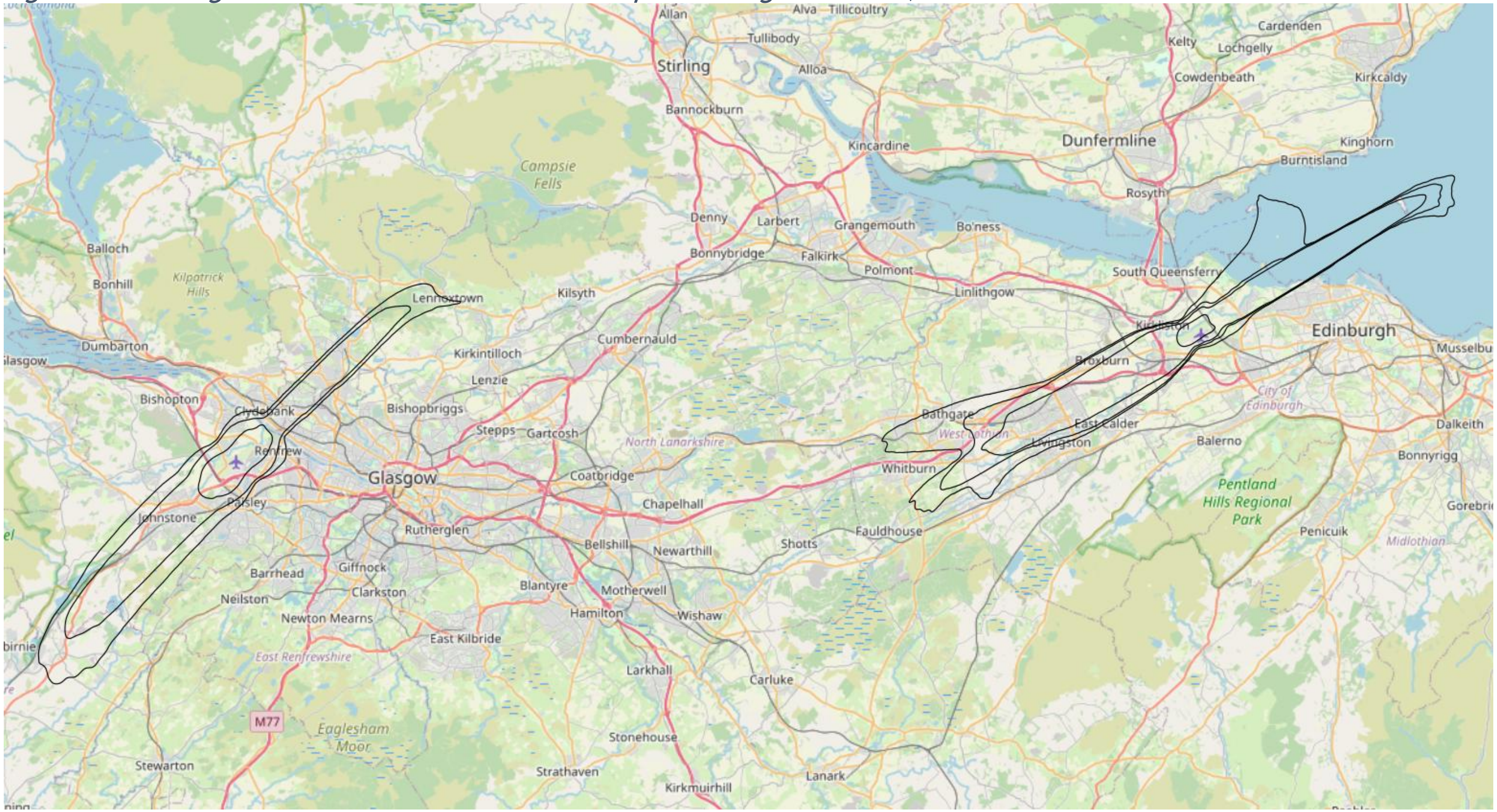
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day that exceed the . For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 26: N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027



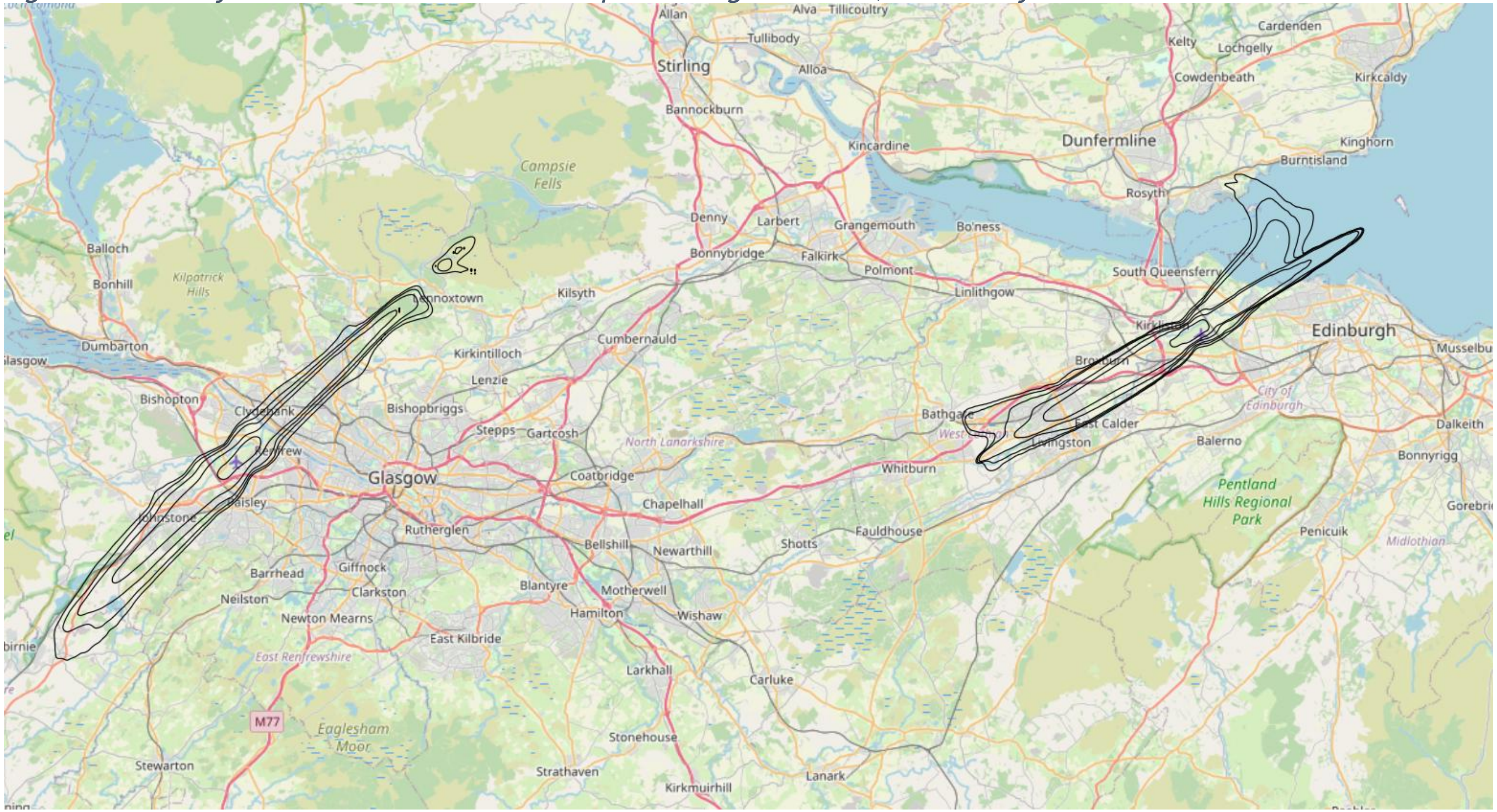
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 27: N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036



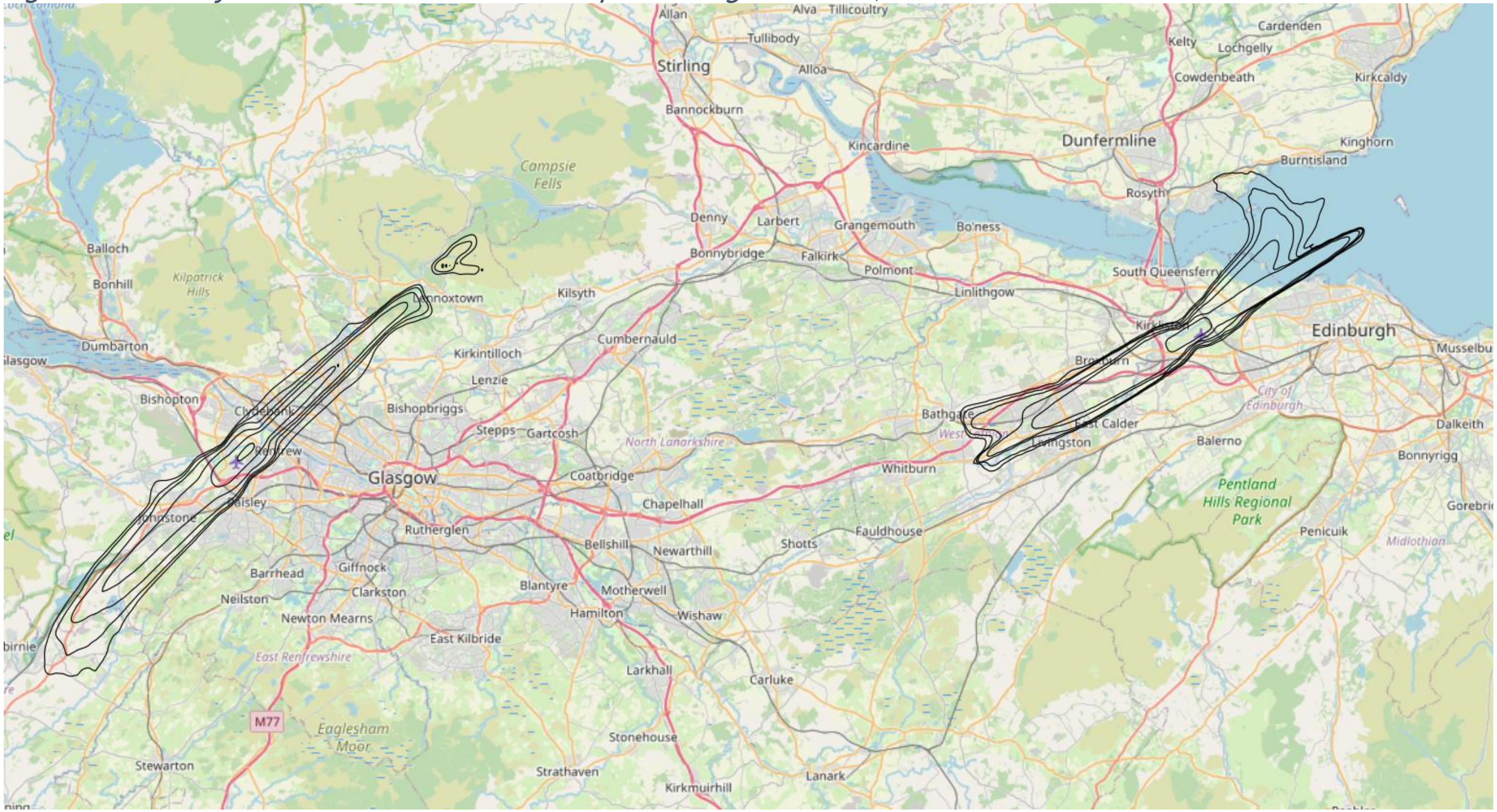
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 28: N65 Daytime Cluster Wide “Without Airspace Change” Baseline, Current Day



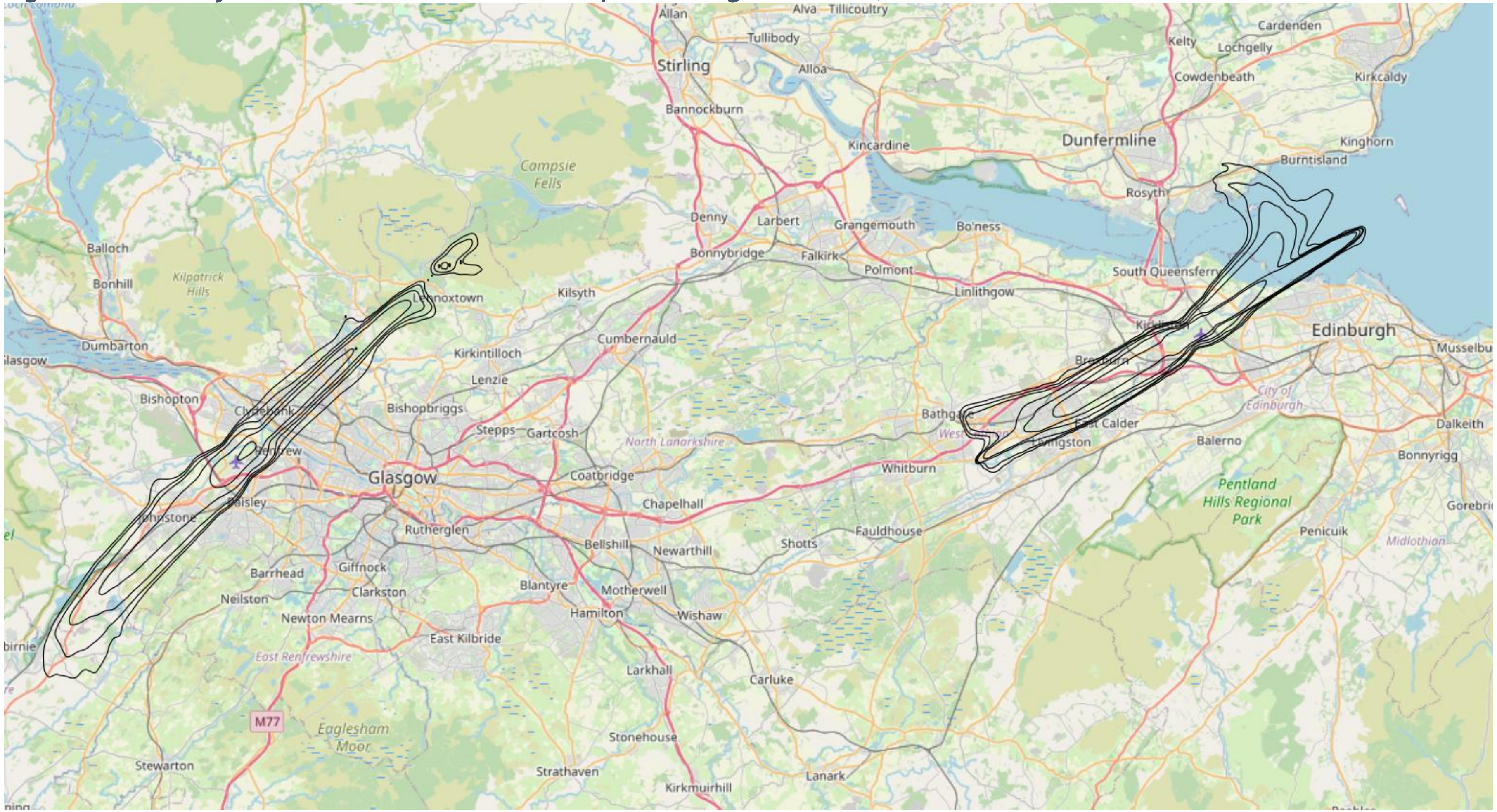
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 29: N65 Daytime Cluster Wide "Without Airspace Change" Baseline, 2027



