Introduction of RNP-AR Procedures at EGLC

Stage 3 Consultation Document

ACP-2025-003

Issue 1.0

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Change History

Issue	Month/Year	Changes this issue (most recent first)
Issue 1.0	03/26	Published for consultation launch

Referenced Documents across all Stage 3 material

Ref No	Name and description	Links
1.	CAP1616 Edition 5.1	Link
2.	Statement of Need	Link
3.	Introduction of RNP-AR Procedures at EGLC Airspace Change Portal Page	Link
4.	CAP1616i: Environmental Assessment Requirements and Guidance for Airspace Change Proposals, 2023	Link
5.	Assessment Meeting Minutes	Link
6.	Stage 1 Define	Link
7.	UK Aeronautical Information Publication, July 2025	Link
8.	CAA Publication: Steep Approach Approval Compliance Statement and Checklist	Link
9.	London Airspace Management Programme (LAMP) Deployment 2 airspace change portal page	Link
10.	LCY Stage 2 Engagement Workshops Slides	Link
11.	London City Airport Annual Performance Report 2024	Link
12.	London City Airport Annual Performance Report 2024, Annexes	Link
13.	CADP1 S73 Application Environmental Statement	Link
14.	UK Government Air Quality Statistics	Link
15.	CADP1 Air Quality Management Strategy	Link
16.	Above and Beyond: Our roadmap to a sustainable future	Link
17.	CAP1616f: Guidance on Airspace Change Process for Permanent Airspace Change Proposals, 2025 (v1.1)	Link
18.	Stage 1 Timeline Agreement	Link
19.	CAP1498 Definition of Overflight, Edition 2	Link
20.	CAA Policy on Minimum Standards for Noise Modelling	Link
21.	ICAO Aircraft Engine Emissions Databank	Link
22.	Datasheets (06/2025)	Link
23.	Airspace Modernisation Strategy 2030-2040 Part 1: Strategic objectives and enablers, CAP1711, 2024	Link
24.	Airport Surface Access Strategy 2017-2025	Link
25.	Air Navigation Guidance 2017	Link

List of technical options appraisal reports supporting this consultation:

Annex A 12 pages Airspace change forecasts and methodology
Annex B 23 pages Cost-benefit analysis including passenger surface access time savings
Annex C 89 pages Aircraft noise assessment
Annex D 73 pages Air quality assessment
Annex E 10 pages Greenhouse gas emissions and fuel burn assessment

1. Executive Summary

Additional final approach procedures allow more new-generation aircraft

1.1.1 London City Airport has a steep final approach to both runways compared with other British airports. This 5.5° approach works very well, but constrains the types of aircraft able to operate here. Most British airports use 3° to 3.5°.

1.1.2 This airspace change would add a new final approach descent angle of 4.49°, which is shallower by 1.01°, to each runway.

1.1.3 Doing this will encourage a quicker transition to new generation, efficient, larger capacity aircraft such as the Airbus A320neo.

No change to where aircraft would fly, fewer flights in the long-term

1.1.4 This airspace change would **not change where aircraft fly**, either arriving at, or departing from, London City Airport. It would only change the aircraft types able to use LCY, the "fleet mix", as the airport's traffic continues to grow.

1.1.5 The number of flights would increase more slowly while still allowing more people to use the airport, because there would be more passengers per flight than today.

1.1.6 Under this proposal there would be **76,500 fewer flights** over the long-term, with **14m more passengers**[1] compared with doing nothing. The fleet mix would change, instead of an increase in smaller aircraft there would be a slower increase including larger aircraft using the shallower approach. The **majority** of the fleet mix would still be the smaller aircraft flying the unchanged steeper approach.

Improved overall noise

1.1.7 The addition of larger new-generation aircraft to the fleet mix means fewer flights are needed (compared with our growth without this change). We can move faster towards our planning limit of 9 million passengers per year, increasing the business and leisure opportunities for the city and benefitting economic growth.

1.1.8 At the same time, this long-term reduction in flights compared with doing nothing would mean almost **112,000 people would experience reduced daytime noise** (more than the city of Worcester), and more than 10,000 would experience reduced early-morning noise (i.e. 0630-0700)[2] compared with doing nothing. In almost all cases, the overflight noise differences between the A320neo and the other types using LCY would not be noticeable[3].

Improved greenhouse gas emissions, no impact on air quality

1.1.9 The addition of more new-generation aircraft to our fleet would **save over 18,000 tonnes of carbon dioxide**[4] compared with doing nothing over the long term.

1.1.10 Aircraft-related air quality in the region would not be changed by this proposal[5], nor would tranquillity or biodiversity[6] impacts.

Overall benefit

1.1.11 The change in fleet would make LCY more attractive to customers in our catchment, who would save time travelling to us instead of to other London airports. The total economic benefit for this airspace change is expected to be **between £38.4m and £97.4m** net present value.

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[1] The appraisal period for this proposal is 12 years, 2027-2038.
[2] Consultation document section 5.4.
[3] Consultation document paragraph 4.2.11 and 5.4.25.
[4] Consultation document section 5.7.
[5] Consultation document section 5.5.
[6] Consultation document section 5.6.

2. Introduction

2.1 The Airspace Change Proposal (ACP)

2.1.1 We are London City Airport (LCY), the sponsor of this ACP. The CAA's reference for this change is ACP-2025-003.

2.1.2 This consultation runs from **Monday 2nd March to Sunday 17th May inclusive**, a period of eleven weeks.

2.1.3 The ACP is required to follow a formal process set out in the Civil Aviation Authority's guidance CAP1616 [Ref 1]. The airspace change process is designed to ensure that technical requirements are met and that all relevant stakeholders are consulted. This has seven stages as shown below:

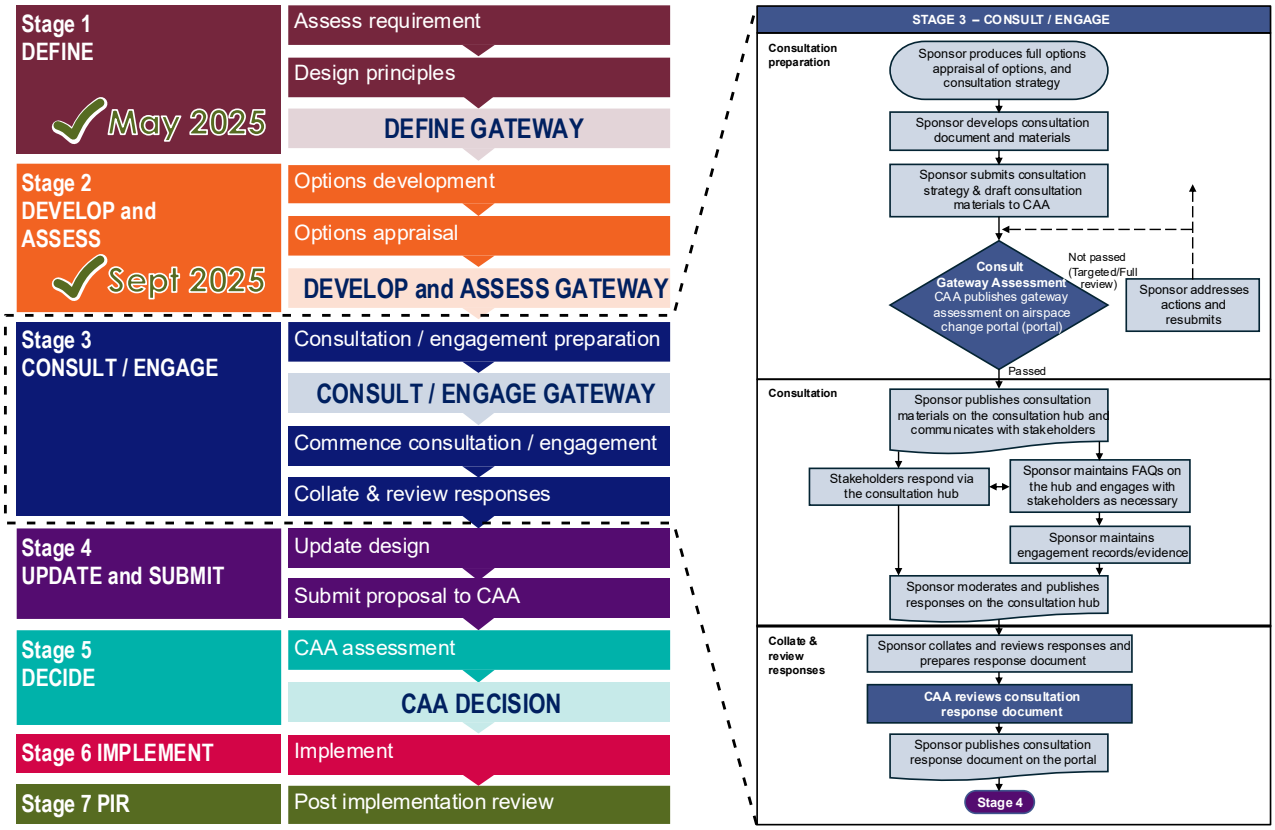


Figure 1 Airspace change process – overview (left) and Stage 3 (right)

2.1.4 As part of this process the Civil Aviation Authority (CAA) monitors the progress of the ACP via Gateways. At each gateway the CAA assesses whether airspace change process requirements have been met and whether the ACP should proceed.

2.1.5 This ACP is now at Stage 3, where LCY will oversee consultation and engagement with all relevant stakeholders.

2.2 Current airspace design overview: final approach

2.2.1 The current airspace design at LCY is characterised by steep Instrument Landing System (ILS) approach and departure procedures due to its urban location, its proximity to restricted airspace and to London Heathrow Airport.

2.2.2 Aircraft currently operate using a 5.5° approach angle, or glideslope. This is significantly steeper than the standard 3° approaches at most airports, due to the obstacle-rich environment and tall buildings particularly to the west of the airport.

2.2.3 Aircraft operators are therefore required to have special steep-approach certifications, constraining access to a wider range of modern aircraft.

2.3 Objective of this airspace change proposal

2.3.1 The objective of this ACP is to introduce RNP-AR[7] approach procedures. These use an even higher standard of satellite-based navigational accuracy than the current procedures. This means less stringent obstacle clearance requirements, so that a shallower approach can be introduced for authorised aircraft while still maintaining safe distances above obstacles.

2.3.2 These approach paths will closely match the current tracks over the ground flown by our arrivals. They would allow for standard approach angles below 5.5° to be used, which do not require steep-approach certifications. This shallower angle will enable and encourage a quicker transition to new generation, efficient, larger capacity aircraft, reducing air traffic growth.

2.3.3 Existing ground-based instrument approach procedures and the steep approach angles used by the current fleet will be maintained – only specifically-authorised aircraft operators would use the RNP-AR procedures. We expect the majority of air traffic at LCY to continue to use the existing unchanging steep-approach angle.

2.3.4 We forecast the Airbus A320neo to be the main user of these additional instrument flight procedures (IFPs). It is of similar length and wingspan as the Embraer E195-E2s which use LCY daily, however it has a wider fuselage and can carry more passengers.

2.3.5 Our overarching environmental strategy is to incentivise the newest, quietest, and cleanest aircraft to operate at the airport. The A320neo demonstrates these qualities in terms of efficiency, environmental performance, and passenger capacity. However, the A320neo cannot use the current 5.5° approach, which is why we are pursuing this ACP for a shallower RNP-AR approach designed specifically for this aircraft type.

2.3.6 Therefore the A320neo is the only aircraft type being considered as part of this ACP. Our strategy and rationale for enabling the A320neo to use the airport are fully reflected in our forecasts and environmental assessments. However, although no other aircraft types form part of this ACP, the most likely future candidates (based on the incumbent fleet) are the latest new generation Embraer E2 variants. Other new generation regional or corporate aviation aircraft capable of using our runway may also seek to use the shallower approach. Please also see Appendix B – Other Aircraft Types on p.44, which illustrates how we would strictly assess and consider their environmental impacts should such a future request occur.

2.3.7 The traffic forecast provided to us by specialist air transport consultants shows how the without-change and with-change scenarios using the A320neo would impact the numbers of flights and numbers of passengers. Section 3.8 and the separately published Full Options Appraisal document has more details.