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

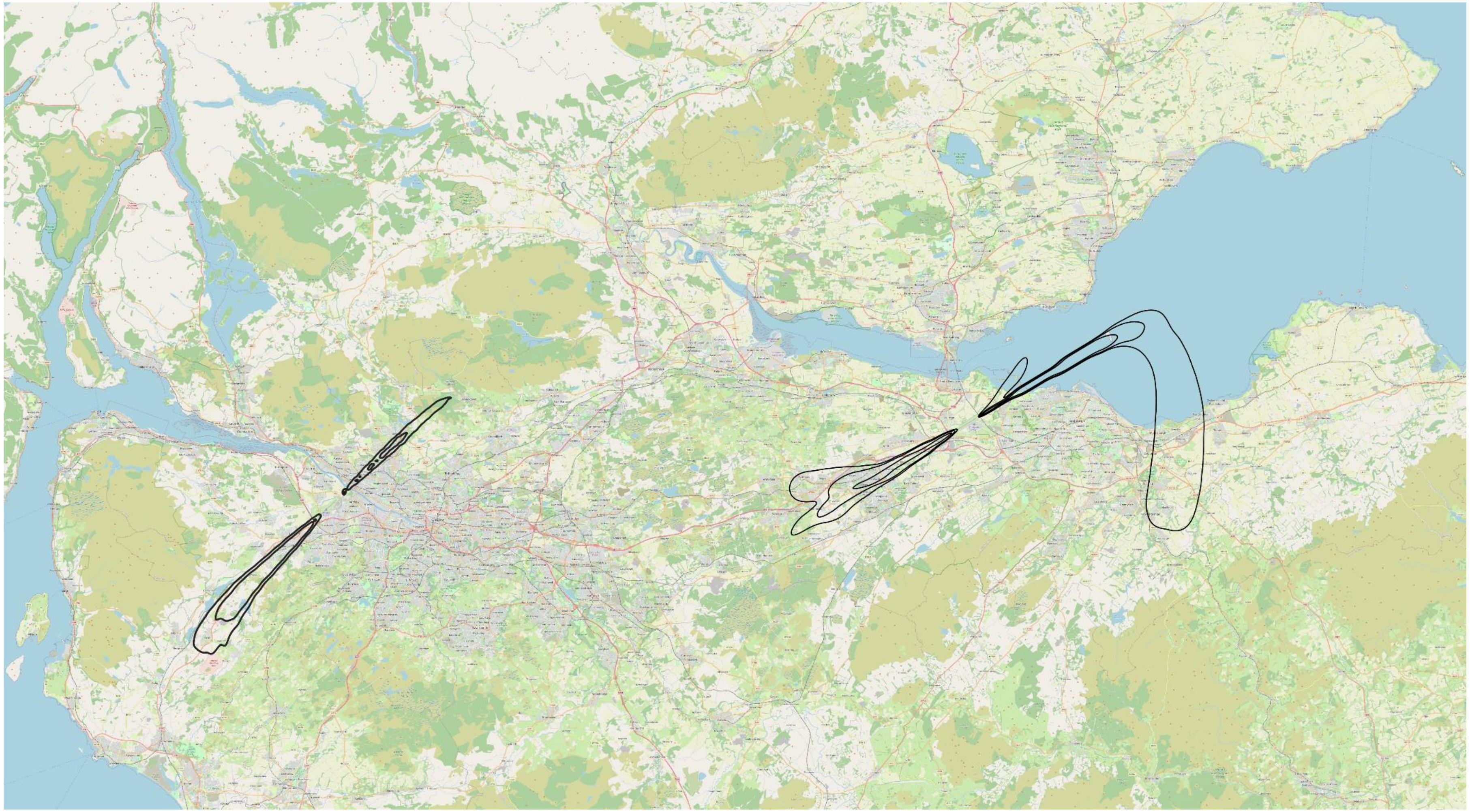
Figure 30: N65 Daytime Cluster Wide "Without Airspace Change" Baseline, 2036



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

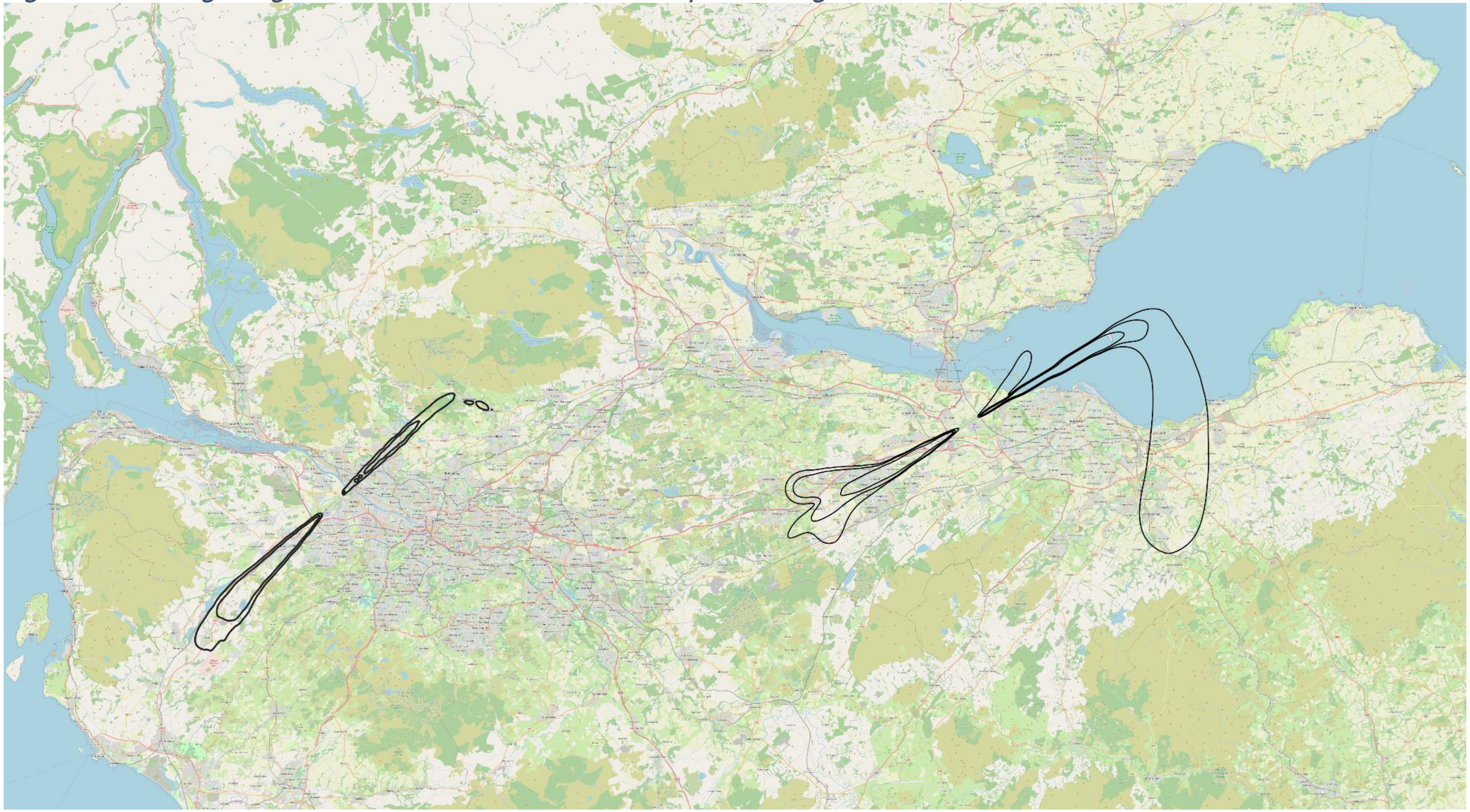
Overflight Contours for Baseline

Figure 31: Overflight Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day



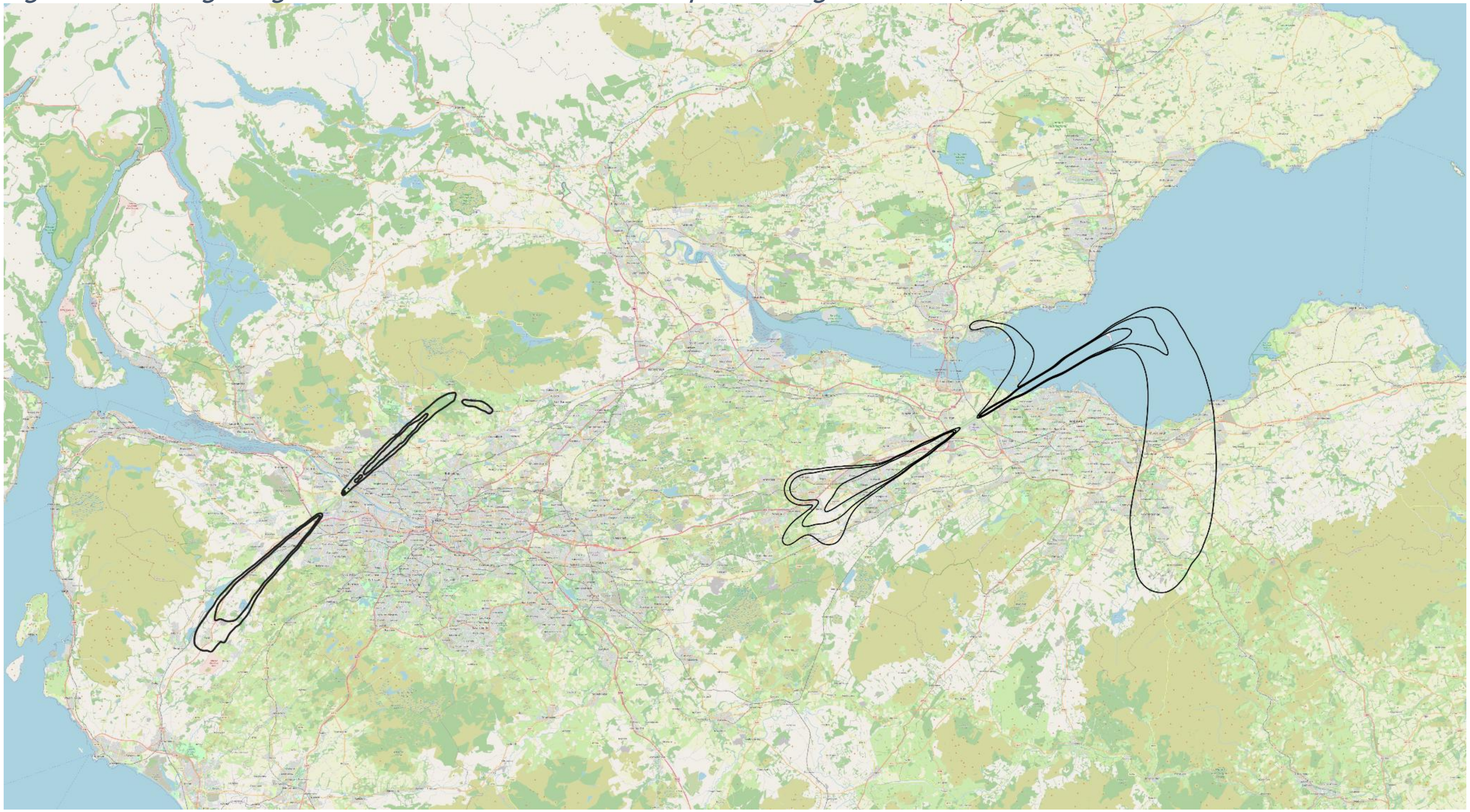
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 32: Overflight Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027



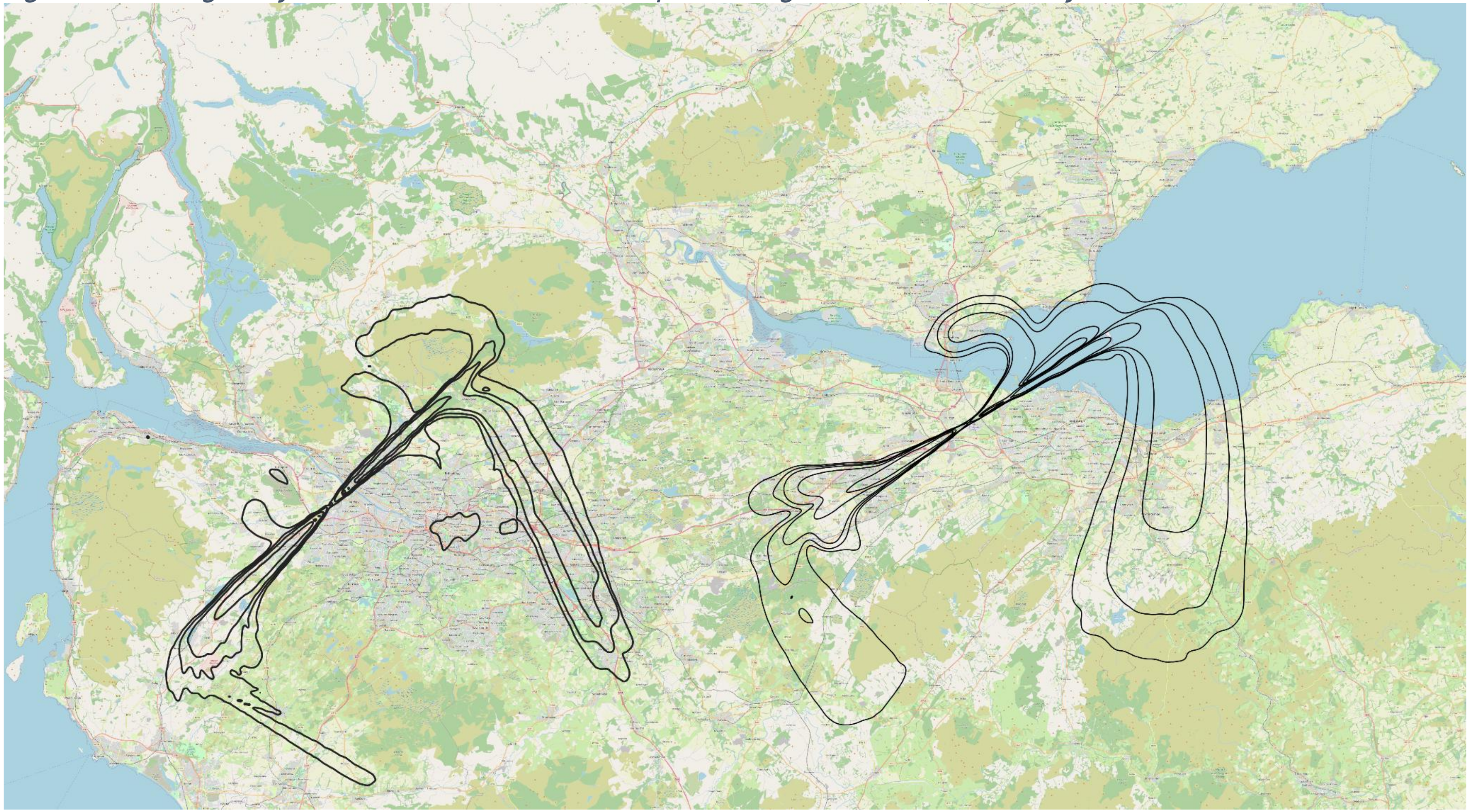
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 33: Overflight Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036



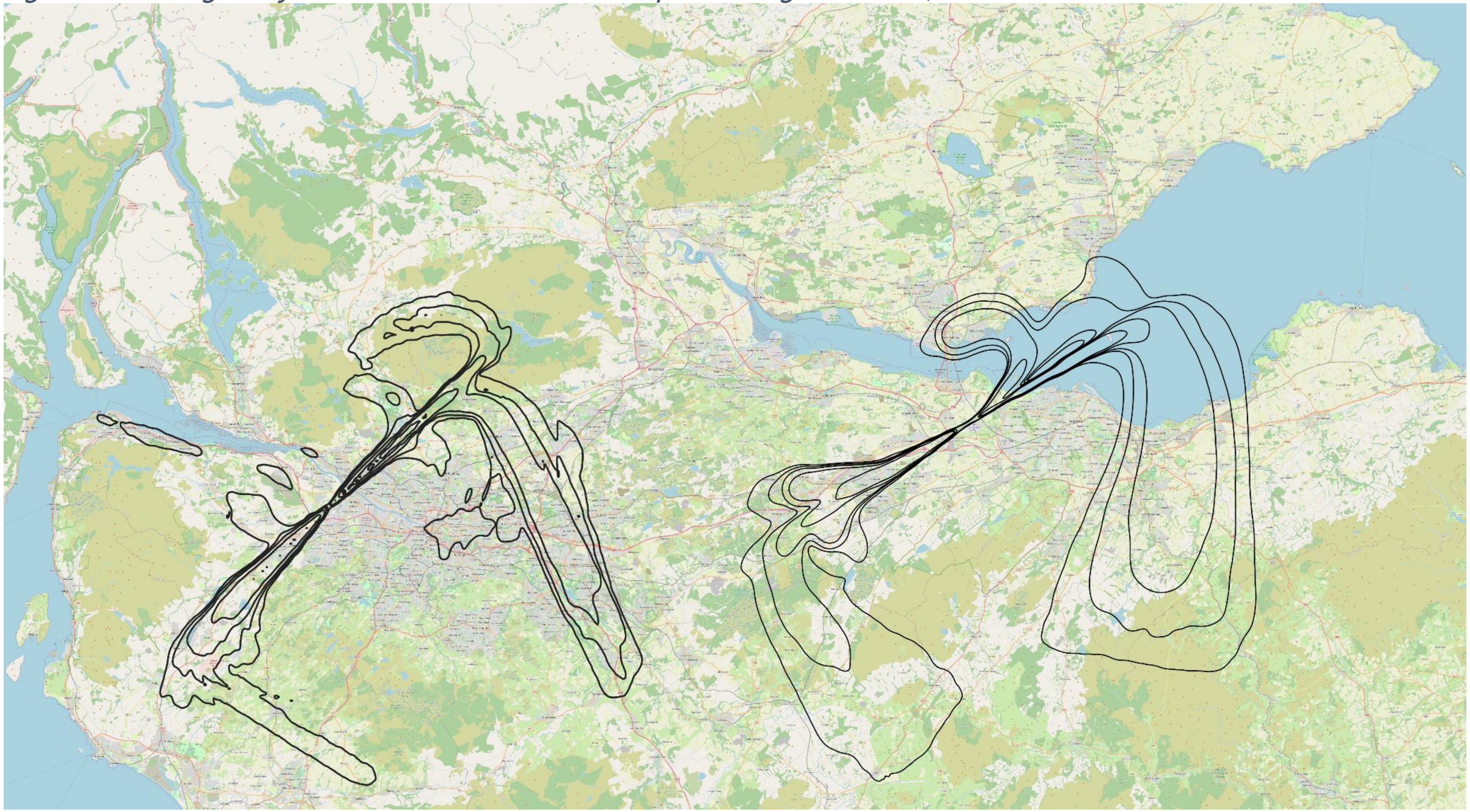
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 34: Overflight Daytime Cluster Wide "Without Airspace Change" Baseline, Current Day



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 35: Overflight Daytime Cluster Wide “Without Airspace Change” Baseline, 2027



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 36: Overflight Daytime Cluster Wide "Without Airspace Change" Baseline, 2036

This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Baseline Tranquillity Tables for $L_{Aeq, 8hr}$, N65, N60 and Overflights Night-Time

94. $L_{Aeq, 8Hr}$, N65, N60 and Overflight Night tables for the baseline in relation to tranquillity sites are provided below. $L_{Aeq, 16Hr}$, and Daytime Overflight Tables are provided in the main CAF2 report.

Table 6: Tranquillity Sites, $L_{Aeq, 8 Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2022 (GLA) 2023 (EDI)	Without Airspace Change	L_{Aeq8hr}	45	1	0.17	6	3.99	6	5.88	0	0	0	0	24	0.44
			48	1	0.01	5	1.86	4	4.27	0	0	0	0	14	0.29
			51	0	0	5	0.85	4	2.47	0	0	0	0	9	0.2
			54	0	0	1	0.26	3	1.28	0	0	0	0	8	0.13
			57	0	0	0	0	2	0.7	0	0	0	0	4	0.04
			60	0	0	0	0	2	0.34	0	0	0	0	3	0.02
			63	0	0	0	0	1	0.02	0	0	0	0	2	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 7: Tranquillity Sites, $L_{Aeq, 8 Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	Without Airspace Change	L_{Aeq8hr}	45	1	0.27	6	4.75	6	6.58	0	0	0	0	26	0.48
			48	1	0.04	5	3.12	4	4.9	0	0	0	0	15	0.3
			51	0	0	5	1.03	4	3.27	0	0	0	0	9	0.2
			54	0	0	2	0.41	3	1.68	0	0	0	0	8	0.15
			57	0	0	0	0	2	0.83	0	0	0	0	6	0.06
			60	0	0	0	0	2	0.43	0	0	0	0	3	0.02
			63	0	0	0	0	1	0.09	0	0	0	0	2	0.01
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 8: Tranquillity Sites, $L_{Aeq,\ 8\ Hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	Without Airspace Change	L_{Aeq8hr}	45	1	0.32	6	5.09	6	7.09	0	0	0	0	30	0.67
			48	1	0.08	5	3.77	4	5.3	0	0	0	0	17	0.36
			51	0	0	5	1.3	4	3.81	0	0	0	0	10	0.22
			54	0	0	2	0.57	3	2.05	0	0	0	0	8	0.17
			57	0	0	0	0	3	0.99	0	0	0	0	6	0.08
			60	0	0	0	0	2	0.54	0	0	0	0	3	0.02
			63	0	0	0	0	1	0.17	0	0	0	0	2	0.02
			66	0	0	0	0	0	0	0	0	0	0	1	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 9: Tranquillity Sites, N65 Daytime Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2022 (GLA) 2023 (EDI)	Without Airspace Change	N65 (Day)	5	3	0.45	8	6.5	6	9.4	0	0	0	0	41	1.09
			10	1	0.29	7	5.91	5	7.36	0	0	0	0	32	0.65
			20	1	0.24	6	5.06	5	6.59	0	0	0	0	24	0.44
			50	1	0.02	5	1.67	5	3.57	0	0	0	0	14	0.29
			100	0	0	2	1.02	4	2.33	0	0	0	0	7	0.17
			200	0	0	0	0	0	0	0	0	0	0	1	0

Table 10: Tranquillity Sites, N65 Daytime Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	N65 (Day)	5	3	0.74	8	6.66	6	10.83	0	0	0	0	46	1.2
			10	2	0.37	7	6.11	5	7.61	0	0	0	0	34	0.76
			20	1	0.26	6	5.43	5	6.99	0	0	0	0	26	0.44
			50	1	0.05	5	4.16	5	5.56	0	0	0	0	21	0.37
			100	1	0	4	1.29	4	3.01	0	0	0	0	9	0.24
			200	0	0	0	0	0	0	0	0	0	0	1	0

Table 11: Tranquillity Sites, N65 Daytime Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	Without Airspace Change	N65 (Day)	5	3	0.83	8	6.74	8	11.29	0	0	0	0	47	1.21
			10	2	0.4	7	6.23	6	8.21	0	0	0	0	35	0.87
			20	1	0.27	6	5.64	5	7.18	0	0	0	0	28	0.48
			50	1	0.09	5	4.48	5	6.01	0	0	0	0	22	0.4
			100	1	0.01	4	1.41	4	3.21	0	0	0	0	11	0.25
			200	0	0	2	0.3	4	1.79	0	0	0	0	6	0.15

Table 12: Tranquillity Sites, N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2022 (GLA) 2023 (EDI)	Without Airspace Change	N60 (Night)	5	3	0.91	7	5.82	6	8.5	0	0	0	0	41	1.15
			10	2	0.27	6	2.49	6	5.31	0	0	0	0	24	0.67
			20	0	0	2	1.82	5	3.07	0	0	0	0	9	0.3
			50	0	0	0	0	0	0	0	0	0	0	1	0

Table 13: Tranquillity Sites, N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	N60 (Night)	5	4	1.18	7	6.15	6	8.87	0	0	0	0	42	1.17
			10	1	0.32	6	2.63	6	5.79	0	0	0	0	27	0.69
			20	1	0.11	2	1.94	5	4.28	0	0	0	0	11	0.41
			50	0	0	0	0	0	0	0	0	0	0	1	0

Table 14: Tranquillity Sites, N60 Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	Without Airspace Change	N60 (Night)	5	4	1.33	7	6.36	6	9.11	0	0	0	0	42	1.35
			10	3	0.42	7	2.95	6	6.54	0	0	0	0	31	0.77
			20	1	0.17	2	1.99	5	4.82	0	0	0	0	12	0.48
			50	0	0	0	0	0	0	0	0	0	0	1	0

Table 15: Tranquillity Sites, Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2022 (GLA) 2023 (EDI)	Without Airspace Change	Overflights Night	5	1	0.06	5	3.56	8	8.88	0	0	0	0	53	1.96
			10	0	0	3	0.65	2	0.54	0	0	0	0	7	0.43
			20	0	0	1	0.45	2	0.22	0	0	0	0	4	0.2

Table 16: Tranquillity Sites, Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	Without Airspace Change	Overflights Night	5	2	1.04	5	4.39	10	12.52	0	0	0	0	65	2.26
			10	0	0	4	0.73	2	0.6	0	0	0	0	11	0.46
			20	0	0	1	0.49	2	0.31	0	0	0	0	4	0.28

Table 17: Tranquillity Sites, Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	Without Airspace Change	Overflights Night	5	2	1.04	5	5.15	15	18.95	0	0	0	0	79	2.83
			10	0	0	4	0.77	3	0.66	0	0	0	0	13	0.48
			20	0	0	1	0.55	2	0.42	0	0	0	0	5	0.35

"Without Airspace Change" Biodiversity Tables for $L_{Aeq, 16hr}$, $L_{Aeq, 8hr}$, N65, N60 and Day/Night Overflight contours

95. Data relating to biodiversity site within the $L_{Aeq, 16hr}$, $L_{Aeq, 8hr}$, N65, N60 and Day/Night overflight contours for the "without airspace change" baseline are provided below. The overflight Tables include additional data not shown in the main CAF2 report (relating to Local nature Reserves, National Nature Reserves and Site of Special Scientific Interest SSSI).

Table 18: Biodiversity Sites in Relation to $L_{Aeq, 16hr}$, Daytime Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2022 (GLA) 2023 (EDI)	Without Airspace Change	$L_{Aeq16hr}$	51	4	0.49	0	0	1	3.32	0	0	4	9.88	2	3.81
			54	4	0.22	0	0	1	0.91	0	0	4	2.53	2	1.08
			57	1	0.05	0	0	1	0.24	0	0	2	0.32	2	0.32
			60	1	0.05	0	0	0	0	0	0	1	0.05	1	0.05
			63	1	0.02	0	0	0	0	0	0	1	0.03	1	0.03
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 19: Biodiversity Sites in Relation to $L_{Aeq, 16hr}$, Daytime Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	$L_{Aeq16hr}$	51	4	0.61	0	0	1	3.98	0	0	4	16.94	2	4.55
			54	4	0.34	0	0	1	2.02	0	0	4	5.47	2	2.38
			57	3	0.09	0	0	1	0.54	0	0	3	0.9	2	0.67
			60	1	0.05	0	0	0	0	0	0	1	0.07	1	0.07
			63	1	0.02	0	0	0	0	0	0	1	0.04	1	0.04
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 20: Biodiversity Sites in Relation to $L_{Aeq, 16hr}$, Daytime Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	Without Airspace Change	$L_{Aeq16hr}$	51	5	0.74	0	0	1	4.25	0	0	4	21.96	2	4.83
			54	4	0.4	0	0	1	2.91	0	0	4	7.68	2	3.31
			57	3	0.11	0	0	1	0.71	0	0	3	1.49	2	0.85
			60	1	0.05	0	0	1	0.02	0	0	2	0.09	2	0.09
			63	1	0.03	0	0	0	0	0	0	1	0.04	1	0.04
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 21: Biodiversity Sites in Relation to $L_{Aeq, 8hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2022 (GLA) 2023 (EDI)	Without Airspace Change	L_{Aeq8hr}	45	4	0.63	0	0	2	3.46	0	0	5	17.73	3	4.02
			48	4	0.37	0	0	1	1.54	0	0	4	7.76	2	2.01
			51	3	0.1	0	0	1	0.79	0	0	4	2.51	2	0.95
			54	1	0.05	0	0	1	0.26	0	0	2	0.34	2	0.34
			57	1	0.05	0	0	0	0	0	0	1	0.05	1	0.05
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 22: Biodiversity Sites in Relation to $L_{Aeq, 8hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	L_{Aeq8hr}	45	5	1.06	0	0	2	4.17	0	0	5	24.73	4	4.75
			48	4	0.44	0	0	1	2.75	0	0	4	10.02	2	3.3
			51	3	0.14	0	0	1	0.96	0	0	4	3.49	2	1.23
			54	1	0.05	0	0	1	0.41	0	0	3	0.57	2	0.53
			57	1	0.05	0	0	0	0	0	0	1	0.06	1	0.06
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 23: Biodiversity Sites in Relation to $L_{Aeq, 8hr}$, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	Without Airspace Change	L_{Aeq8hr}	45	5	1.41	0	0	2	4.45	0	0	5	30.62	5	5.24
			48	4	0.51	0	0	1	3.37	0	0	4	12.88	2	3.93
			51	4	0.18	0	0	1	1.21	0	0	4	4.85	2	1.51
			54	1	0.05	0	0	1	0.57	0	0	3	1.02	2	0.68
			57	1	0.05	0	0	0	0	0	0	1	0.06	1	0.06
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 24: Biodiversity Sites in Relation to N65, Daytime Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2022 (GLA) 2023 (EDI)	Without Airspace Change	N65 (Day)	5	5	1.55	0	0	4	5.91	0	0	7	52.09	17	7.27
			10	5	1.19	0	0	2	5.22	0	0	5	39.28	7	6.25
			20	5	0.83	0	0	1	4.52	0	0	4	26.22	4	5.15
			50	4	0.4	0	0	1	1.39	0	0	4	9.12	2	1.85
			100	2	0.07	0	0	1	1.01	0	0	4	3.04	2	1.08
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 25: Biodiversity Sites in Relation to N65, Daytime Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	Without Airspace Change	N65 (Day)	5	5	1.64	0	0	4	6.29	0	0	7	57.19	18	8.45
			10	5	1.3	0	0	2	5.42	0	0	5	44.41	9	6.56
			20	5	0.9	0	0	1	4.8	0	0	4	32.1	5	5.73
			50	5	0.56	0	0	1	3.81	0	0	4	16.49	2	4.38
			100	4	0.2	0	0	1	1.22	0	0	4	7.49	2	1.39
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 26: Biodiversity Sites in Relation to N65, Daytime Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	Without Airspace Change	N65 (Day)	5	5	1.71	0	0	4	6.51	0	0	7	61.35	19	8.85
			10	5	1.39	0	0	3	5.68	0	0	6	48.22	14	6.95
			20	5	0.98	0	0	1	4.99	0	0	4	35.71	6	5.93
			50	5	0.65	0	0	1	4.1	0	0	4	19.93	3	4.72
			100	4	0.29	0	0	1	1.3	0	0	4	8.35	2	1.54
			200	1	0.02	0	0	1	0.3	0	0	2	0.31	2	0.31