2.3.8 Therefore all our consultation material is presented using the A320neo as the main change. This assumption is the best available, however we are clear that the IFPs would not be restricted to a specific aircraft type. Any aircraft operator wishing to use these IFPs would need airport authorisation, following an assessment of the potential impacts and benefits.

2.3.9 It would be disproportionate to attempt to calculate and provide analysis for multiple combinations of aircraft fleet mixes – our forecast is based on up to date, credible, evidence-based and clearly-referenced sources (see Annex A).

[7] Required Navigation Performance-Authorisation Required, a type of air navigation specification

2.3.10 Aircraft which can carry more passengers mean fewer flights would be needed to achieve the current allowable annual passenger throughput of 9m passengers per annum over the long-term. This would reduce the overall noise and greenhouse gas impacts and is accounted for in our 12-year forecasts.

2.3.11 With this change we predict our growth in ATMs to be slower, with **c.76,500 fewer overall flights** by 2038 and **c.14m more passengers** compared to our forecast growth without-change (more flights of smaller aircraft).

2.3.12 It goes without saying that arriving aircraft must also depart, so even though this airspace change is specifically about providing additional arrival procedures with a shallower final approach angle, all departures would follow the current unchanging standard instrument departure (SID) routes. Therefore, this ACP is about both the changes to final approach at both runways, and how that change enables the aircraft fleet using LCY to modernise more quickly.

2.4 About this document

2.4.1 This consultation document explains the background, impacts and benefits of this proposal. It is the main document supporting our consultation on the ACP to fulfil the requirements of Stage 3 of the airspace change process as illustrated in Figure 1 above.

2.4.2 Two complementary documents provide more details on how this consultation will be conducted and how the options were appraised:

- Stage 3 Consultation Strategy, which provides details on how we will conduct the consultation
- Stage 3 Full Options Appraisal, which provides analysis for the with-change option in comparison to the without-change baseline, quantifying key benefits and impacts

2.4.3 This consultation document, plus the consultation strategy and full options appraisal documents, are the core items (using the most up-to-date and credible information available) needed for you to understand this proposal, its background, and how we will consult. We will regularly refer to these complementary documents and you may find it useful to familiarise yourself with them while reading this main document.

3. Where we are in the airspace change process

3.1 What is the process?

3.1.1 The ACP is following the CAA's Airspace Change Process, described in their document CAP1616 [Ref 1] and illustrated in Figure 1 above.

3.1.2 We completed Stage 1 Define in May 2025, and Stage 2 Develop and Assess in September 2025.

3.1.3 We are now in Stage 3 Consult/Engage. This is where we complete our preparations for consultation, submit our documentation to the CAA for their assessment (known as a Gateway), and then undertake the consultation itself.

3.1.4 This consultation document designed to be read in conjunction with the Consultation Strategy and the Full Options Appraisal, which are the core Stage 3 documents.

3.1.5 For a complete history of all airspace change process-related documentation to date, see this ACP's CAA portal page [Ref 3].

3.2 What is within scope of this airspace change?

3.2.1 This is what is known as a Level 1 airspace change, subject to the most stringent requirements. It is defined as "a change to the notified airspace design that has the potential for a high impact on aviation and/or non-aviation stakeholders". This means that, because the change occurs at low altitudes near the airport, the impacts on people need to be more thoroughly assessed than for a change at high altitudes.

3.2.2 Government guidance [Ref 25] has altitude-based priorities, summarised as:

- Below 4,000ft, the priority is limiting the total adverse noise effects on people
- From 4,000ft-7,000ft noise minimisation is also a priority unless there would be a disproportionate increase in greenhouse gas emissions
- At and above 7,000ft flight efficiency is prioritised (in particular, mitigating greenhouse gas emissions) and noise minimisation is no longer the priority

3.2.3 We have therefore divided the scope of this ACP into the geographical areas where our flights are below 4,000ft, and those where our flights are from 4,000ft-7,000ft in accordance with the Government guidance above. Flights at and above 7,000ft are out of scope, except for the technical definitions of associated IFPs.

3.2.4 Given that aviation is a technical subject, and to avoid doubt, this proposal plans to introduce additional IFPs known as RNP-AR Approaches and RNAV1 Transitions[8]. Two additional RNP-AR approaches are needed to link from the airport end of four additional RNAV1 Transitions. We need these Transitions because, like today, each leaves one of the two distant holds (racetrack-shaped structures where multiple aircraft can "stack" at 1,000ft intervals, both more than 90km east, each handling different arrival flows from the air route network) and proceeds towards one of our two runways, making four possible routes. When the appropriate Transition ends, it links seamlessly with one of the two new RNP-AR approaches to land. The additional IFPs would follow the same track as today's existing four approaches until close to the airport. The four existing RNAV1 Transitions cannot be used for the new RNP-AR approaches because they must continue to link with the original approach procedures at their existing end points – the routes are the same but must be used in different ways. The only differences would be the navigational specifications for approach, and the final approach slope of 4.49°. These RNP-AR approaches would align with, and complement, our existing unchanging RNAV1 arrival procedures with the original 5.5° final approach.

3.2.5 All final approach procedures also need contingency (backup) procedures if something unusual happens. These exist at all airports and are rarely, if ever, actually flown. The backup procedures exist in case critical air traffic systems fail, or some other extreme circumstance means the pilot must resort to them. Air traffic controllers at LCY believe ours have never been used, a testament to them and to the resilience of the UK's air traffic control systems. To avoid doubt, adding these RNP-AR approaches with different navigational specifications and final approach slope would mean additional sets of these contingency procedures are needed. They are not expected to be flown in practice, but are required for safety. For additional technical context see paragraph 6.2.6 on p.37.

[8] RNAV, or aRea NAVigation, is a type of navigation specification for flight procedures, under the wider PBN (Performance Based Navigation) specification systems agreed internationally. All LCY flight procedures are currently RNAV1, meaning aircraft must be within 1nm of the defined track 95% or more of the time. In practice, aircraft are closer for longer. RNP-AR is another navigation specification with tighter tolerances and associated systems.

3.2.6 As we made clear earlier, this change is **not** about changing **where** aircraft fly. It's about adding a slightly shallower final approach slope to the runways, which enables the fleet mix to modernise. Therefore the difference in flightpath is only small and vertical, at the final stages of approach to the runway. And the existing arrival procedures would remain, for the majority of the remaining fleet which are certified to follow the steeper approach.

3.2.7 In Section 5 on p.20 we describe how this change impacts stakeholders.

3.3 How does this relate to London-wide airspace modernisation?

3.3.1 This ACP is **entirely separate** from the UK's Future Airspace Strategy Implementation South, or FASI-S, under the UK Government's Airspace Modernisation Strategy (AMS). Like all London airports we have a FASI ACP, you can find out more here.

3.3.2 Note that **all** southern England FASI ACPs will, over time, be subsumed into the nascent UK Airspace Design Service, or UKADS.

3.3.3 See Section 9 Appendix A – AMS Alignment on p.43 for an extract from our Stage 2 material. This ACP aligns with the strategic objectives of the AMS.

3.4 What is a 'stakeholder'? Who are they?

3.4.1 A stakeholder is an interested third party in an airspace change proposal. If you are reading this document, you are most likely a stakeholder in this proposal. Stakeholders include airlines, local government, community organisations, members of the public, private pilots, MPs and more. This document has been written with the non-technical stakeholder in mind, and technical terms are explained or summarised where they are introduced. Some stakeholders are aviation-technical experts and we have provided Section 6 on p.36 for those stakeholders who need more specific technical information. That section uses common aviation technical language.

3.4.2 Feedback is welcomed from everyone. Many stakeholder organisations have been identified in advance, and for this proposal they are listed in the separately-published Consultation Strategy. We have categorised them according to the level of changing impact.

3.5 How have you engaged with stakeholders so far?

3.5.1 At Stage 1 of the process we engaged with a smaller group of representative stakeholders to determine the design principles for developing this proposal. At Stage 2 we refreshed our stakeholder list and engaged more widely, seeking feedback on design options developed in accordance with the design principles. For a summary of previous engagement see the consultation strategy document, and for full details see our Stage 1 and Stage 2 publications on the CAA airspace change portal (Ref 3). We are now at Stage 3 where we are consulting more widely still.

3.6 What is the consultation area? Where does LCY traffic fly?

3.6.1 As described in paragraph 3.2.3 above, the consultation area has been divided by altitude. The diagram on the next page illustrates those areas.

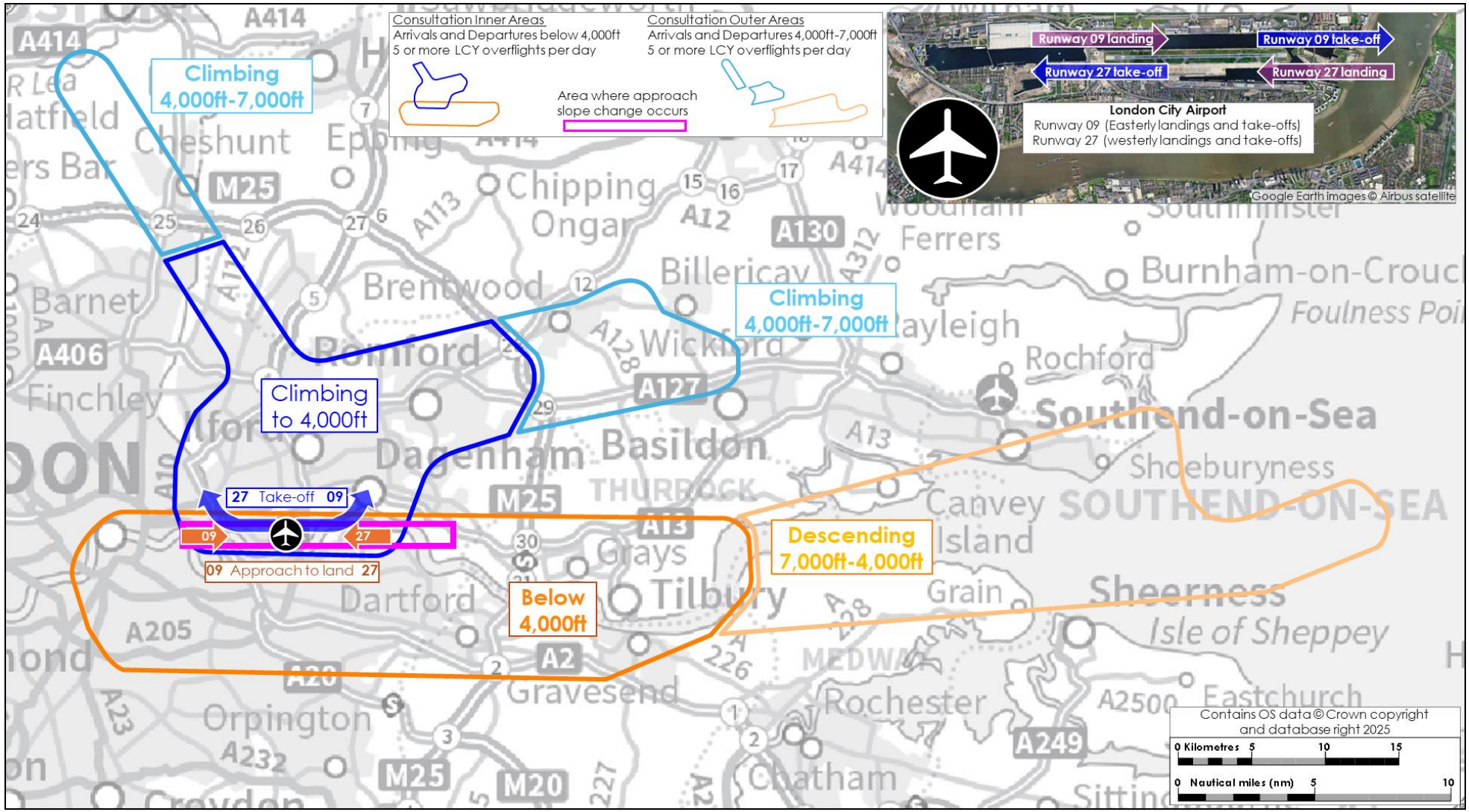


Figure 2 LCY Consultation Areas – below 4,000ft, and from 4,000ft-7,000ft

3.6.2 The orange & blue areas illustrate the extent of places overflown regularly. The inner areas below 4,000ft are bolder orange and blue; they are closest to the airport therefore people are more likely to notice a change. The outer areas from 4,000ft-7,000ft are shown in light orange and light blue; these areas are further from the airport and people are less likely to notice a change. The magenta area is where the actual approach slope would change under this proposal. For full details of how these areas are defined, see the separate consultation strategy document Section 5.3

3.7 Key Technical Details Explained

Operational diagrams

3.7.1 The diagrams we provide are illustrations and representations of how the airspace is, and would be, used. They do not contain specific information on noise[9], but they do illustrate the predicted extents, direction, distribution and altitudes of aircraft using the airspace. This allows you to identify how frequently, you are currently overflown, and at what altitude, and how that would change over the long term without and with this airspace change.