Table 27: Biodiversity Sites in Relation to N60, Night-Time Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2022 (GLA) 2023 (EDI)	Without Airspace Change	N60 (Night)	5	5	2.29	0	0	2	5.31	0	0	5	46.35	12	7.29
			10	5	1.42	0	0	1	1.98	0	0	4	24.61	4	2.75
			20	2	0.21	0	0	1	1.78	0	0	4	19.18	2	2.09
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 28: Biodiversity Sites in Relation to N60, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	Without Airspace Change	N60 (Night)	5	5	2.3	0	0	2	5.69	0	0	5	55.97	13	8.2
			10	5	1.66	0	0	2	2.08	0	0	5	26.24	5	2.93
			20	3	0.47	0	0	1	1.9	0	0	4	21.4	2	2.43
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 29: Biodiversity Sites in Relation to N60, Night-Time Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	Without Airspace Change	N60 (Night)	5	5	2.31	0	0	2	5.9	0	0	5	63.45	13	8.81
			10	5	1.95	0	0	2	2.4	0	0	5	27.94	5	3.26
			20	3	0.88	0	0	1	1.95	0	0	4	22.78	3	2.51
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 30: Biodiversity Sites in Relation to Overflight Day, Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2022 (GLA) 2023 (EDI)	Without Airspace Change	Overflights Day	5	9	4.99	1	1.51	16	13.9	8	19.77	19	243.46	85	47.19
			10	8	3.78	1	0.55	13	8.01	2	0.38	15	186.8	44	13.33
			20	6	2.32	0	0	7	5.9	0	0	9	101.11	24	7.61
			50	3	1.4	0	0	1	0.62	0	0	3	17.08	3	0.94
			100	0	0	0	0	1	0.38	0	0	3	8.62	1	0.38

Table 31: Biodiversity Sites in Relation to Overflight Day, Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	Overflights Day	5	17	6.08	1	1.49	17	16.51	9	30	21	277.21	101	64.05
			10	9	4.22	1	0.05	14	10.32	7	2.51	17	204.68	63	19.18
			20	8	2.71	0	0	11	6.89	0	0	13	121.24	32	10.01
			50	3	1.62	0	0	1	2.28	0	0	3	26.8	4	2.62
			100	3	0.24	0	0	1	0.51	0	0	3	12.22	2	0.53

Table 32: Biodiversity Sites in Relation to Overflight Day, Cluster Wide "Without Airspace Change" Baseline, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	Without Airspace Change	Overflights Day	5	22	6.95	1	1.51	17	17.73	9	32.09	22	294.9	109	74.09
			10	9	4.39	1	0.34	16	12	8	13.59	19	220.41	73	35.25
			20	8	2.89	0	0	11	7.23	0	0	13	143.6	35	10.75
			50	3	1.62	0	0	1	2.63	0	0	3	36.04	6	3.02
			100	3	0.67	0	0	1	0.57	0	0	3	14.36	2	0.87
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 33: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, Current Day

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2022 (GLA) 2023 (EDI)	Without Airspace Change	Overflights Night	5	4	1.65	0	0	4	3.67	0	0	6	75.89	11	4.4
			10	3	0.73	0	0	1	0.64	0	0	3	18.55	2	0.91
			20	0	0	0	0	1	0.45	0	0	3	9.99	1	0.45

Table 34: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	Without Airspace Change	Overflights Night	5	4	1.68	0	0	4	4.41	0	0	6	87.22	15	5.16
			10	3	1.52	0	0	1	0.66	0	0	3	20.46	3	0.97
			20	0	0	0	0	1	0.49	0	0	3	11.4	1	0.49

Table 35: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "Without Airspace Change" Baseline, 2036

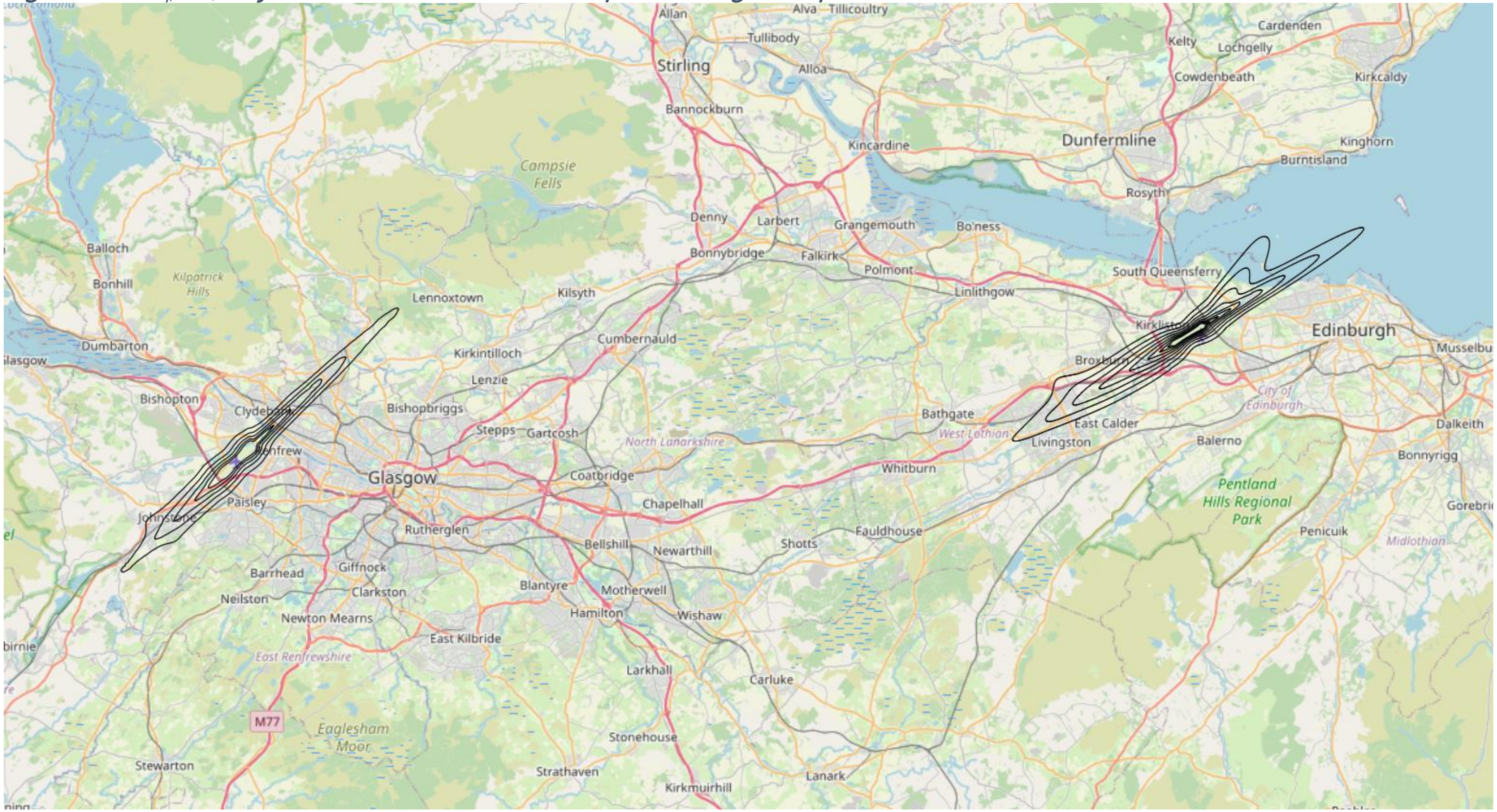
Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	Without Airspace Change	Overflights Night	5	4	1.7	0	0	6	5.27	0	0	8	107.81	22	6.67
			10	3	1.57	0	0	1	0.69	0	0	3	27.07	3	1.02
			20	1	0.46	0	0	1	0.55	0	0	3	13.58	2	0.56

Annex E: Additional Figures and Tables for Cluster-Wide “With Airspace Change”

L_{Aeq} Contours For Cluster-Wide “With Airspace Change”

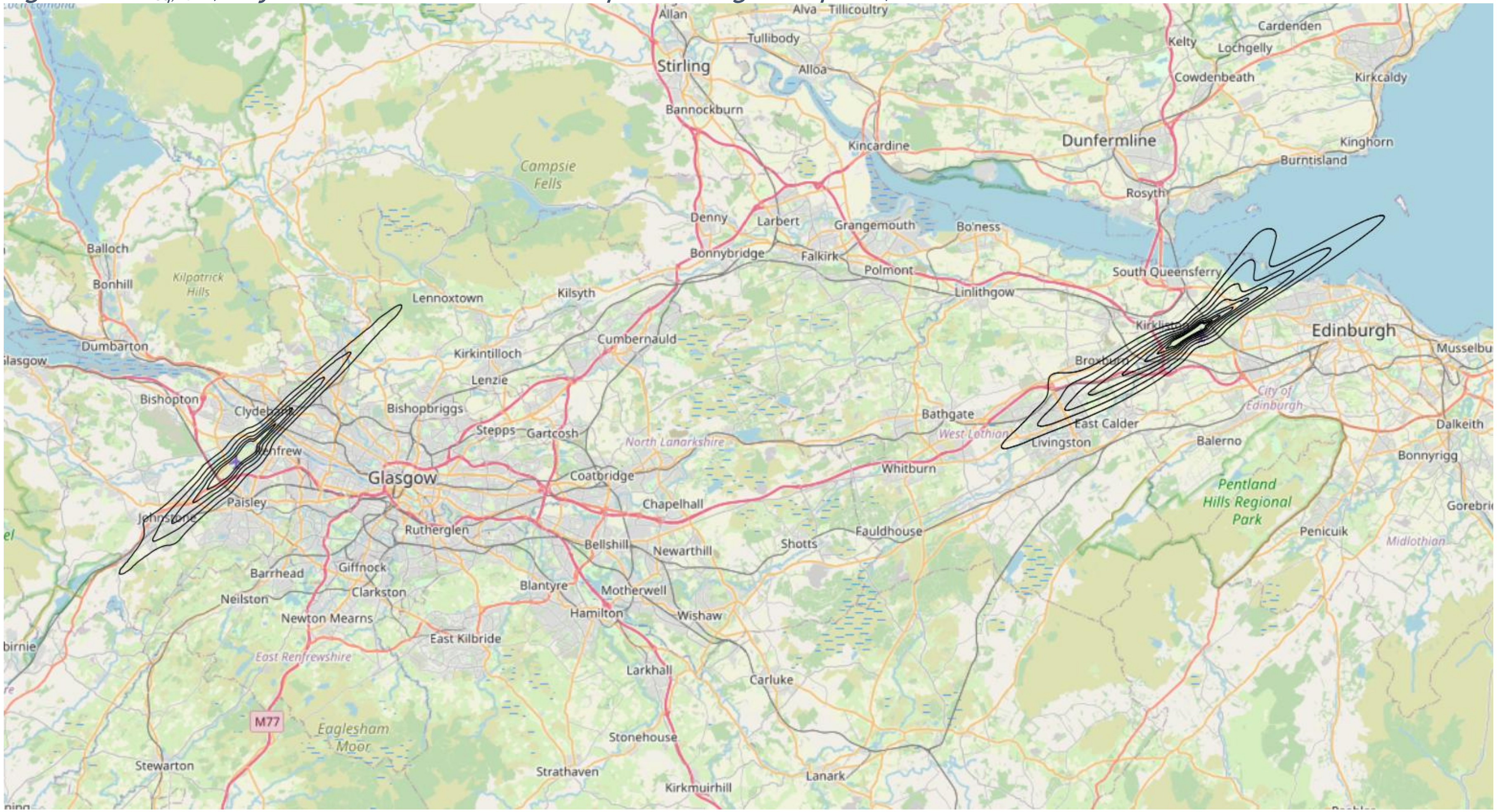
96. The main document presents data tables for L_{Aeq} Contours. The Figures below present the contours themselves. Note that these necessary large scale to cover both airports. For detailed maps showing more local detail seethe individual ACPs covering the area of interest.

Figure 37: $L_{Aeq,\ 16\ Hr}$, Daytime Cluster-Wide "With Airspace Change" Proposal 2027



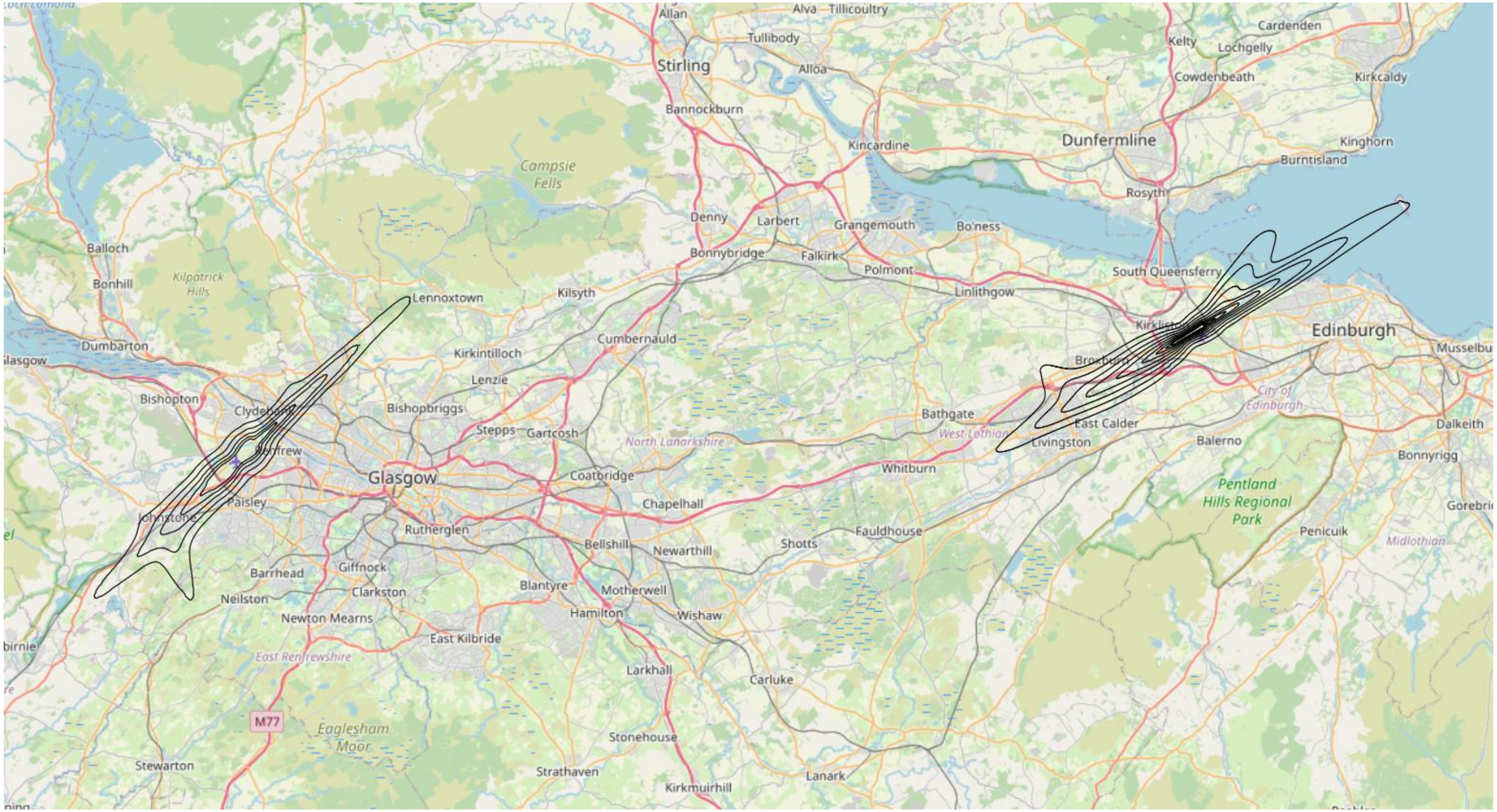
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 51dBA $L_{Aeq,\ 16\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 38: $L_{Aeq,\ 16\ Hr}$, Daytime Cluster-Wide "With Airspace Change" Proposal, 2036



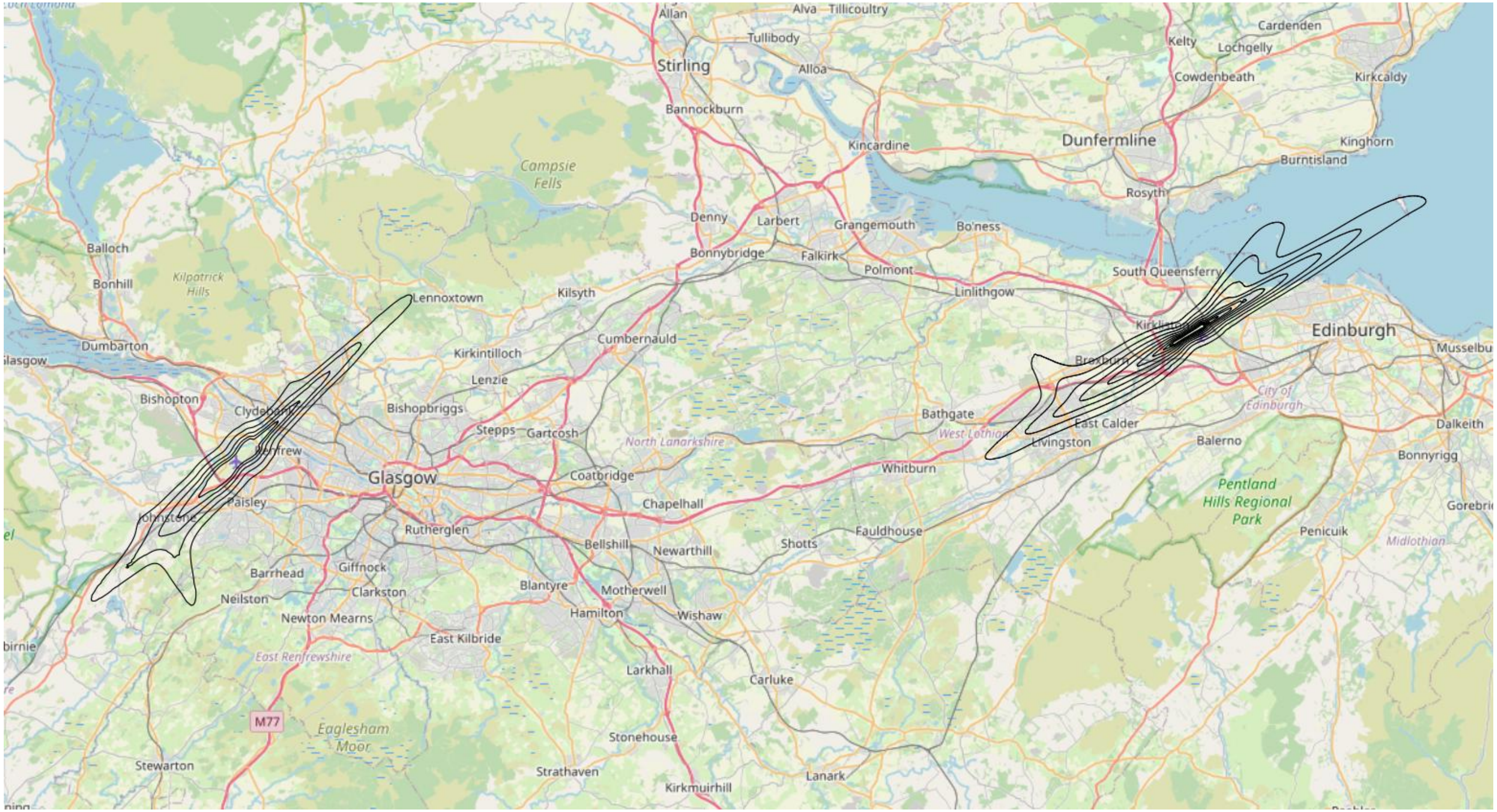
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 51dBA $L_{Aeq,\ 16\ Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 39: $L_{Aeq, 8 Hr}$, Night-Time Cluster-Wide "With Airspace Change" Proposal, 2027



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 45dBA $L_{Aeq, 8 Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 40: $L_{Aeq, 8 Hr}$, Night-Time Cluster-Wide "With Airspace Change" Proposal 2036

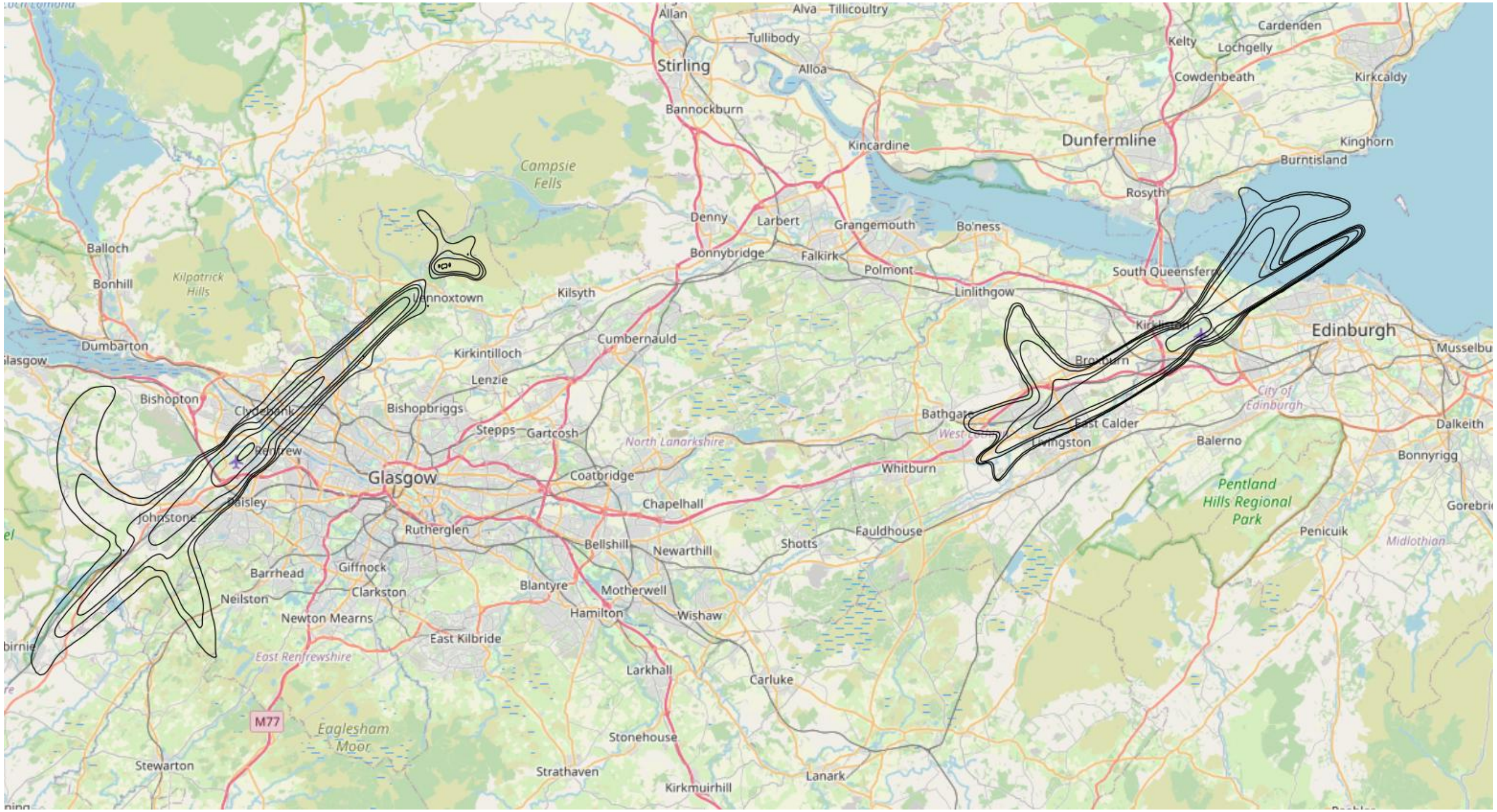


This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 45dBA $L_{Aeq, 8 Hr}$. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Nx Contours for Cluster-Wide “With Airspace Change”

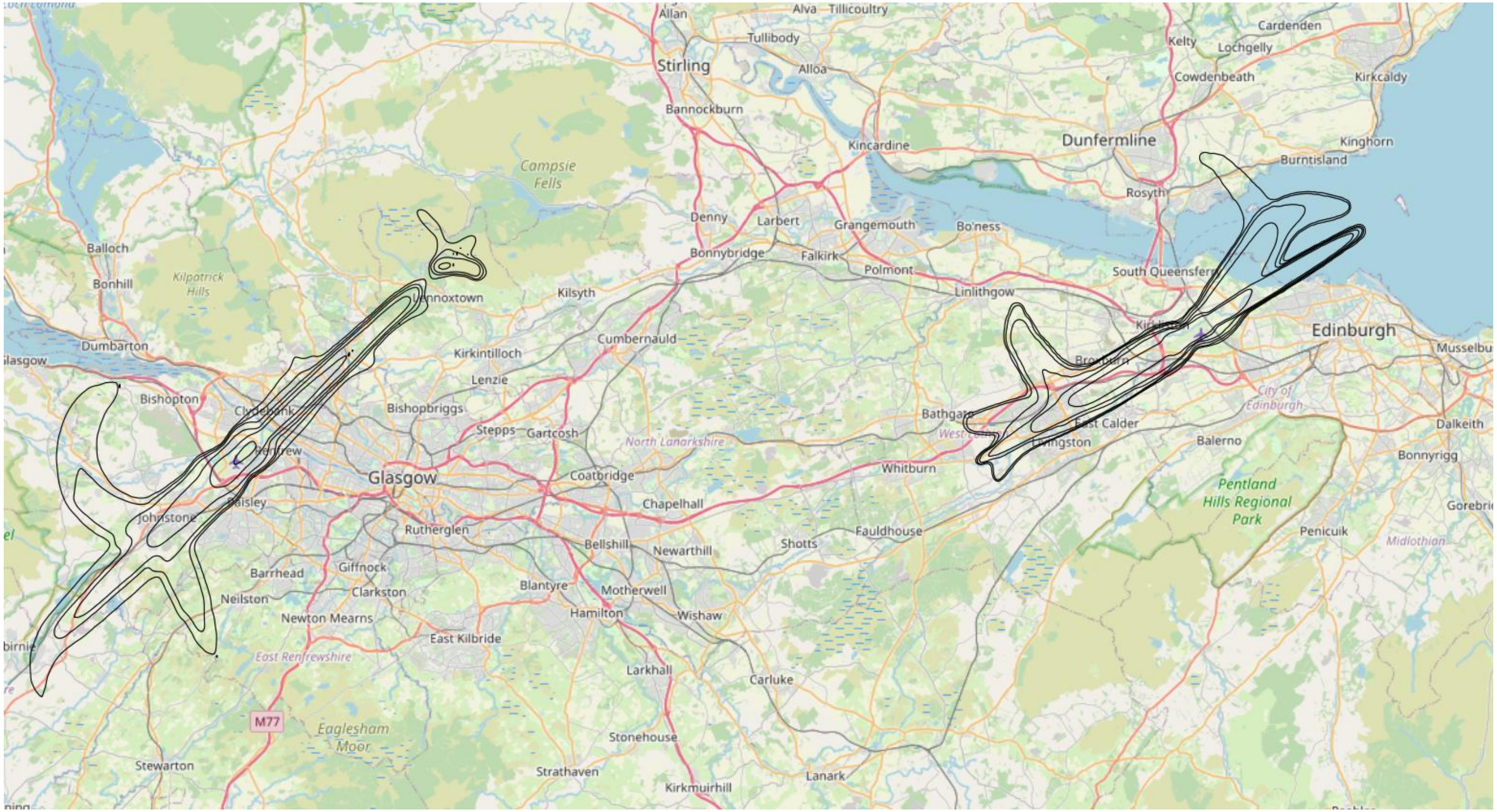
97. Nx contours for Cluster-Wide “With Airspace Change” are provided below.

Figure 41: N65,Daytime Cluster-Wide "With Airspace Change" Proposal, 2027



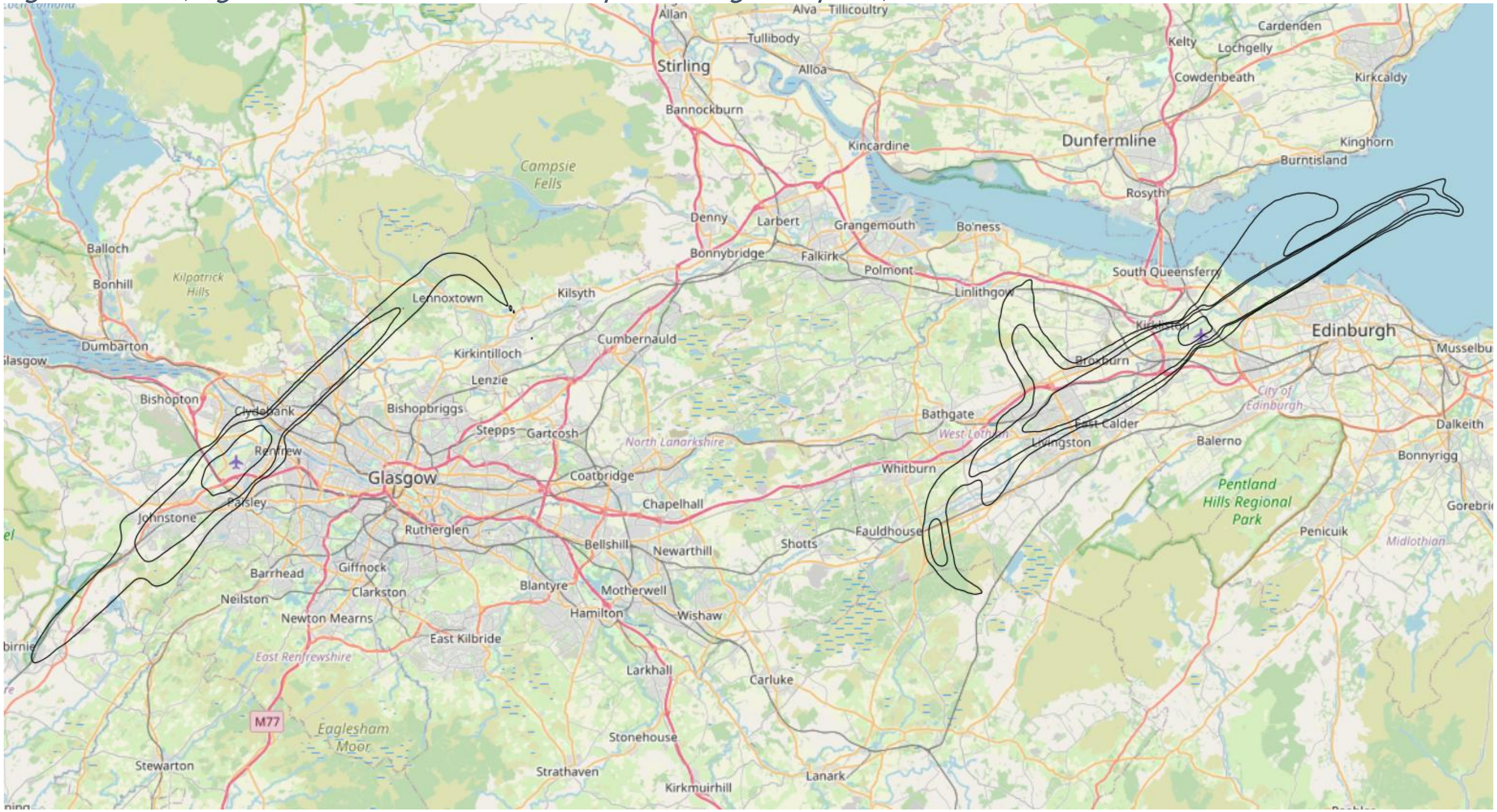
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 42: N65 ,Daytime Cluster-Wide "With Airspace Change" Proposal, 2036