3.7.2 Diagram distances and scales are in kilometres (km 1,000m) and/or in nautical miles (nm is used for marine and aviation distances). 1nm is 1,852m or 1.85km. Road miles[10] are not used in this document.

How is the runway direction managed?

3.7.3 Like most airports, LCY has a single 'runway' which can be used in two directions. These are referred to as separate runways even though they use the same strip of concrete and asphalt. This is because the specific direction of use defines all the air traffic control procedures which are completely different per runway.

3.7.4 Runways are always designated by the general magnetic compass direction with which they most closely align; at LCY this is runway 09 (090°, easterly) and runway 27 (270°, westerly).

3.7.5 The decision on which runway direction to use is determined by ensuring departing and arriving traffic face into the wind. This enables aircraft to reduce speed over the ground just before landing and to maximise efficiency during take-off.

3.7.6 The prevailing wind in the UK is from the southwest, which results in our westerly runway 27 being used c.68% of the time and the easterly runway 09 used c.32% of the time. This is the long-term average over 20 years.

3.7.7 It is important to understand that this does not mean that, out of every 10 hours, there are guaranteed to be 7 westerly hours and 3 easterly hours. There are days, weeks and months when this proportion is not met, but the overall average is the key to ensuring the information we provide is fair and understandable.

What is altitude?

3.7.8 For this consultation we refer to vertical descriptions as altitude (above mean sea level in the region). Height is slightly different; it is the vertical distance above a point on the ground. Aviation uses altitude when close to an airport and rarely uses height. There is a third vertical reference known as Flight Level used higher up and further out; it can be considered to be the same as altitude for the purposes of this consultation. LCY's runway is 20ft above mean sea level, so the difference between altitude and distance above the runway is also negligible.

3.7.9 For noise modelling and local air quality, terrain elevation (relating to height) was taken into account.

3.8 How many flights?

3.8.1 All airports refer to air traffic movements, or ATMs. One ATM is one take-off or one landing, so an aircraft arriving, landing, taxiing in, taxiing out and taking off counts as two ATMs. As you would expect, there are normally the same number of departures as arrivals, i.e. half our total ATMs are departures, half arrivals.

[9] See the Full Options Appraisal document for detailed information on noise impacts
[10] A 'road' mile is 1,609m

3.8.2 In 2024, our baseline year, we managed **50,933 ATMs at LCY, carrying 3.6m passengers**.

3.8.3 We provide different forecasts in air traffic and fleet mix in this consultation, one for the with-change option (anticipating a quicker transition to new generation, efficient, larger capacity aircraft, which would reduce air traffic growth), and one for the without-change option (more flights of smaller aircraft to accommodate passenger growth up to the levels permitted to use the airport). So under this proposal, as LCY continues to grow, instead of an increase in the numbers of flights with smaller aircraft, there would be a slower increase in the total numbers of flights, including larger aircraft using the shallower approach.

3.8.4 The tables below illustrate two versions of the same data, with different details.

- Figure 3 provides detailed forecasts for the numbers and types of aircraft to operate at LCY in the planned implementation year of this proposal (2027) and 12 years later (2038 inclusive), with the runway (rwy) proportions assumed consistent as per paragraph 3.7.6 above. It also includes the forecast passenger numbers (abbreviated as pax) for those bookending years.
- Figure 4 provides detailed forecasts on annual ATMs and passenger numbers[11] over the 12-year appraisal period.

Figure 3 Implementation year and 12 years later: detailed fleet mix, ATMs and passenger forecast

	Without change				With change			
	2027 Year 1		2038 Year 12		2027 Year 1		2038 Year 12	
Aircraft	**Rwy 09**	**Rwy 27**	**Rwy 09**	**Rwy 27**	**Rwy 09**	**Rwy 27**	**Rwy 09**	**Rwy 27**
A220	2,240	4,760	6,432	13,668	2,240	4,760	4,448	9,452
ATR72	768	1,632	992	2,108	768	1,632	960	2,040
DHC8	1,216	2,584	0	0	1,216	2,584	0	0
E190	11,712	24,888	1,248	2,652	9,920	21,080	0	0
E190E2	448	952	1,248	2,652	448	952	864	1,836
E195E2	512	1,088	21,440	45,560	512	1,088	5,408	11,492
Corp Jets	1,124	2,390	1,124	2,390	1,124	2,390	1,124	2,390
A320neo	Not possible without change				544	1,156	11,968	25,432
Per Rwy	18,020	38,294	32,484	69,030	16,772	35,642	24,772	52,642
Total ATM	**56,311**		**101,502**		**52,389**		**77,368**	
Pax	**4.1m**		**9.0m**		**4.1m**		**9.0m**	

*Figure 4 Detailed annual ATMs and passenger forecast to 9.0mppa limit (*not inc corporate jets)*

	Without change			With change		
Year	**ATMs**	**Pax**	**Pax/ATM***	**ATMs**	**Pax**	**Pax/ATM***
2027	56,311	4.1	73	52,389	4.1	78
2028	58,206	4.2	72	55,644	4.4	79
2029	60,395	4.4	73	57,636	5.1	89
2030	60,006	4.6	77	56,016	5.6	100
2031	62,906	4.8	76	56,747	6.2	109
2032	64,656	5.1	79	57,354	6.6	115
2033	66,968	5.4	80	61,719	7.1	115
2034	69,249	5.7	82	66,149	7.7	116
2035	71,675	6.0	84	72,411	8.4	116
2036	80,793	6.9	85	77,368	**9.0**	116
2037	91,985	8.0	87	77,368	**9.0**	116
2038	101,502	**9.0**	89	77,368	**9.0**	116

12-year total	**844,652 ATMs**	**c.68m pax**	**768,169 ATMs**	**c.82m pax**
			c.76,500 fewer	**c.14m more**

[11] Our planning limit is 9m passengers per annum (mppa), within 111,000 air traffic movements, and other daily/weekly/ weekend limits.

3.8.5 All tables in this document follow the above colour scheme – pink columns show information without the airspace change, green columns show the same information with the change.

3.8.6 Typically, the airspace change process requires a 10-year appraisal period. However, it was agreed with the CAA that a 12-year period should be used so that we would be able to present and compare impacts using like-for-like passenger numbers. Adopting a 10-year period would have meant comparing the airport at 6.9mppa with the airport at 9.0mppa which would not have shown the full effects of both the with-change option and the without-change option.

3.9 Rounding

3.9.1 Throughout this document, data has been rounded to the nearest whole number (such as flights or passengers, where averages often result in fractions) or appropriate significant figure for ease of display. Data using decimal points is rounded to the fewest appropriate decimal places. This includes the totals in data columns, and numbers stated within the narrative, which are **always calculated using unrounded data, and then rounded for presentation.** Therefore, adding up data items may result in a different number from that presented as the total due to the fractional or significant-figure rounding differences not shown.

4. What has changed since Stage 2?

4.1 What were Stage 2's design options?

4.1.1 Stage 2's conclusion was to progress design components IA09_Option 3, FA09_Option1 and FA27_Option 1. Summarised, these were:

IA09_Option 3

Intermediate Approach phase of arrivals to easterly runway 09.

This option allowed for a design swathe, 500m either side of the current (and unchanging) arrival centreline, around the final turns – see Figure 5 on p.15. Its purpose was to allow instrument flight procedure (IFP) designers flexibility in their geometrical calculations. Flexibility was needed because the international design requirements for the proposed RNP-AR arrival procedures are slightly different from those for the current RNAV1 arrival procedures.

At the time of writing Stage 2 it was not clear whether the new IFP could be built to match the current IFP. Our original intent was to use the existing track for the new track, or as close as possible given the different design constraints.

Our original intent for this project was to use the existing tracks over the ground for approaches to both runways. For runway 27 this is simple because it is a straight path from the estuary, therefore our proposed runway 27 track will follow the existing track. For runway 09 the approach includes five more turns to be navigated from the estuary, the final three of which have crucial constraints due to Heathrow air traffic. As described above, we needed flexibility to accommodate different geometric calculation requirements in case a precise equivalent track could not be replicated.

We have developed this option and explain what we did in the next section.

FA09_Option 1

Final Approach phase of arrivals to easterly runway 09.

The current steep approach operation uses an angle of 5.5° which, as described in section 2.2 on p.5, requires special certification. Not all aircraft types can be certified at 5.5°.

This option was for an approach angle of between 4.49° and 4.40° to be used. The west side of the airport has more tall buildings so the slope options are limited. These are still non-standard approach angles compared with the more typical 3°, however more aircraft types can fly 4.49° or below, and the purpose of this proposal is to enable those types.

FA27_Option 1

Final Approach phase of arrivals to westerly runway 27.

This is almost the same as FA09_Option 1 except the westerly runway 27 approach angle range was between 4.49° and 4.05° because there are fewer tall buildings to the east of the airport. For both the easterly and westerly approach angle options, at the time of writing Stage 2 we were not sure where in that range the slope should be finally set.

We have developed both FA09_Option 1 and FA27_Option 1, and explain what we did in the next section.

4.2 How have we developed IA09_Option 3?

4.2.1 We undertook research into the viability of tracks at the extremes of the swathe, including safety and environmental impacts (see paragraph 4.2.6 on p.17).

4.2.2 We identified a safety constraint on Heathrow arrivals as the primary reason not to extend the LCY runway 09 arrival track further west than today, and this is explained below.

Figure 5 Adapted from Stage 2, design IA09_Option 3 illustrating swathe 500m either side of existing runway 09 arrival track (clockwise flow)

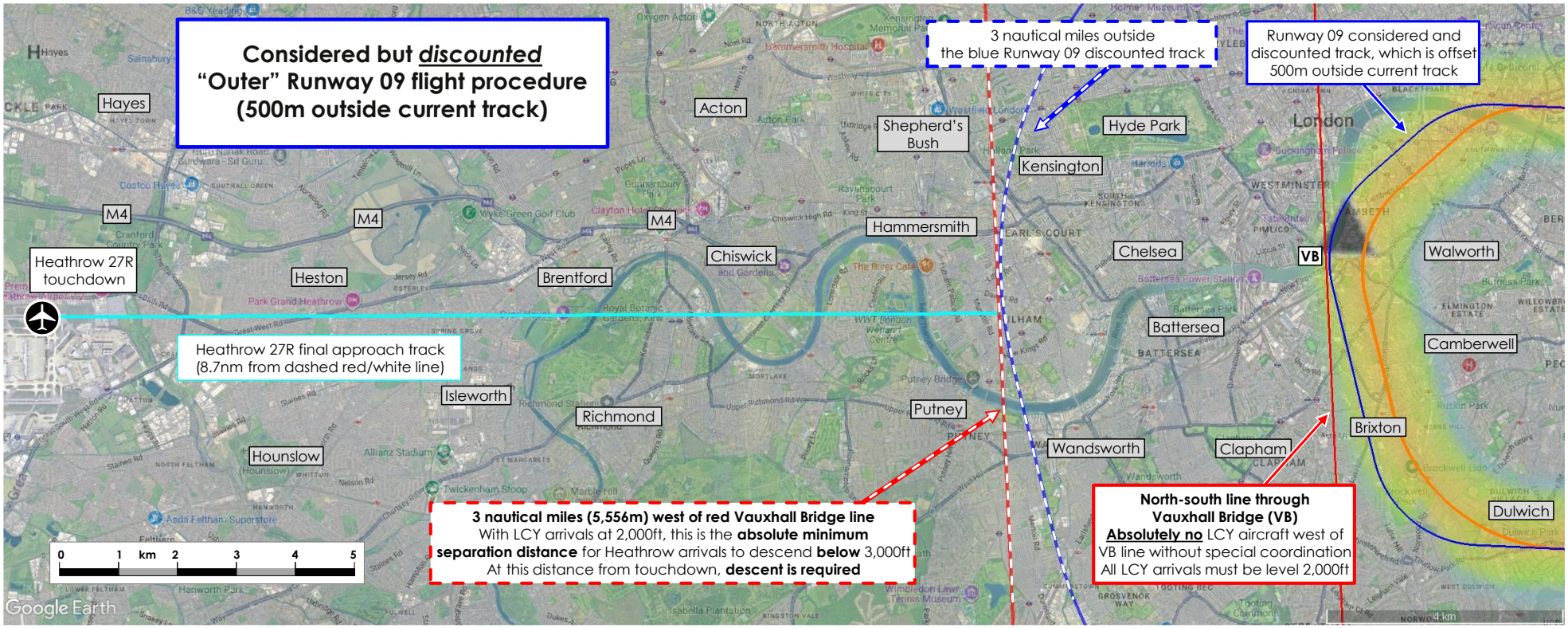


Figure 6 From Stage 2, design IA09_Option 3 illustrating considered but discounted "Outer" runway 09 flight procedure (500m outside current track)

4.2.3 Figure 6 illustrates (by solid dark blue line) the western edge of the swathe at a maximum 500m offset from the existing track for runway 09 arrivals. This was **considered and discounted**. Air traffic controllers use the solid red line north-south through Vauxhall Bridge as a reference point for this permutation; the current track allows for minor turn variability at the turning point towards final approach, which is close by (grey triangle). The route **must** maintain 2,000ft until on final approach.