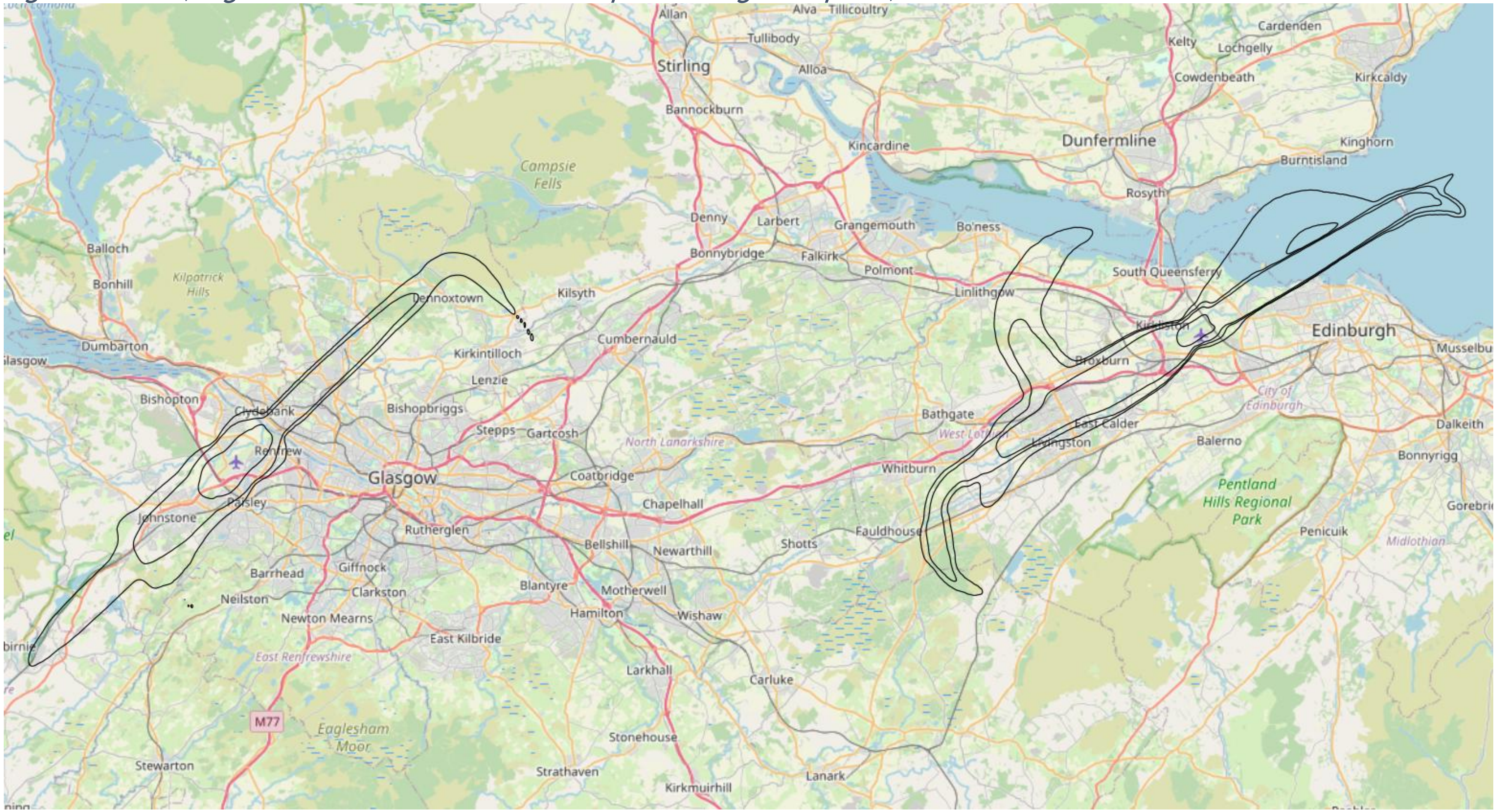
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 43: N60 ,Night-Time Cluster-Wide "With Airspace Change" Proposal, 2027



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 44: N60 , Night-Time Cluster-Wide "With Airspace Change" Proposal, 2036

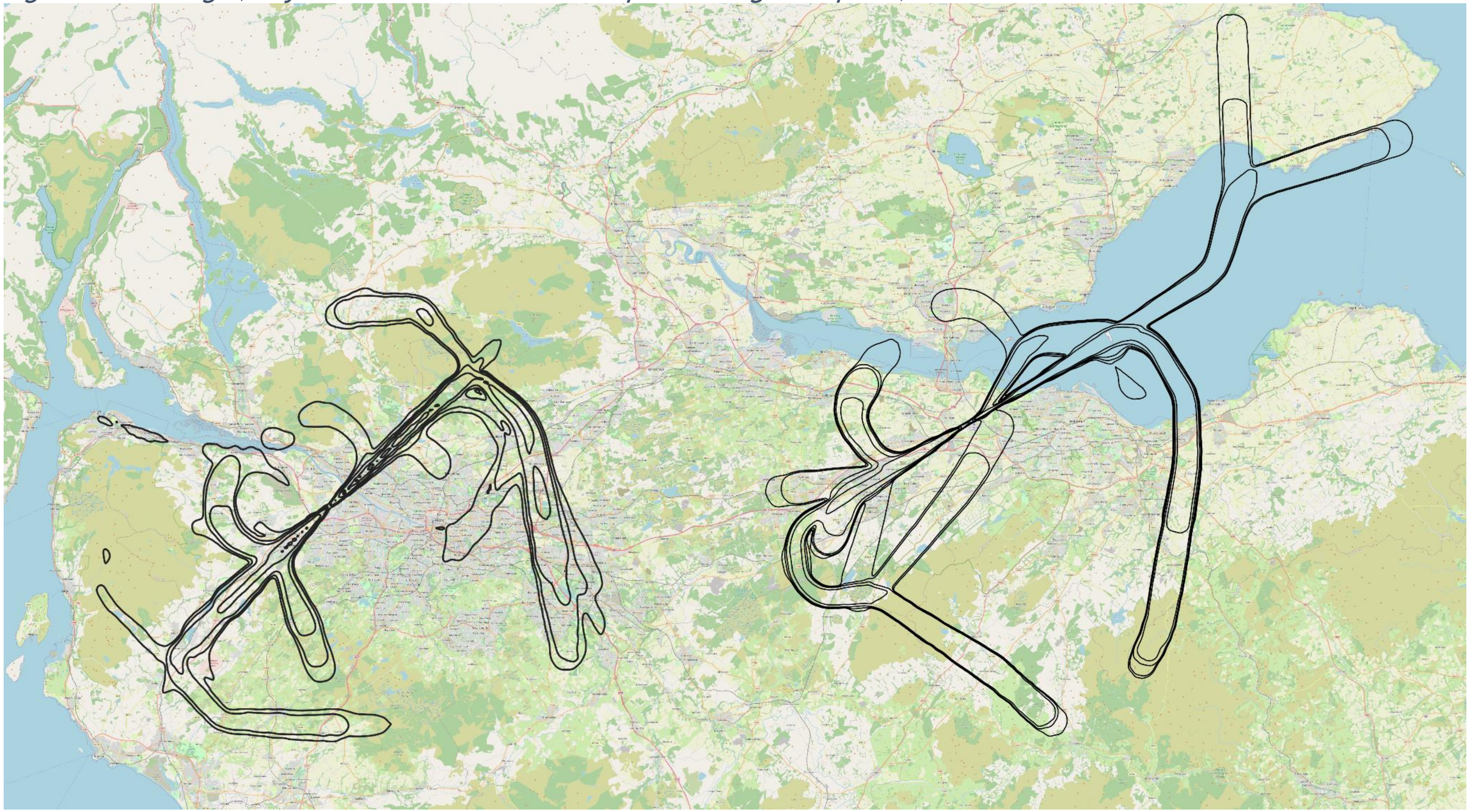


This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Overflight Contours for Cluster-Wide “With Airspace Change”

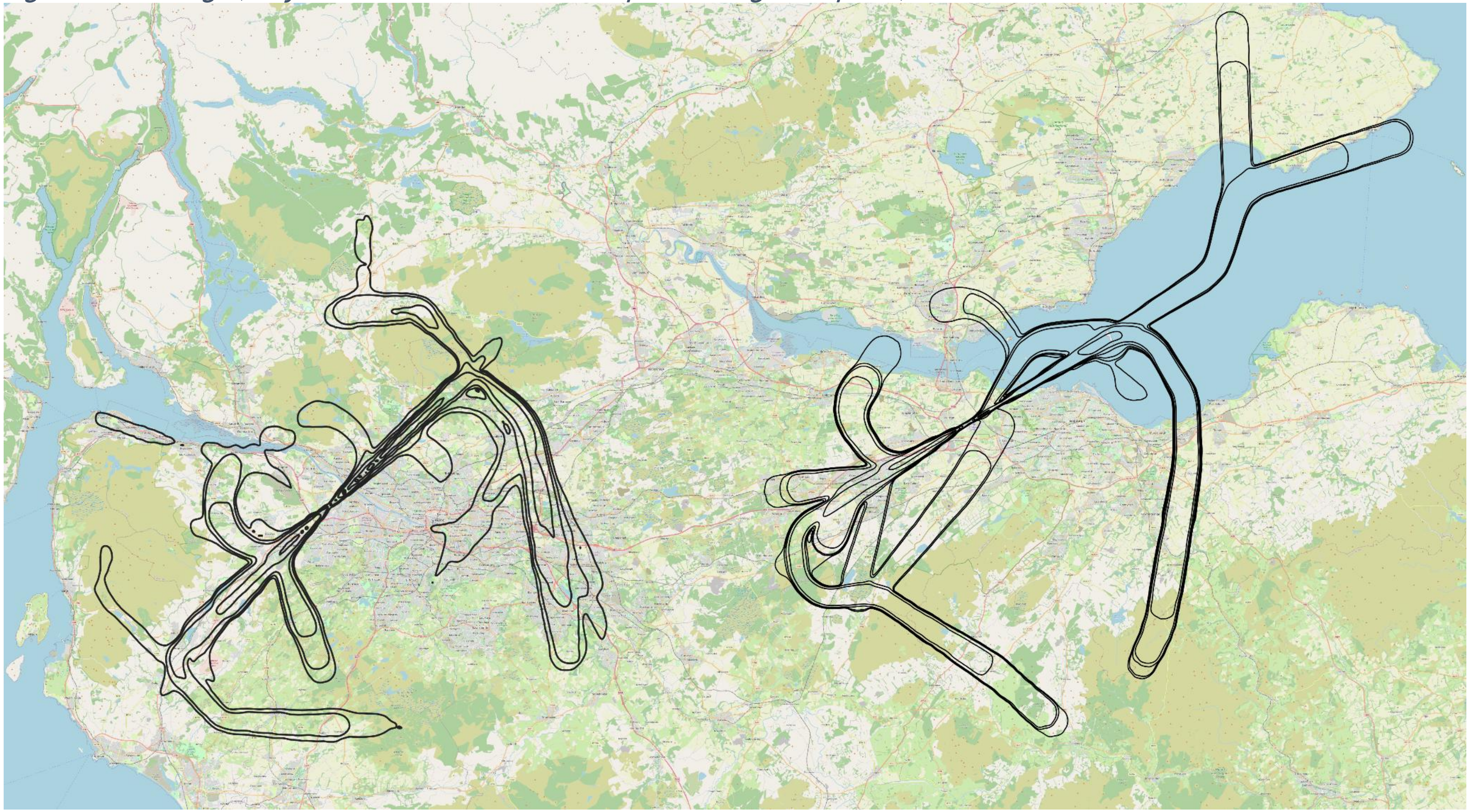
98. Overflight contours for Cluster-Wide “With Airspace Change” are provided below.