4.2.4 Minimum separation between aircraft in this region is 3nm (5,556m) as determined by radar. Heathrow arrivals to runway 27R cannot descend below 3,000ft until they are 3nm or more from LCY aircraft at 2,000ft, so the air traffic instruction manual (known as MATS2) provides a system of procedures ensuring 3nm or more can be guaranteed between LCY and Heathrow arrival traffic. This is shown by the dotted blue and red lines in Figure 6.

4.2.5 This system would be less reliably safe if one of the centrelines for runway 09 arrivals was 500m west of its current track. 500m is 9% of the 3nm (5,556m) radar separation. Heathrow arrivals cannot be moved that distance because they must descend below 3,000ft in that area, so there is not sufficient room in the system to accommodate such a shift. Therefore, we cannot consider this as a viable way forward on safety grounds.

Respite for those overflown by runway 09 arrivals

4.2.6 During Stage 2 we received feedback that, of the three initial approach options for runway 09, IA09_Option 3 would be preferable because its width might allow for the development of one or more routes. Stakeholder feedback was that one or more routes could be deliberately offset from the current path, in an attempt to reduce noise impacts on those currently overflown by runway 09 arrivals at low altitude.

4.2.7 In our Stage 2 document we noted that this ACP is a relatively small change to our arrival procedures within the current air route system. We also noted that LCY is part of a large-scale airspace change programme called FASI (Future Airspace Strategy Implementation), which includes all the London airports, each of which constrain the others via legacy airspace structures and flightpaths. This ACP is entirely separate from our FASI ACP.

4.2.8 Nevertheless we initiated research on what might be geometrically possible, simple, safe, and logical within that swathe and its final three turns.

4.2.9 As indicated above, introducing a route at the western limit of the swathe (500m from the existing track) had to be discounted for safety reasons given the need for separation from Heathrow arrivals. We also considered the effectiveness of variation within the swathe in terms of providing respite.

Perceptibility of changed noise impacts up to 500m away at 2,000ft

4.2.10 Any route up to 500m either side of the current track would be unlikely to cause a perceptible change in noise impacts to ground-based stakeholders.

4.2.11 Using CAA document CAP1498 (Ref 19) Figure 11 on p.20 we see that, at 2,000ft, a track offset by 500m would cause a sub-3dB change in noise impact. Paragraph 3.19 of CAP1498 states "*It is widely accepted in the environmental acoustics profession that 3dB is the smallest difference between two noise levels that the average person can perceive*". In practice this technical difference would likely be smaller in actual perception, because the majority of runway 09 arrivals would continue to follow the current track. And note that the new route must diverge from, and then converge back to, the unchanging track, meaning the maximum 500m difference is for a shorter distance than the full extent of the swathe.

4.2.12 See Figure 7 below for a considered but discounted example of a route 500m inside (east) of the current runway 09 track, which includes an adapted extract of that CAP1498 diagram showing why it would be unlikely to provide a noticeable change in noise impact.

4.2.13 In addition to the above, multiple tracks in such a small space would not work from an air traffic management point of view, it would increase complexity in the region.

Runway 09 Swathe Conclusion

4.2.14 Our research concluded that the existing centreline track can be replicated, which keeps it simple, safe, and logical. We considered and discounted outer and inner arrival tracks to runway 09 for reasons of proximity to Heathrow arrivals and imperceptible changes in noise impacts.

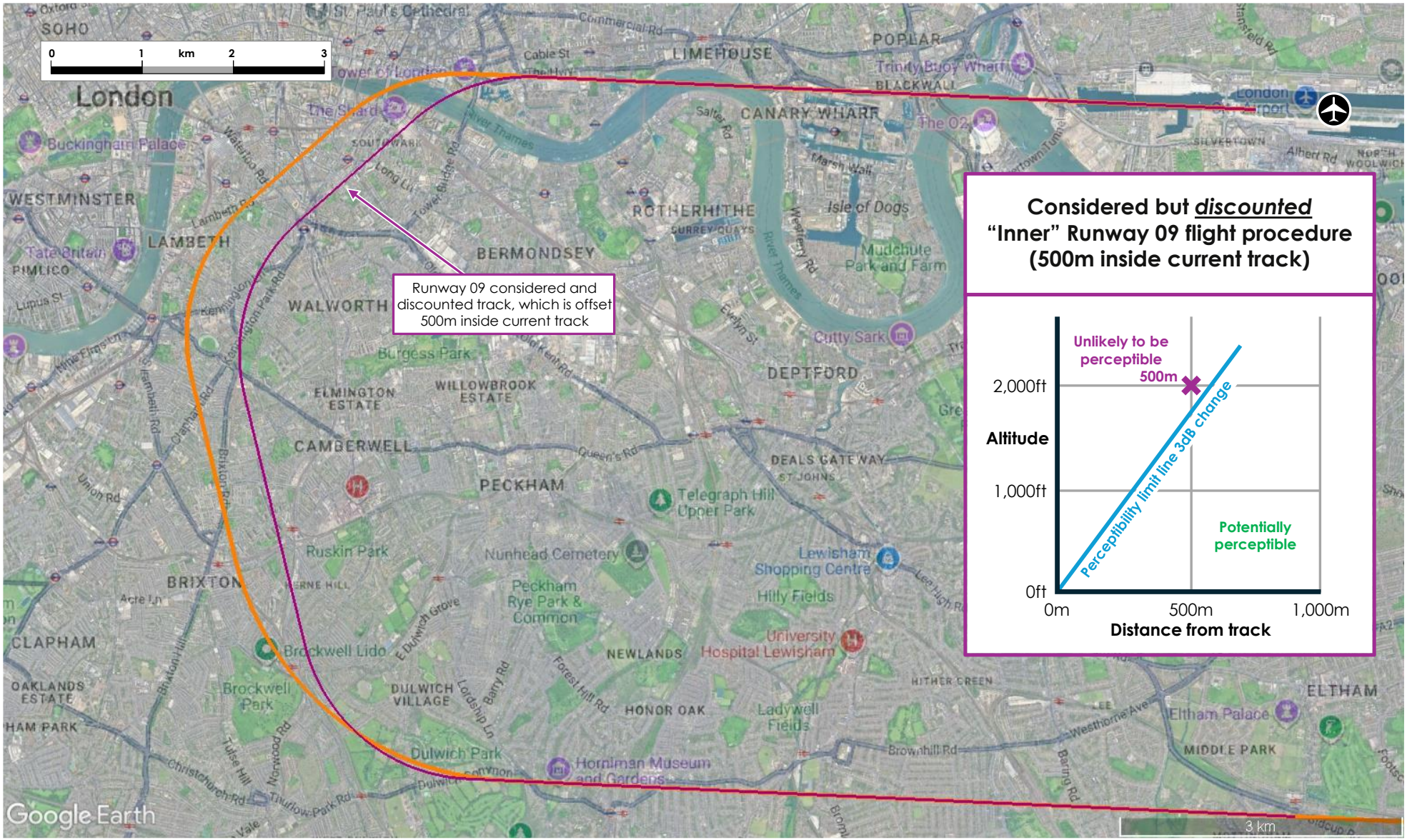


Figure 7 From Stage 2, design IA09_Option 3 illustrating considered but discounted "Inner" runway 09 flight procedure (500m inside current track)

4.2.15 Illustration (purple line) of a maximum 500m offset inner additional route for runway 09 arrivals, considered and discounted.

4.3 Final approach angles: How have we developed FA09_Option 1 and FA27_Option 1?

4.3.1 In accordance with Stage 2 feedback[12], we concluded we should use the steepest possible of the approach angle options, for both runways.

4.3.2 The aircraft type we forecast to initially operate this procedure, the Airbus A320neo, can operate at 4.49°, as can others. This would keep aircraft on final approach as high as possible for as long as possible (2,000ft for runway 09, 3,000ft for runway 27), minimising changes in noise impacts. The TOD (Top Of Descent) point for runway 09 moves west for this additional approach, which would leave 2,000ft c.1.3km earlier than the majority of arrivals. Likewise the runway 27 TOD moves east so, for this additional approach, arrivals would leave 3,000ft c.2km earlier than the majority.

4.3.3 It would also minimise the potential for impacts on property developers caused by flight procedure design safeguarding criteria[13], mainly closer to the runway thresholds. See Figure 14 and paragraph 5.3.10 on p.28.

4.4 The design options for this proposal

4.4.1 For the avoidance of doubt, this proposal intends to add new RNP-AR instrument approach procedures with a descent slope of 4.49° from 2,000ft (runway 09) and from 3,000ft (runway 27), in addition to four additional RNAV1 transitions (two from each distant hold to link to those new approach procedures, near-duplicates of the current RNAV1 IFPs). Doing this would enable the introduction of aircraft such as the A320neo which carry more passengers and are modern and efficient, reducing the overall number of flights and increasing the number of passengers flown. This is the **with-change option**.

4.4.2 The other option is to do nothing (baseline), known as the **without-change option**. The overall fleet mix would gradually change over time, but could not include the A320neo. The arrival slope would remain at 5.5°. There would be more flights and fewer passengers carried by smaller aircraft types.

4.4.3 The next section compares the impacts of the without-change and with-change options, so you can understand the differences.

[12] Noise impacts and property development impacts would be mitigated by keeping aircraft as high as possible for as long as possible.

[13] Buildings and cranes ("obstacles") are not allowed to penetrate a safeguarded geometrical "surface" (invisible) which is calculated in order to ensure safe air traffic operations. This is true of all airports, and the greatest restrictions are normally closest to the runway.

5. Comparing without-change and with-change

5.1 Introduction

5.1.1 This section compares the baseline (without-change option) and the with-change option by providing maps and diagrams to illustrate benefits and impacts.

5.1.2 The total numbers of flights (ATMs) are in section 3.8 on p.11, covering the most recent complete year at time of writing (2024), the planned year of implementation (2027, known as Year 1) and 2038, Year 12.

5.1.3 As a reminder, this consultation is about adding new final approach procedures of 4.49°, which will enable and encourage a quicker transition to new generation, efficient, larger capacity aircraft, reducing air traffic growth at LCY. The majority of aircraft are predicted to use the unchanging 5.5° final approach procedures over the 12-year period.

5.1.4 This section will include changes in impacts on:

- Numbers and altitudes of flights, for final approach, inner and outer areas (includes impacts on property developers where aerodrome safeguarding may be an issue to consider)
- Noise
- Air quality
- Tranquillity and biodiversity
- Greenhouse gas (carbon dioxide equivalent, or CO_2e[14]) emissions
- Fuel use/burn
- Cost-benefit analysis

5.2 More information on operational diagrams

Arrivals

5.2.1 Outer diagrams show arrivals from the east, from 7,000ft-4,000ft. All LCY arrivals are designed to follow the estuary until the Thames turns north for the final time. Inner diagrams (below 4,000ft) show more detail closer to the airport for the flightpaths to each landing runway, and more diagrams give details on final approaches.