Figure 45: Overflight, Daytime Cluster-Wide "With Airspace Change" Proposal, 2027



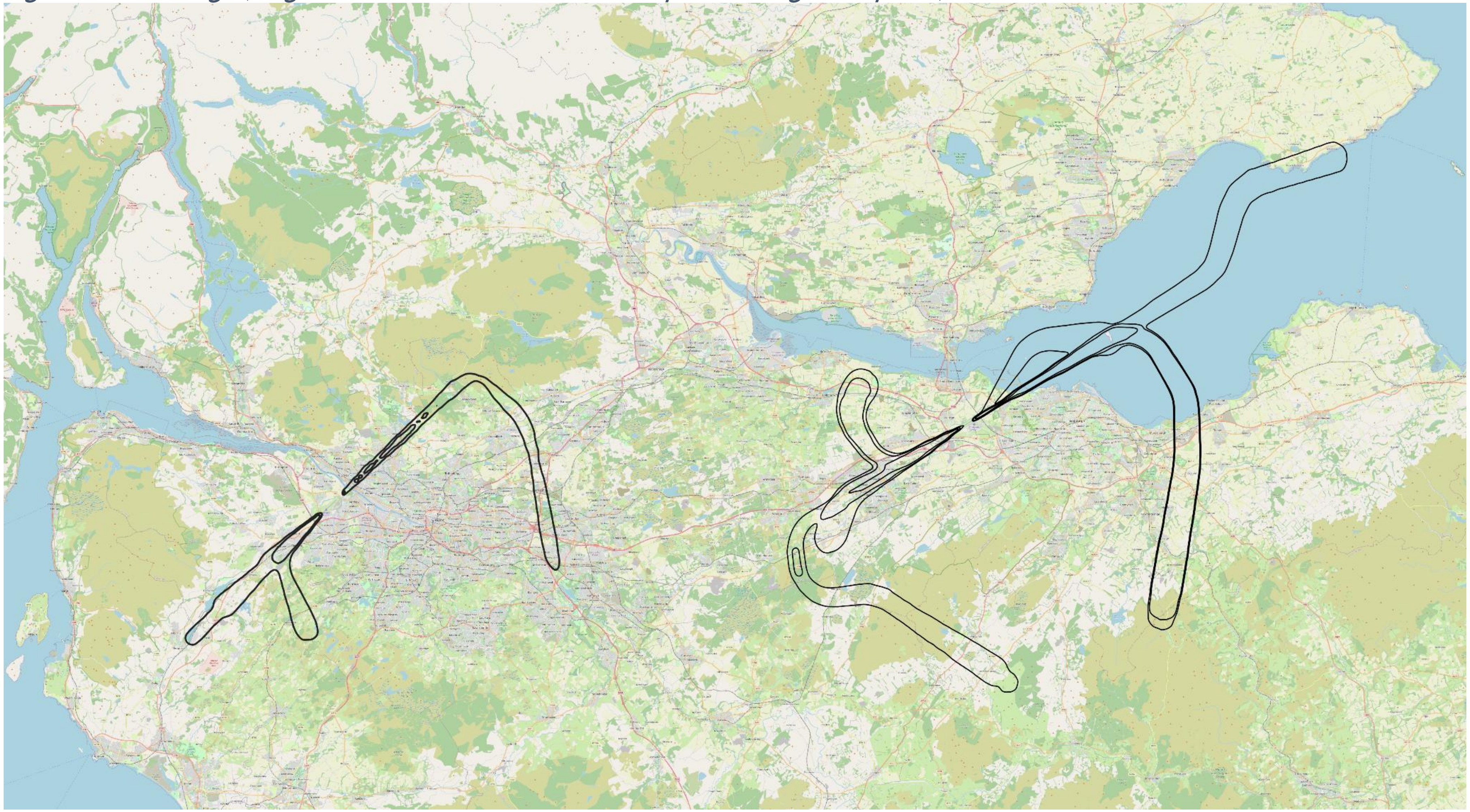
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 46: Overflight, Daytime Cluster-Wide "With Airspace Change" Proposal, 2036



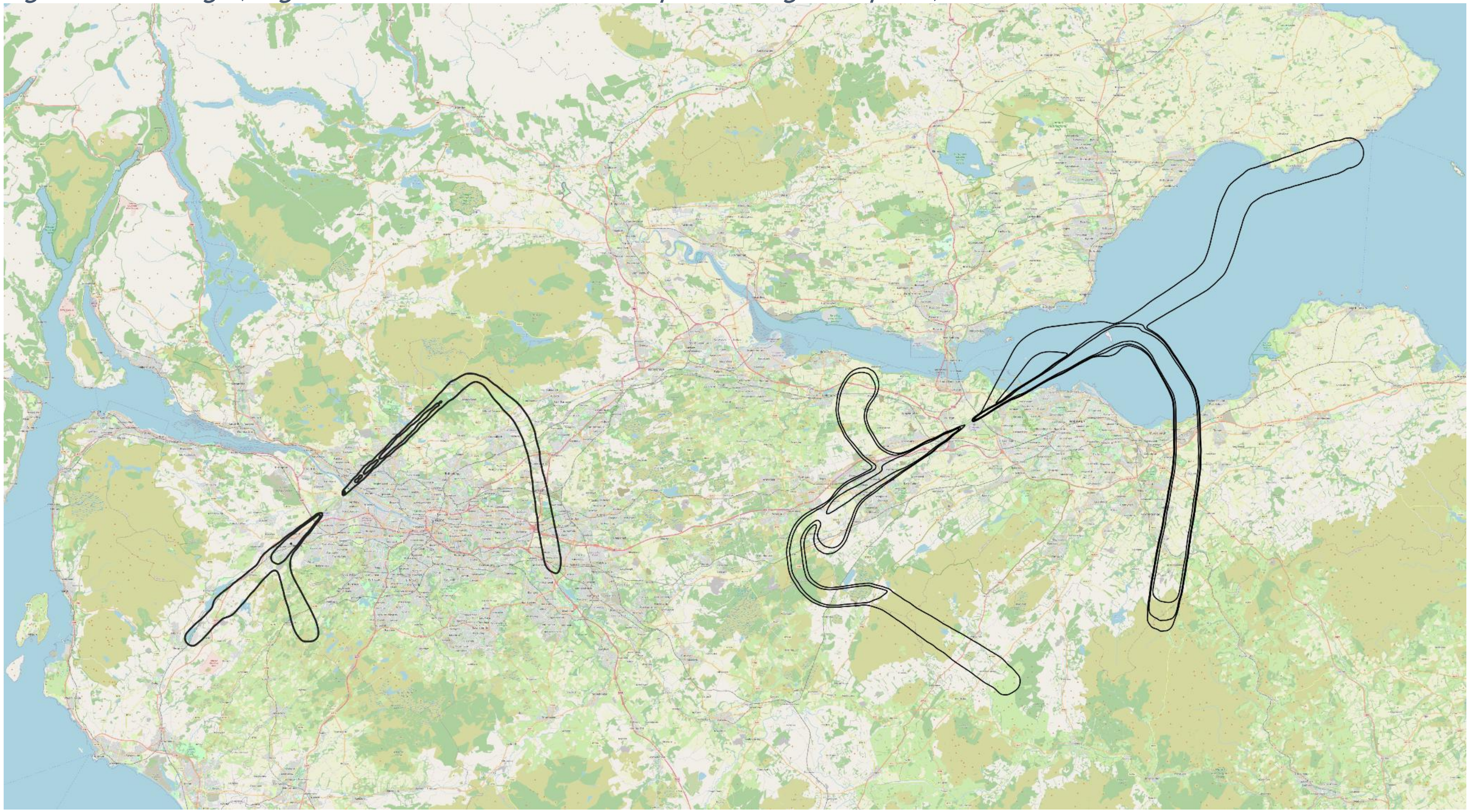
This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 47: Overflight, Night-Time Cluster-Wide "With Airspace Change" Proposal, 2027



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Figure 48: Overflight, Night-Time Cluster-Wide "With Airspace Change" Proposal, 2036



This map shows the distance between contours at Edinburgh and Glasgow Airports. The lowest (outermost) contour shown is 5 events per day. For more detailed views of contours around Glasgow and Edinburgh see their individual ACPs.

Population and Noise Sensitive Sites in relation to L_{Aeq}, Nx and Overflight contours for Cluster-Wide "With Airspace Change"

99. Tables showing population and noise sensitive sites in relation to Nx and Overflight contours for Cluster-Wide "With Airspace Change" are provided below.

Table 36: N65, Daytime Cluster-Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Area (km²)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2027	With Airspace Change	N65 (Day)	5	307.08	113,200	242,100	83	1	44	89	723
			10	226.48	94,800	204,700	74	1	33	69	509
			20	157.07	74,500	161,000	65	1	28	49	364
			50	95.55	44,300	95,800	29	1	18	30	239
			100	46.5	13,200	28,700	8	1	5	7	142
			200	3.99	<100	100	0	0	0	0	0

Table 37: N65, Daytime Cluster-Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Area (km²)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2036	With Airspace Change	N65 (Day)	5	323.01	115,400	246,800	83	1	45	90	775
			10	235.04	98,000	211,100	77	1	33	70	522
			20	167.7	77,300	167,100	66	1	28	52	394
			50	103.62	47,800	103,400	32	1	19	32	243
			100	52.31	17,200	37,700	8	1	7	9	148
			200	17.78	2,000	4,200	0	0	0	0	51

Table 38: N60, Night-Time Cluster-Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Area (km²)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2027	With Airspace Change	N60 (Night)	5	298.99	117,700	250,800	84	1	39	90	678
			10	159.02	80,500	173,100	65	1	29	53	349
			20	73.72	21,800	47,900	9	1	6	2	167
			50	2.76	<100	<100	0	0	0	0	1

Table 39: N60, Night-Time Cluster-Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Area (km²)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2036	With Airspace Change	N60 (Night)	5	337.06	122,400	261,200	86	1	39	91	724
			10	182.29	91,600	197,300	70	1	32	56	376
			20	86.88	27,300	59,900	16	1	7	4	209
			50	3.31	<100	100	0	0	0	0	6

Table 40: Overflight Daytime, Cluster-Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Area (km^2)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2027	With Airspace Change	Overflights Day	5	1347.08	335,700	720,900	255	7	109	267	2,870
			10	889.51	174,200	382,500	144	2	74	151	1,977
			20	541.93	98,000	215,800	67	1	44	66	611
			50	234.43	50,800	111,000	26	1	15	24	263
			100	76.89	16,300	36,000	6	1	6	2	65

Table 41: Overflight Daytime, Cluster-Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Area (km^2)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2036	With Airspace Change	Overflights Day	5	1408.66	359,000	769,100	272	7	114	306	3,087
			10	991.8	192,100	421,800	157	2	79	161	2,134
			20	609.03	115,900	255,100	82	1	47	77	1,032
			50	321.18	59,400	130,100	31	1	18	27	330
			100	112.29	21,300	47,200	9	1	9	3	109
			200	6.97	400	1,000	0	0	0	0	6

Table 42: Overflight Night-Time, Cluster-Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Area (km^2)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2027	With Airspace Change	Overflights Night	5	462.66	75,500	165,000	43	1	28	33	719
			10	157.36	37,000	80,500	18	1	14	11	199
			20	23.52	4,500	10,100	3	0	3	1	10

Table 43: Overflight Night-Time, Cluster-Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Area (km^2)	Total Households	Total Population	Number of Schools	Number of Hospitals	Number of Carehomes	Number of Places of Worship	Number of Listed Buildings
2036	With Airspace Change	Overflights Night	5	492.09	80,200	175,800	50	1	28	36	926
			10	202.29	45,300	99,000	24	1	15	17	236
			20	99.57	17,300	38,300	7	1	7	1	103

Tranquillity Sites in relation to $L_{Aeq, 8 Hr}$, Nx and Overflight contours for Cluster-Wide "With Airspace Change"

100. Tables showing tranquillity sites in relation to L_{Aeq}, Nx and Overflight contours for Cluster-Wide "With Airspace Change" are provided below.

Table 44: Tranquillity Sites in Relation to $L_{Aeq, 8 Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison L_{Aeq8hr}	2027	45	0	-0.05	0	1.19	0	0.33	0	0	0	0	0	0.14
			48	0	-0.01	0	0.13	0	0.39	0	0	0	0	0	-0.01
			51	0	0	0	-0.09	0	0.11	0	0	0	0	0	0
			54	0	0	-1	-0.02	0	-0.01	0	0	0	0	0	0
			57	0	0	0	0	1	-0.01	0	0	0	0	0	0
			60	0	0	0	0	0	-0.02	0	0	0	0	0	0
			63	0	0	0	0	0	-0.03	0	0	0	0	0	0.01
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 45: Tranquillity Sites in Relation to $L_{Aeq, 8 Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison L_{Aeq8hr}	2036	45	1	0.01	0	1.19	0	0.34	0	0	0	0	-4	0.09
			48	0	0	0	0.65	0	0.4	0	0	0	0	-2	-0.06
			51	0	0	0	-0.19	0	0.28	0	0	0	0	-1	0
			54	0	0	0	-0.02	0	-0.02	0	0	0	0	0	0
			57	0	0	0	0	0	-0.01	0	0	0	0	0	0
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	-0.01	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 46: Tranquillity Sites in Relation to $L_{Aeq, 8 Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	With Airspace Change	L_{Aeq8hr}	45	1	0.22	6	5.94	6	6.91	0	0	0	0	26	0.62
			48	1	0.03	5	3.25	4	5.29	0	0	0	0	15	0.29
			51	0	0	5	0.94	4	3.38	0	0	0	0	9	0.2
			54	0	0	1	0.39	3	1.67	0	0	0	0	8	0.15
			57	0	0	0	0	3	0.82	0	0	0	0	6	0.06
			60	0	0	0	0	2	0.41	0	0	0	0	3	0.02
			63	0	0	0	0	1	0.06	0	0	0	0	2	0.02
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 47: Tranquillity Sites in Relation to $L_{Aeq, 8 Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (dB)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	With Airspace Change	L_{Aeq8hr}	45	2	0.33	6	6.28	6	7.43	0	0	0	0	26	0.76
			48	1	0.08	5	4.42	4	5.7	0	0	0	0	15	0.3
			51	0	0	5	1.11	4	4.09	0	0	0	0	9	0.22
			54	0	0	2	0.55	3	2.03	0	0	0	0	8	0.17
			57	0	0	0	0	3	0.98	0	0	0	0	6	0.08
			60	0	0	0	0	2	0.54	0	0	0	0	3	0.02
			63	0	0	0	0	1	0.16	0	0	0	0	2	0.02
			66	0	0	0	0	0	0	0	0	0	0	1	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 48: Tranquillity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N65 (Day)	2027	5	0	0.84	0	0.45	1	-1.34	0	0	0	0	3	-0.06
			10	0	-0.07	-1	0.71	0	0.49	0	0	0	0	3	-0.12
			20	0	-0.01	0	0.8	0	0.35	0	0	0	0	0	0
			50	0	0	0	0.77	0	0.4	0	0	0	0	-4	-0.03
			100	0	0	0	-0.13	0	0.03	0	0	0	0	0	0
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 49: Tranquillity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N65 (Day)	2036	5	0	0.88	0	0.41	0	0.45	0	0	0	0	4	0.04
			10	0	-0.04	-1	0.66	-1	0.02	0	0	0	0	3	-0.16
			20	0	0	0	0.8	0	0.38	0	0	0	0	1	-0.02
			50	0	0	0	0.82	0	0.38	0	0	0	0	-2	-0.01
			100	0	0	0	-0.13	0	0.06	0	0	0	0	-1	0
			200	0	0	-1	-0.29	0	-0.06	0	0	0	0	-1	-0.09

Table 50: Tranquillity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	N65 (Day)	5	3	1.58	8	7.11	7	9.49	0	0	0	0	49	1.14
			10	2	0.3	6	6.82	5	8.1	0	0	0	0	37	0.64
			20	1	0.25	6	6.23	5	7.34	0	0	0	0	26	0.44
			50	1	0.05	5	4.93	5	5.96	0	0	0	0	17	0.34
			100	1	0	4	1.16	4	3.04	0	0	0	0	9	0.24
			200	0	0	0	0	0	0	0	0	0	0	1	0

Table 51: Tranquillity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	N65 (Day)	5	3	1.71	8	7.15	8	11.74	0	0	0	0	51	1.25
			10	2	0.36	6	6.89	5	8.23	0	0	0	0	38	0.71
			20	1	0.27	6	6.44	5	7.56	0	0	0	0	29	0.46
			50	1	0.09	5	5.3	5	6.39	0	0	0	0	20	0.39
			100	1	0.01	4	1.28	4	3.27	0	0	0	0	10	0.25
			200	0	0	1	0.01	4	1.73	0	0	0	0	5	0.06

Table 52: Tranquillity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N60 (Night)	2027	5	-1	-0.5	0	0.67	0	0.43	0	0	0	0	-3	0.1
			10	0	-0.02	0	0.06	0	-0.01	0	0	0	0	1	0.05
			20	0	0	0	-0.01	0	0.02	0	0	0	0	0	0.11
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 53: Tranquillity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N60 (Night)	2036	5	1	-0.36	0	0.57	1	1.03	0	0	0	0	4	0.1
			10	-2	-0.02	-1	0.02	0	-0.04	0	0	0	0	-1	0.02
			20	0	0.01	0	0.01	0	0.03	0	0	0	0	1	0.07
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 54: Tranquillity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	N60 (Night)	5	3	0.68	7	6.82	6	9.3	0	0	0	0	39	1.27
			10	1	0.3	6	2.69	6	5.78	0	0	0	0	28	0.74
			20	1	0.11	2	1.93	5	4.3	0	0	0	0	11	0.52
			50	0	0	0	0	0	0	0	0	0	0	1	0

Table 55: Tranquillity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	N60 (Night)	5	5	0.97	7	6.93	7	10.14	0	0	0	0	46	1.45
			10	1	0.4	6	2.97	6	6.5	0	0	0	0	30	0.79
			20	1	0.18	2	2	5	4.85	0	0	0	0	13	0.55
			50	0	0	0	0	0	0	0	0	0	0	1	0

Table 56: Tranquillity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	Overflights Day	5	10	21.72	19	7.72	24	23	1	1.66	1	0.27	183	3.99
			10	8	18.24	11	6.24	14	10.44	1	0.32	0	0	115	2.41
			20	5	5.76	5	5.07	8	5.6	0	0	0	0	77	1.89
			50	2	1.55	5	2.87	5	3.29	0	0	0	0	38	1.17
			100	1	0	2	0.59	3	1.27	0	0	0	0	22	0.73

Note that comparison tables for tranquillity sites in the daytime are in the main CAF2 report.