5.2.2 If runway 09 is in use, arriving aircraft will then turn southwest, follow a track parallel to (and south of) the runway, continuing past LCY towards Heathrow. They make specifically defined right turns and descents onto an east-facing final approach from the west, in the "gap" between Heathrow and LCY.

5.2.3 If runway 27 is in use, they will continue west to land, following specific descent points, because they are already aligned with the runway.

5.2.4 Final approach close-up diagrams are presented for arrivals. They illustrate detailed differences in altitude between the unchanging final approach and the 1° shallower additional final approach.

[14] CO_2e means Carbon Dioxide Equivalent. Greenhouse gas emissions from aviation fuel mainly contain CO_2 but also other types of gas. CO_2e is a conversion that treats all greenhouse gas emissions from burnt aviation fuel as if they were CO_2. This is a standard comparison metric for airspace change proposals.

Departures

5.2.5 Outer diagrams show departures from each runway to the northwest and to the east, from 4,000ft-7,000ft. Departures follow SIDs which are named after the final air navigation waypoint reached upon joining the air route network. Inner diagrams (up to 4,000ft) show more detail closer to the airport for the departure flightpaths from each runway.

5.2.6 LCY's SIDs to the northwest are called BPK and SAXBI, they follow common flightpaths and split into different directions higher up and outside the scope of our proposal (BPK to the north, SAXBI to the west).

5.2.7 LCY's SIDs to the east are called SOQQA and ODUKU. They also follow common flightpaths and split into different directions higher up and outside the scope of our proposal (SOQQA to the south and southeast, ODUKU to the east and northeast).

5.2.8 We do not show diagrams concentrating on departure details because there are no changes or additions to any SID flightpath under this proposal.

General

5.2.9 Diagrams are split into inner flows below 4,000ft and outer flows from 4,000ft-7,000ft. Each shows the annual daily average, and the range of fewest to most per day, in proportion per flow and runway.

5.2.10 We show air traffic density images from August 2025 (Figure 10), and actual proportions of flights in each flow over the baseline year of 2024, this illustrates the current situation. Then we show the same diagram (Figure 11) without the density image but with the expected proportions of flights in each flow, without and with this airspace change proposal (ACP).

5.2.11 We are not proposing changes or additions to the airspace design outside final approach for either runway. These diagrams primarily show how the proposal is predicted to reduce the number of flights over the 12-year period.

5.2.12 Traffic above 7,000ft is unchanged and outside the scope of this proposal, except for certain flight procedure technical definitions.

5.2.13 The typical runway use at LCY is 32% easterly runway 09 and 68% westerly runway 27. See paragraph 3.7.7 on p.11 to interpret this long-term average.

5.3 Current and proposed approach paths

5.3.1 The following diagrams are presented in order of closeness to the runway:

- The current and proposed final approach paths to each runway are described in detail with associated altitude markers and narrative (Figure 8-Figure 9).
- The next set of diagrams shows the current and proposed traffic flows and number of flights for each runway's arrival and departure directions, out to 4,000ft (Figure 10-Figure 11, inner diagrams).
- After that, a similar set of current and proposed diagrams, from 4,000ft-7,000ft (Figure 12-Figure 13, outer diagrams).
- The region where flight procedure design safeguarding criteria may impact property development due to potential additional restrictions on the heights of cranes and buildings (Figure 14).

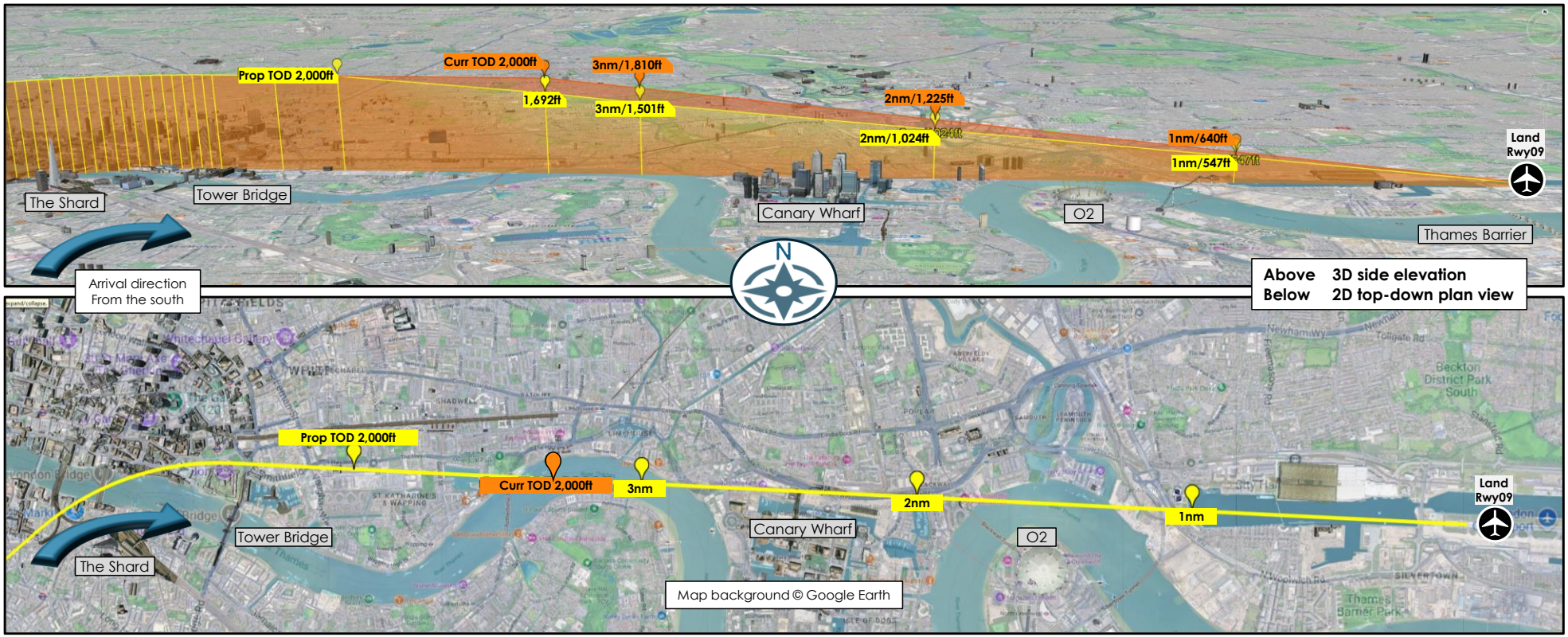


Figure 8 Final Approach diagram: Runway 09 differences in approach slope from 2,000ft, Current (Curr) 5.5° vs. Proposed (Prop) 4.49° and altitudes at 1nm intervals

5.3.2 Top Of Descent (TOD) markers are shown where level flight ends, and the final descent to land starts. The upper diagram shows detailed final approach altitudes for runway 09 (32% average use) in 3D perspective: without change (orange, 5.5°) and with change (yellow, 4.49°). This diagram gives context to where and how most aircraft start their descent from 2,000ft, and how the new approach slope would be flown by the minority of aircraft. It also shows buildings such as (from west to east) The Shard (1,016ft), Tower Bridge, Canary Wharf (One Canada Square is 770ft), the O2 Millennium Dome (masts 328ft), the Silvertown Cloud Cable Car (300ft) and the Thames Barrier. However, the 3D perspective means the distance scale varies from closest view (the Thames southern bend) to furthest (Walthamstow reservoirs).

5.3.3 Lower diagram: Distances are more accurate in 2D plan view, the 1nm intervals and current (Curr)/proposed (Prop) TOD markers are shown.

5.3.4 The maximum differences between the slopes are slightly more than 300ft at the Curr TOD and 3nm markers. This difference decreases as the slopes converge; at the 2nm marker the difference is c.200ft and at 1nm it is under 100ft. At the runway touchdown point there is no difference.

5.3.5 The Prop TOD marker is at Wapping, c.0.7nm/1.3km west of the Curr TOD marker in the Thames near the Rotherhithe Tunnel.

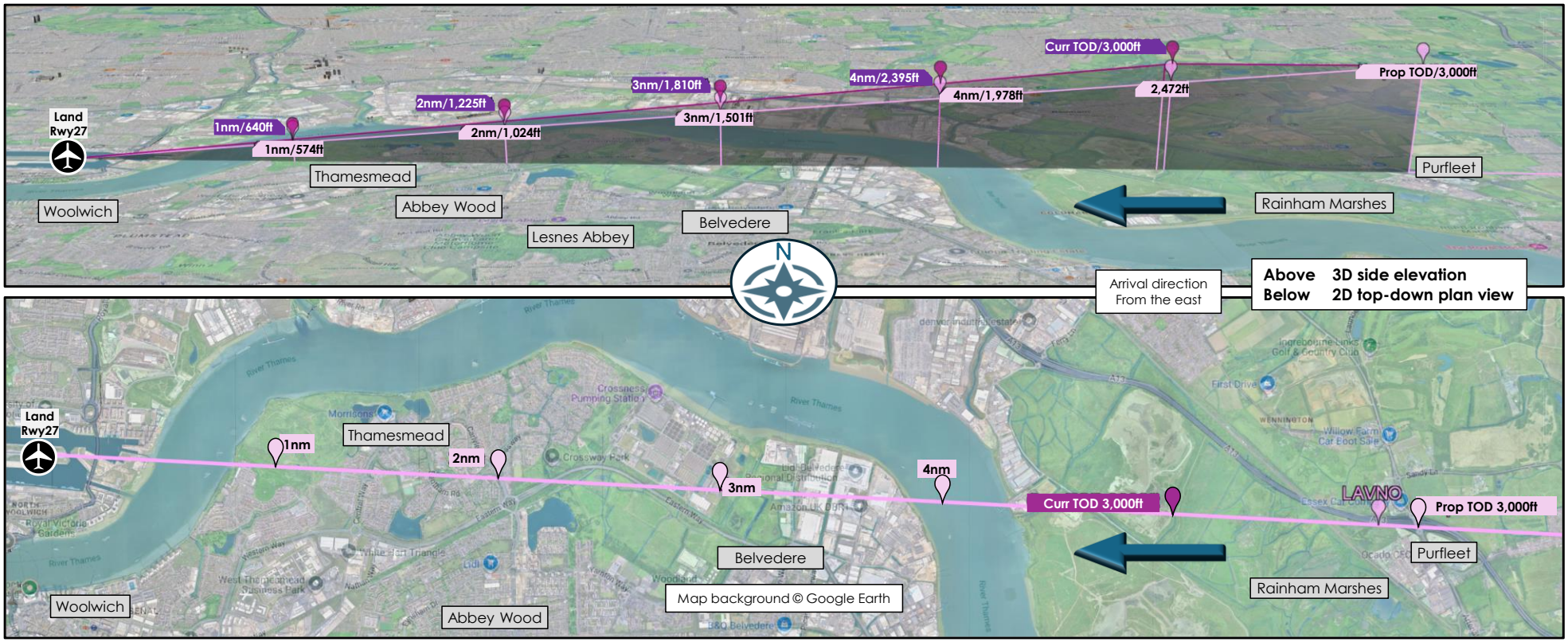


Figure 9 Final Approach diagram: Runway 27 differences in approach slope from 3,000ft, Current (Curr) 5.5° vs. Proposed (Prop) 4.49° and altitudes at 1nm intervals

5.3.6 The upper diagram shows detailed final approach altitudes for runway 27 (68% average use) in 3D perspective: without change (purple, 5.5°) and with change (pink, 4.49°). This diagram gives context to where and how most aircraft start their descent from 3,000ft, and how the new approach slope would be flown by the minority of aircraft. There are few tall buildings under this approach. The 3D perspective means the distance scale varies from closest view (Lesnes Abbey) to furthest (Hornchurch).

5.3.7 Lower diagram: Distances are more accurate in 2D plan view, the 1nm intervals and Curr/Prop TOD markers are shown. TOD markers show where 3,000ft level flight ends, and the final descent to land starts.

5.3.8 The maximum differences between the slopes are slightly more than 500ft at the Curr TOD marker. This difference decreases as the slopes converge; at the 4nm marker the difference is c.400ft, at 3nm it is c.300ft, at 2nm the difference is c.200ft and at 1nm under 100ft. At the runway touchdown point there is no difference.

5.3.9 The Prop TOD marker is over the A13/A1306 junction, c.1.1nm/2.1km west of the Curr TOD marker at Rainham Marshes.

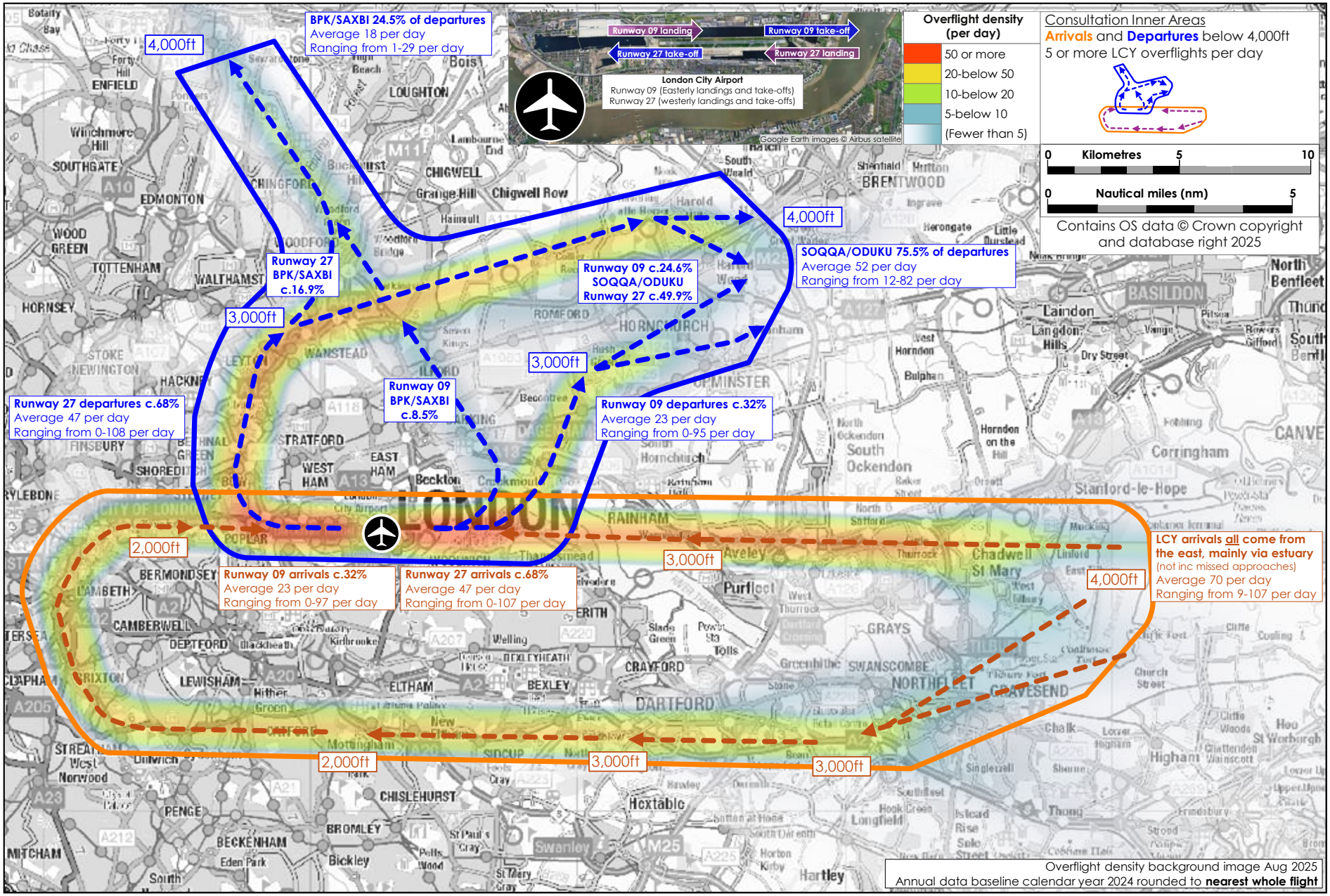


Figure 10 Inner diagram: the current situation, 2024 annual ATMs by flow, to/from 4,000ft, with Aug 2025 overflight density of 5 or more per day

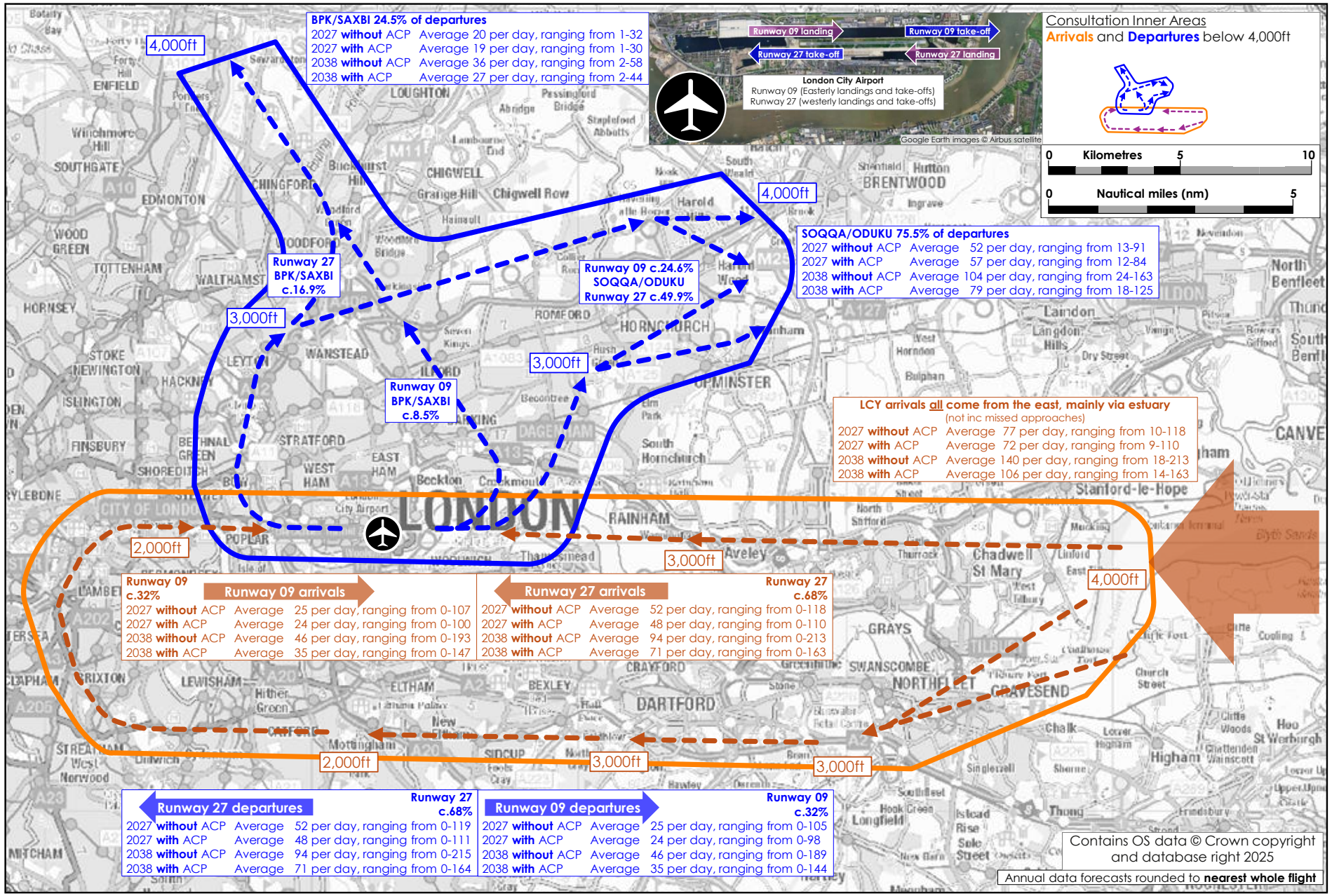


Figure 11 Inner diagram: 2027 and 2038 annual ATMs by flow, without and with ACP, to/from 4,000ft

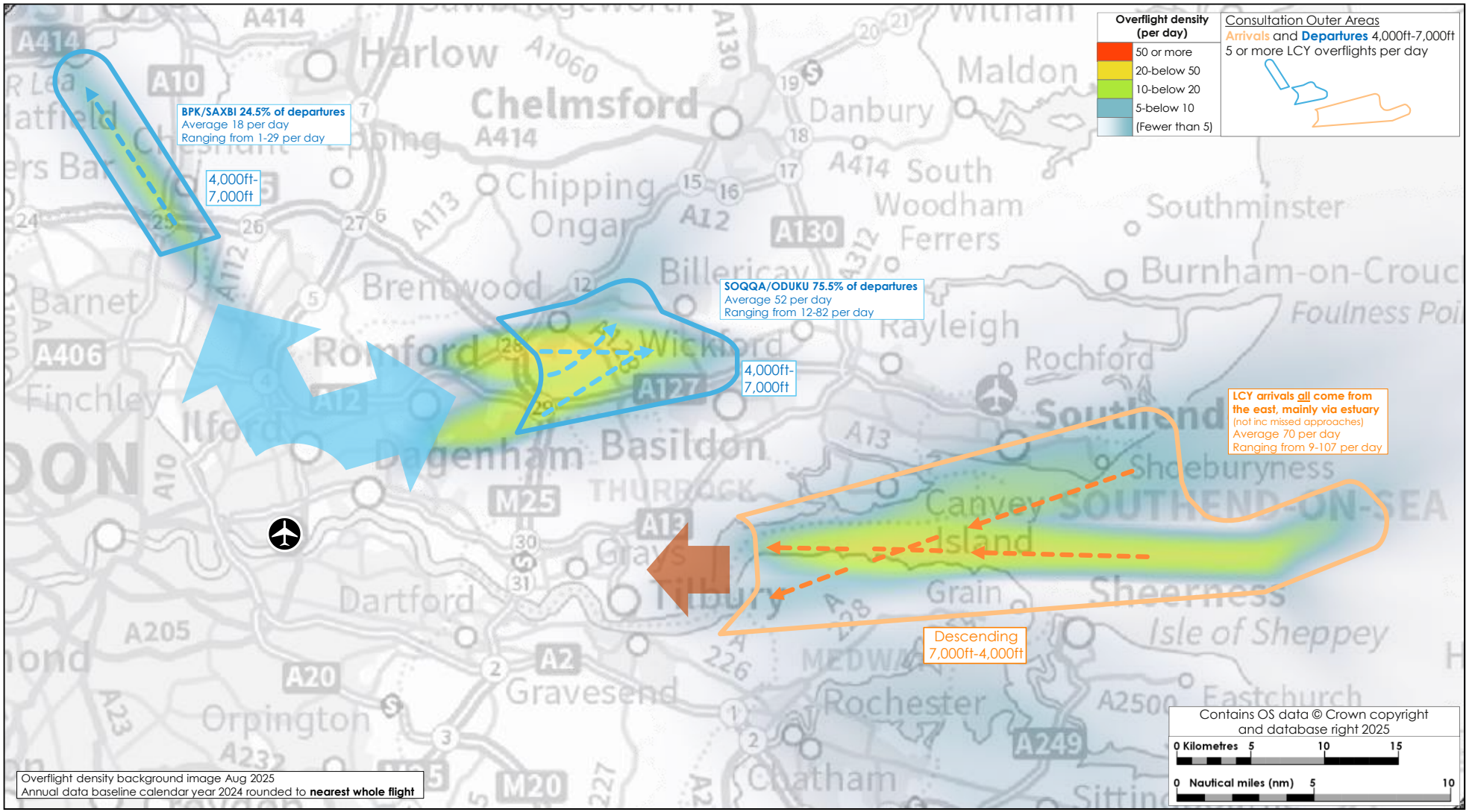


Figure 12 Outer diagram: the current situation, 2024 annual ATMs by flow, 4,000ft-7,000ft, with Aug 2025 overflight density of 5 or more per day