Table 57: Tranquillity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	Overflights Day	5	10	21.99	20	8.04	24	23.88	1	2.71	1	0.41	185	4.18
			10	8	18.82	12	6.52	17	15.54	1	0.51	0	0	130	2.74
			20	5	6.39	5	5.14	9	5.78	0	0	0	0	85	1.98
			50	3	1.99	5	4.51	6	4.46	0	0	0	0	49	1.41
			100	1	0.02	3	0.67	4	1.43	0	0	0	0	25	0.76
			200	0	0	0	0	1	0.01	0	0	0	0	3	0.27

Note that comparison tables for tranquillity sites in the daytime are in the main CAF2 report.

Table 58: Tranquillity Sites in Relation to Overflight Night-Time Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Night	2027	5	2	1.11	0	0.34	-3	-7.35	0	0	0	0	-6	-0.72
			10	2	0.18	-1	0.08	3	1.06	0	0	0	0	18	0.4
			20	0	0	0	-0.04	0	-0.06	0	0	0	0	0	0.11

Table 59: Tranquillity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Night	2036	5	2	1.34	0	-0.31	-7	-13.56	0	0	0	0	-19	-1.26
			10	2	0.27	0	0.1	3	1.29	0	0	0	0	17	0.6
			20	1	0.04	1	0.1	2	0.95	0	0	0	0	18	0.4

Table 60: Tranquillity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	With Airspace Change	Overflights Night	5	4	2.15	5	4.73	7	5.17	0	0	0	0	59	1.54
			10	2	0.18	3	0.81	5	1.66	0	0	0	0	29	0.86
			20	0	0	1	0.45	2	0.25	0	0	0	0	4	0.39

Table 61: Tranquillity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Country Parks		CQA		Gardens and Designated Landscapes		National Parks		NSA		SAMs	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	With Airspace Change	Overflights Night	5	4	2.38	5	4.84	8	5.39	0	0	0	0	60	1.57
			10	2	0.27	4	0.87	6	1.95	0	0	0	0	30	1.08
			20	1	0.04	2	0.65	4	1.37	0	0	0	0	23	0.75

Biodiversity Sites in relation to L_{Aeq}, Nx and Overflight contours for Cluster-Wide "With Airspace Change"

101. Tables showing biodiversity sites in relation to L_{Aeq}, Nx and Overflight contours for Cluster-Wide "With Airspace Change" are provided below

Table 62: Biodiversity Sites in Relation to $L_{Aeq,\ 16\ Hr}$, Day-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison $L_{Aeq16hr}$	2027	51	0	-0.05	0	0	0	0.99	0	0	0	1.56	0	1
			54	0	-0.04	0	0	0	-0.11	0	0	0	-0.1	0	-0.08
			57	-1	0	0	0	0	-0.05	0	0	0	-0.09	0	-0.04
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 63: Biodiversity Sites in Relation to $L_{Aeq,\ 16\ Hr}$, Day-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison $L_{Aeq16hr}$	2036	51	-1	-0.11	0	0	0	1.04	0	0	0	3.35	1	1.04
			54	0	-0.05	0	0	0	0.16	0	0	0	0.18	0	0.18
			57	0	-0.01	0	0	0	-0.08	0	0	0	-0.12	0	-0.07
			60	0	0	0	0	0	-0.01	0	0	0	-0.01	0	-0.01
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 64: Biodiversity Sites in Relation to $L_{Aeq,\ 16\ Hr}$, Day-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	$L_{Aeq16hr}$	51	4	0.56	0	0	1	4.97	0	0	4	18.5	2	5.55
			54	4	0.3	0	0	1	1.91	0	0	4	5.37	2	2.3
			57	2	0.09	0	0	1	0.49	0	0	3	0.81	2	0.63
			60	1	0.05	0	0	0	0	0	0	1	0.07	1	0.07
			63	1	0.02	0	0	0	0	0	0	1	0.04	1	0.04
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 65: Biodiversity Sites in Relation to $L_{Aeq,\ 16\ Hr}$, Day-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	$L_{Aeq16hr}$	51	4	0.63	0	0	1	5.29	0	0	4	25.31	3	5.87
			54	4	0.35	0	0	1	3.07	0	0	4	7.86	2	3.49
			57	3	0.1	0	0	1	0.63	0	0	3	1.37	2	0.78
			60	1	0.05	0	0	1	0.01	0	0	2	0.08	2	0.08
			63	1	0.03	0	0	0	0	0	0	1	0.04	1	0.04
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 66: Biodiversity Sites in Relation to $L_{Aeq,\ 8\ Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison L_{Aeq8hr}	2027	45	-1	-0.29	0	0	0	1.08	0	0	0	5.33	0	1.07
			48	0	-0.04	0	0	0	0.19	0	0	0	0.37	0	0.2
			51	0	-0.02	0	0	0	-0.09	0	0	0	-0.06	0	-0.05
			54	0	0	0	0	0	-0.02	0	0	0	-0.03	0	-0.02
			57	0	0	0	0	0	0	0	0	0	0.01	0	0.01
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 67: Biodiversity Sites in Relation to $L_{Aeq,\ 8\ Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison L_{Aeq8hr}	2036	45	0	-0.48	0	0	0	1.05	0	0	0	8.17	0	0.89
			48	0	-0.06	0	0	0	0.7	0	0	0	1.01	0	0.7
			51	-1	-0.03	0	0	0	-0.18	0	0	0	-0.1	0	-0.15
			54	0	0	0	0	0	-0.03	0	0	0	-0.05	0	0
			57	0	0	0	0	0	0	0	0	0	0.01	0	0.01
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 68: Biodiversity Sites in Relation to $L_{Aeq,\ 8\ Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	L_{Aeq8hr}	45	4	0.77	0	0	2	5.25	0	0	5	30.06	4	5.82
			48	4	0.4	0	0	1	2.94	0	0	4	10.39	2	3.5
			51	3	0.12	0	0	1	0.87	0	0	4	3.43	2	1.18
			54	1	0.05	0	0	1	0.39	0	0	3	0.54	2	0.51
			57	1	0.05	0	0	0	0	0	0	1	0.07	1	0.07
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 69: Biodiversity Sites in Relation to $L_{Aeq,\ 8\ Hr}$, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (dB)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	L_{Aeq8hr}	45	5	0.93	0	0	2	5.5	0	0	5	38.79	5	6.13
			48	4	0.45	0	0	1	4.07	0	0	4	13.89	2	4.63
			51	3	0.15	0	0	1	1.03	0	0	4	4.75	2	1.36
			54	1	0.05	0	0	1	0.54	0	0	3	0.97	2	0.68
			57	1	0.05	0	0	0	0	0	0	1	0.07	1	0.07
			60	0	0	0	0	0	0	0	0	0	0	0	0
			63	0	0	0	0	0	0	0	0	0	0	0	0
			66	0	0	0	0	0	0	0	0	0	0	0	0
			69	0	0	0	0	0	0	0	0	0	0	0	0
			72	0	0	0	0	0	0	0	0	0	0	0	0

Table 70: Biodiversity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N65 (Day)	2027	5	0	-0.4	0	0	0	0.09	0	0	0	-0.97	2	0.82
			10	0	-0.28	0	0	0	0.68	0	0	0	4.61	-1	0.6
			20	0	-0.13	0	0	0	0.8	0	0	0	1.26	-1	0.5
			50	-1	-0.07	0	0	0	0.78	0	0	0	2.31	0	0.78
			100	-1	-0.03	0	0	0	-0.13	0	0	0	-0.37	0	-0.12
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 71: Biodiversity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison N65 (Day)	2036	5	0	-0.4	0	0	0	0.1	0	0	0	-2.59	2	0.91
			10	0	-0.3	0	0	-1	0.46	0	0	-1	2.32	-6	0.26
			20	0	-0.17	0	0	0	0.8	0	0	0	1.92	-2	0.49
			50	0	-0.11	0	0	0	0.83	0	0	0	1.6	1	0.82
			100	0	-0.02	0	0	0	-0.12	0	0	0	-0.31	0	-0.09
			200	0	0	0	0	-1	-0.3	0	0	-1	-0.29	-1	-0.29

Table 72: Biodiversity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	N65 (Day)	5	5	1.24	0	0	4	6.38	0	0	7	56.22	20	9.27
			10	5	1.02	0	0	2	6.1	0	0	5	49.02	8	7.16
			20	5	0.77	0	0	1	5.6	0	0	4	33.36	4	6.23
			50	4	0.49	0	0	1	4.59	0	0	4	18.8	2	5.16
			100	3	0.17	0	0	1	1.09	0	0	4	7.12	2	1.27
			200	0	0	0	0	0	0	0	0	0	0	0	0

Table 73: Biodiversity Sites in Relation to N65, Daytime, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	N65 (Day)	5	5	1.31	0	0	4	6.61	0	0	7	58.76	21	9.76
			10	5	1.09	0	0	2	6.14	0	0	5	50.54	8	7.21
			20	5	0.81	0	0	1	5.79	0	0	4	37.63	4	6.42
			50	5	0.54	0	0	1	4.93	0	0	4	21.53	4	5.54
			100	4	0.27	0	0	1	1.18	0	0	4	8.04	2	1.45
			200	1	0.02	0	0	0	0	0	0	1	0.02	1	0.02

Table 74: Biodiversity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
With Airspace Change	Comparison N60 (Night)	2027	5	0	-0.62	0	0	0	0.67	0	0	0	13.45	-5	-1
			10	0	-0.51	0	0	0	0.05	0	0	0	1.88	-1	-0.24
			20	-1	-0.22	0	0	0	-0.01	0	0	0	0.61	0	0
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 75: Biodiversity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
With Airspace Change	Comparison N60 (Night)	2036	5	0	-0.56	0	0	1	1.99	0	0	1	19.59	-3	0.11
			10	0	-0.66	0	0	0	0.01	0	0	0	1.88	-1	-0.29
			20	0	-0.57	0	0	0	0	0	0	0	1.18	-1	0
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 76: Biodiversity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2027	With Airspace Change	N60 (Night)	5	5	1.68	0	0	2	6.36	0	0	5	69.42	8	7.2
			10	5	1.15	0	0	2	2.13	0	0	5	28.12	4	2.69
			20	2	0.25	0	0	1	1.89	0	0	4	22.01	2	2.43
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 77: Biodiversity Sites in Relation to N60, Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)	Total	Area (km^2)
2036	With Airspace Change	N60 (Night)	5	5	1.75	0	0	3	7.89	0	0	6	83.04	10	8.92
			10	5	1.29	0	0	2	2.41	0	0	5	29.82	4	2.97
			20	3	0.31	0	0	1	1.95	0	0	4	23.96	2	2.51
			50	0	0	0	0	0	0	0	0	0	0	0	0

Table 78: Biodiversity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Day	2027	5	-4	0.39	0	-0.16	-8	-5.11	-2	-13.27	-6	-38.8	-35	-16.4
			10	-1	-0.06	0	0.67	-9	-4.01	-1	12.64	-7	-1.93	-22	17.13
			20	0	-0.43	0	0	-7	-1.58	3	10.63	-7	27.79	-6	14.35
			50	2	-1.01	0	0	2	0.54	2	6.93	2	33.02	6	10.91
			100	0	-0.17	0	0	1	0.08	0	0	1	20.9	0	0.06

Table 79: Biodiversity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Day	2036	5	-8	-0.16	0	-0.14	-8	-4.74	-2	-15.08	-7	-48.14	-40	-22.8
			10	1	0.3	0	0.48	-9	-5.3	-2	1.91	-7	-2.7	-21	3
			20	0	-0.16	0	0	-6	-1.68	3	11.14	-4	28.77	-3	16.68
			50	2	-0.81	0	0	3	2.33	3	8.92	3	57.54	9	16.74
			100	0	-0.48	0	0	2	0.11	1	0.04	2	22.69	2	-0.15
			200	0	0	0	0	0	0	0	0	1	3.94	0	0

Table 80: Biodiversity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	Overflights Day	5	13	6.47	1	1.33	9	11.4	7	16.73	15	238.41	66	47.65
			10	8	4.16	1	0.72	5	6.31	6	15.15	10	202.75	41	36.31
			20	8	2.28	0	0	4	5.31	3	10.63	6	149.03	26	24.36
			50	5	0.61	0	0	3	2.82	2	6.93	5	59.82	10	13.53
			100	3	0.07	0	0	2	0.59	0	0	4	33.12	2	0.59

Table 81: Biodiversity Sites in Relation to Overflight Daytime, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	Overflights Day	5	14	6.79	1	1.37	9	12.99	7	17.01	15	246.76	69	51.29
			10	10	4.69	1	0.82	7	6.7	6	15.5	12	217.71	52	38.25
			20	8	2.73	0	0	5	5.55	3	11.14	9	172.37	32	27.43
			50	5	0.81	0	0	4	4.96	3	8.92	6	93.58	15	19.76
			100	3	0.19	0	0	3	0.68	1	0.04	5	37.05	4	0.72
			200	0	0	0	0	0	0	0	0	1	3.94	0	0

Table 82: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal vs Baseline, Comparison Table for 2027

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Night	2027	5	2	-0.9	0	0	1	0.9	3	1.02	3	77.26	9	9.23
			10	0	-1.2	0	0	2	0.18	1	0.08	2	22.59	1	-0.04
			20	0	0	0	0	0	-0.04	0	0	0	2.52	0	-0.04

Table 83: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal, vs Baseline, Comparison Table for 2036

Scenario	Metric	Year	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
With Airspace Change	Comparison Overflights Night	2036	5	2	-0.79	0	0	-1	0.21	3	1.1	1	66.59	3	8.55
			10	0	-1.15	0	0	2	0.2	1	0.12	2	18.3	4	3.32
			20	0	-0.4	0	0	2	0.11	0	0	2	22.52	1	0.1

Table 84: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal, 2027

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2027	With Airspace Change	Overflights Night	5	6	0.78	0	0	5	5.31	3	1.02	9	164.48	24	14.39
			10	3	0.32	0	0	3	0.84	1	0.08	5	43.05	4	0.93
			20	0	0	0	0	1	0.45	0	0	3	13.92	1	0.45

Table 85: Biodiversity Sites in Relation to Overflight Night-Time, Cluster Wide "With Airspace Change" Proposal, 2036

Year	Scenario	Metric	Contour (Flights per Day)	Local Nature Reserves		National Nature Reserves		RAMSAR		SAC		SPA		SSSI	
				Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)	Total	Area (km²)
2036	With Airspace Change	Overflights Night	5	6	0.91	0	0	5	5.48	3	1.1	9	174.4	25	15.22
			10	3	0.42	0	0	3	0.89	1	0.12	5	45.37	7	4.34
			20	1	0.06	0	0	3	0.66	0	0	5	36.1	3	0.66

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