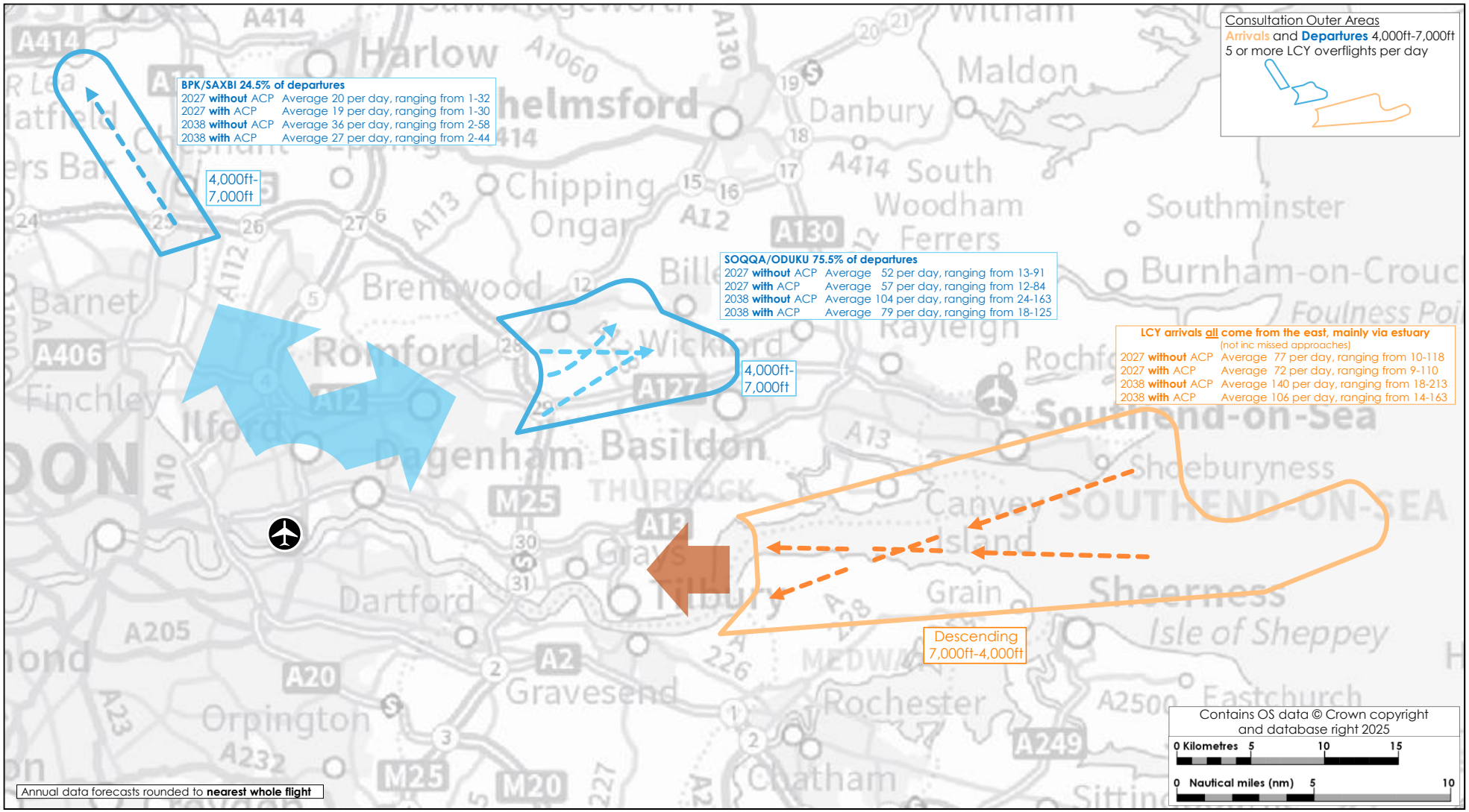


Figure 13 Outer diagram: 2027 and 2038 annual ATMs by flow, without and with ACP, 4,000ft-7,000ft

Property development

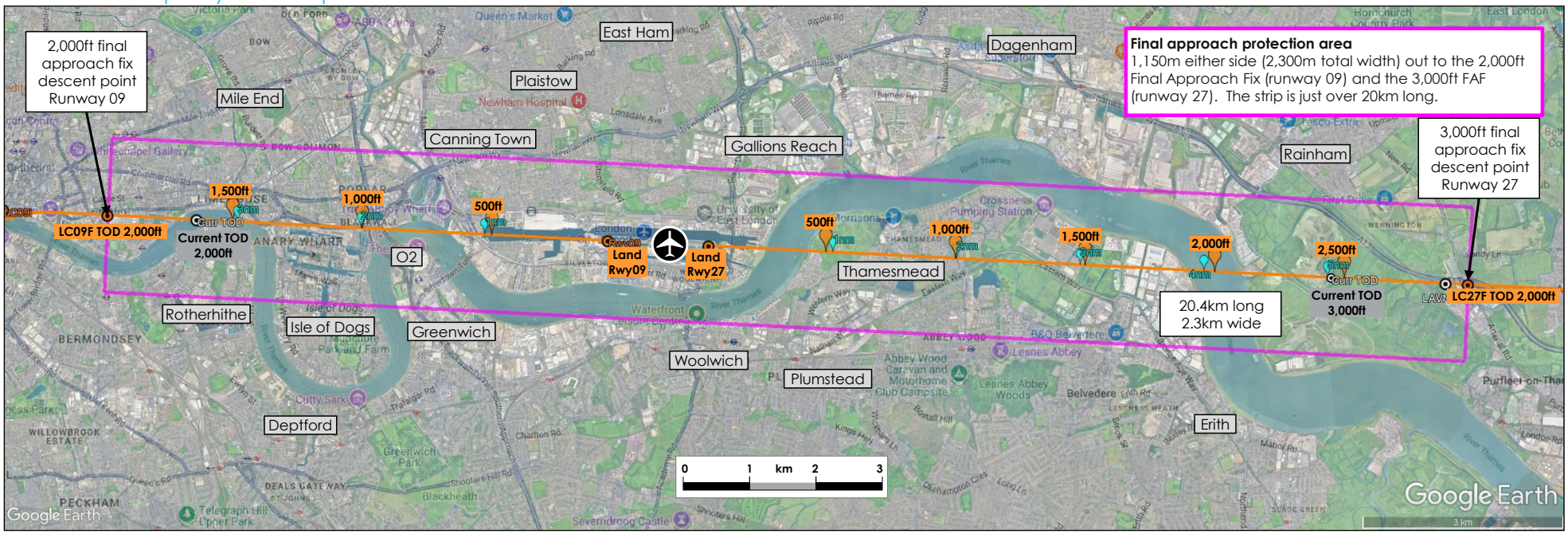


Figure 14 The Final Approach Protection Area

5.3.10 This ACP would add a new set of flight procedures with a shallower approach slope.

5.3.11 The Final Approach Protection Area is outlined in pink above. As discussed in paragraph 4.3.3 on p.19 this proposal aims to introduce the steepest of the approach slopes from Stage 2, mitigating the potential for additional impacts on safeguarding.

5.3.12 The precise extent of the obstacle assessment surface (OAS) will be calculated at later stages of this proposal, as part of the instrument flight procedure design package of evidence. We ask that **property developers and their agents continue to work with us by providing a response, formally letting us know their specific areas for current and planned tall building projects in the pink region.**

5.3.13 At present there is no further detail available on the scale and locations of the differences in impact on safeguarding, beyond the statements and diagram above.

5.4 Noise impacts

5.4.1 The objective of this proposal is for the changes to final approach at both runways to enable the aircraft fleet using LCY to modernise more quickly. This means aircraft that can carry more passengers, such as the Airbus A320neo, which in turn would cause our growth in ATMs to be slower, with fewer overall flights in the long-term (see section 3.8 on p.11: over 12 years we predict c.76,500 fewer flights with-change compared to our forecast ATM growth without-change).

5.4.2 We commissioned acoustic consultants Bickerdike Allen Partners LLP to provide a dataset and report comparing the without-change option and the with-change option. We took their data and formatted it into this document. Their full report is available separately as Annex C.

Quantified data on total adverse noise impacts

5.4.3 The Full Options Appraisal (FOA) document section 3.1, and the separately-published technical Annex C, provide a large amount of quantified noise data. It concludes that the total adverse impacts (as measured using standard L_{Aeq} noise metrics over the 12-year forecast period) are **smaller with the change than without** the change. This means smaller areas would be impacted, fewer dwellings, fewer people and fewer noise-sensitive buildings. The slower growth of ATMS under this proposal is a major factor in this outcome.

5.4.4 L_{Aeq} is the common standard measure of noise exposure, in decibels dB, see FOA.

Individual noise event impacts

5.4.5 This section assesses individual noise events caused by aircraft overflight, and how different aircraft types affect those events.

5.4.6 As mentioned earlier in paragraph 4.2.11 regarding track differences, the threshold for the perceptibility of a change in noise impact is 3dB. This means most people would not notice the difference between two separate noise events if their respective measurements were different by fewer than 3dB.

5.4.7 The A320neo is of similar length and wingspan as the Embraer E195-E2 which currently uses LCY, but it has a wider fuselage. This means it would reduce growth in the overall number of flights (ATMs) while simultaneously increasing the number of passengers served, over the 12-year forecast period. The smaller Embraer E190 is currently the most frequent user of LCY. This would continue for a few years after the introduction of the new procedure until the fleet mix rebalances, to include greater proportions of newer aircraft types (including our example A320neo). Without the ACP, E190 flights would continue but would gradually be replaced over time by the E195-E2. See section 3.8 on p.11 for details on how many flights are forecast over the 12-year period.

5.4.8 The following diagram and tables highlight the noise data (in dBA SEL, a measurement useful for comparing single events) for arrivals and departures for the A320neo, A220, E190, E190-E2 and E195-E2 at different arrival and departure locations near the airport. The A320neo arrivals at 4.49° were compared against other aircraft types at 5.5°. The departure routes (SIDs) would not change.

Understanding the daily frequency of noise events

5.4.9 You can use the diagrams and tables below, in conjunction with the diagrams in the previous section, to understand the number of times each noise event happens per day and how different aircraft types affect noise scenarios: current operations without the ACP over 12 years (with ATM growth of smaller aircraft); and with ACP over 12 years (slower ATM growth, fleet includes larger aircraft).

5.4.10 For more details on the noise differences between aircraft types near the runway, see separate technical Annex C.

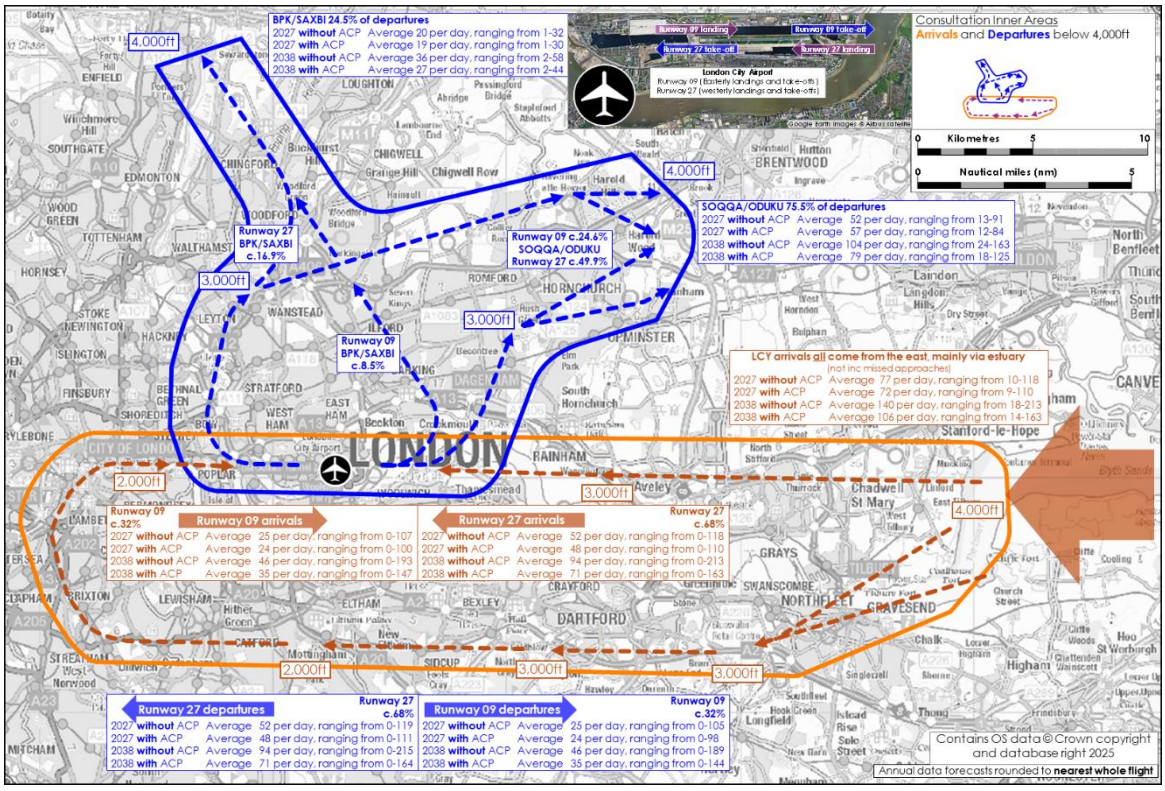
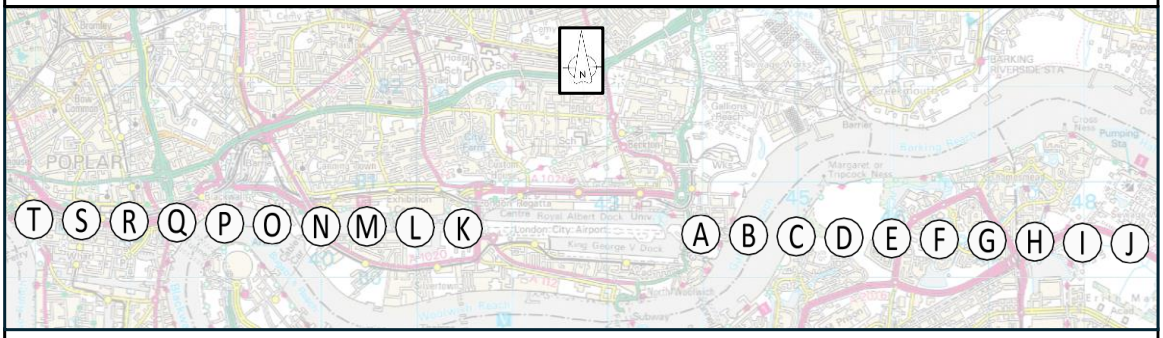


Figure 15 same as Figure 11 for ease of comparing frequency of flight with noise data up to 4,000ft

Close to the runways: Arrivals

Arrivals: Assessment of noise impacts for different aircraft types at 500m intervals near the runway
A320neo at 4.49°, other types at 5.5°



Scale: The centres of each circle are 500m apart, so A-J is 5km, as is K-T
© Crown copyright and database rights 2024 Ordnance Survey **0100031673** (Bickerdike Allen Partners, for LCY)

Figure 16 Aircraft type noise comparison assessment: Arrival locations

5.4.11 The tables below assess the different aircraft types on the 5.5° approach at LCY and their noise-event differences from the A320neo at 4.49°. Noticeable differences of 3dB or more are highlighted in **bold**.

Figure 17 Runway 27 (westerly) arrival noise data – descending from c.1,500ft at 5km

Assessment Location	Distance from Rwy 27 Threshold, km	Noise Level, dB(A) SEL at 4.49°	Noise Level Difference, dB(A) SEL at 5.5° + means this type is louder than A320neo - means this type is quieter			
		Airbus A320neo	A220-100	E190	E190-E2	E195-E2
A	0.5	93.5	-0.8	+2.2	-1.5	-0.8
B	1.0	90.5	-1.3	+1.7	-1.5	-1.4
C	1.5	88.5	-1.5	+1.5	-1.5	-1.3
D	2.0	86.8	-1.7	+1.3	-1.4	-1.1
E	2.5	85.5	-1.8	+1.2	-1.4	-1.0
F	3.0	84.3	-1.8	+1.2	-1.3	-0.8
G	3.5	83.4	-2.3	+0.7	-1.2	-0.9
H	4.0	82.4	-2.7	+0.3	-1.3	-0.9
I	4.5	81.6	**-3.2**	-0.2	-1.3	-0.9
J	5.0	80.8	**-4.0**	-1.0	-1.9	-0.9

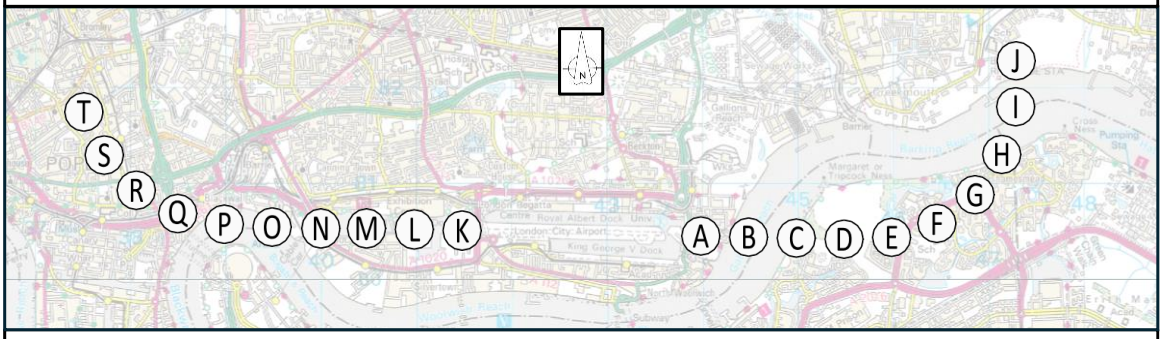
Figure 18 Runway 09 (easterly) arrival noise data – descending from c.1,500ft at 5km

Assessment Location	Distance from Rwy 09 Threshold, km	Noise Level, dB(A) SEL	Noise Level Difference, dB(A) SEL + means this type is louder than A320neo - means this type is quieter			
		Airbus A320neo 4.49°	A220-100 5.5°	E190 5.5°	E190-E2 5.5°	E195-E2 5.5°
K	0.5	93.5	-0.8	+2.2	-1.5	-0.8
L	1.0	90.5	-1.3	+1.7	-1.5	-1.4
M	1.5	88.4	-1.5	+1.5	-1.5	-1.3
N	2.0	86.8	-1.7	+1.3	-1.4	-1.1
O	2.5	85.5	-1.7	+1.3	-1.3	-0.9
P	3.0	84.3	-1.8	+1.2	-1.2	-0.8
Q	3.5	83.3	-2.3	+0.7	-1.3	-0.9
R	4.0	82.4	-2.7	+0.3	-1.3	-0.9
S	4.5	81.6	**-3.2**	-0.2	-1.3	-0.9
T	5.0	80.8	**-3.9**	-0.9	-1.8	-0.9

5.4.12 In almost all cases, the differences between the A320neo and the other types are fewer than 3dB in either direction, therefore generally not noticeable. The only exception is the A220 at the furthest extent of this assessment, which is (and is forecast to remain) a small proportion of our fleet mix, without or with this change.

Close to the runways: Departures

Departures: Assessment of noise impacts for different aircraft types at 500m intervals near the runway
No change to departure routes



Scale: The centres of each circle are 500m apart, so A-J is 5km, as is K-T

Figure 19 Aircraft type noise comparison assessment: Departure locations

5.4.13 The tables below assess the different aircraft types departing from LCY and their noise-event differences from the A320neo, at each of the assessment locations (A-T). Noticeable differences of 3dB or more are highlighted in **bold**.

Figure 20 Runway 27 (westerly) departure noise data – climbing through c.2,000ft at 5km

Assessment Location	Distance from Rwy 27 Threshold, km	Noise Level, dB(A) SEL	Noise Level Difference, dB(A) SEL + means this type is louder than A320neo - means this type is quieter			
		Airbus A320neo	A220-100	E190	E190-E2	E195-E2
A	0.5	93.4	-0.9	**+4.6**	-2.2	+0.8
B	1.0	90.4	-0.9	**+4.6**	-1.6	+0.4
C	1.5	88.5	-1.1	**+4.5**	-1.9	-0.3
D	2.0	86.8	-0.8	**+4.7**	-2.7	-0.5
E	2.5	85.3	-1.1	**+4.4**	-2.5	-1.2
F	3.0	84.0	-1.2	**+4.3**	-2.5	-1.4
G	3.5	82.7	-1.1	**+4.5**	-2.5	-1.5
H	4.0	81.3	-0.8	**+4.8**	-2.1	-1.4
I	4.5	79.9	-0.3	**+5.2**	-1.6	-1.1
J	5.0	79.0	-0.2	**+5.3**	-1.5	-1.1

Figure 21 Runway 09 (easterly) departure noise data – climbing through c.2,000ft at 5km

Assessment Location	Distance from Rwy 09 Threshold, km	Noise Level, dB(A) SEL	Noise Level Difference, dB(A) SEL + means this type is louder than A320neo - means this type is quieter			
		Airbus A320neo	A220-100	E190	E190-E2	E195-E2
K	0.5	93.4	-0.9	**+4.6**	-2.2	+0.8
L	1.0	90.3	-0.9	**+4.6**	-1.6	+0.4
M	1.5	88.4	-1.1	**+4.5**	-1.9	-0.3
N	2.0	86.7	-0.7	**+4.8**	-2.7	-0.4
O	2.5	85.1	-1.1	**+4.4**	-2.5	-1.2
P	3.0	83.9	-1.1	**+4.4**	-2.5	-1.3
Q	3.5	83.0	-1.0	**+4.5**	-2.5	-1.4
R	4.0	81.8	-0.6	**+4.9**	-1.9	-1.3
S	4.5	80.2	-0.1	**+5.6**	-1.2	-0.8
T	5.0	79.6	-0.3	**+5.3**	-1.6	-0.9

5.4.14 In all cases, the A320neo is noticeably quieter on departure than the E190, today's most frequently flown aircraft at LCY. All other differences between the A320neo and the other types are fewer than 3dB in either direction, therefore generally not noticeable.

Up to 4,000ft (inner area, deep orange & blue)

5.4.15 The following table provides comparisons between the current most commonly-used aircraft type (E190) and the newer-generation of the LCY fleet (including the A320neo), for different phases of flight.

5.4.16 We have shown an indicative SEL range for the newer-generation proposed LCY fleet (A220, E190-E2, E195-E2 and A320neo), because there is limited measured noise data for these newer types further from the airport, with more reliance on modelling predictions.

Figure 22 Noise data comparison up to 4,000ft in different phases of flight (indicative)

Altitude and phase	Noise Level, dB(A) SEL	
	E190 (Current most common)	New Gen Fleet (Range)
2,000ft level	80	77-81
3,000ft climbing	79	74-78
3,000ft level	75	72-77
4,000ft climbing	74	69-74
4,000ft level	73	69-74
4,000ft descending	71	68-72

5.4.17 In general, the noise levels for the A320neo are expected to be broadly similar to the other new generation aircraft types for the various phases of flight. In certain phases of flight it is forecast to be the quietest of these types.

5.4.18 The transition to newer-generation aircraft will reduce overall noise levels as traffic grows. With the proposed change, the transition to newer-generation types would accelerate from 2027 and, long-term, would also reduce the number of flights compared to what would otherwise occur.

Further from the runways: 4,000ft-7,000ft (outer area, pale orange & blue)

5.4.19 This proposal is not focussed on changing where or how aircraft fly in this region. The fleet mix would change, instead of an increase in smaller aircraft there would be a slower increase including larger aircraft (such as the A320neo) using the shallower approach. The **majority** of the fleet mix would still be the smaller aircraft flying the unchanged steeper approach.

5.4.20 As stated above, our noise modelling does not extend this far out from the runways and we do not want to provide less-reliable information. However, it is

reasonable to expect the comparison in Figure 22 above to generally continue further out/higher up. The newer-generation aircraft type noise levels are similar to the current most common aircraft type (E190). With this change we predict our growth in ATMs to be slower, with c.76,500 fewer overall flights by 2038 compared to our forecast growth without-change (more flights of smaller aircraft).

Airport planning permission – fixed noise contour condition

5.4.21 Our planning permission stipulates that our operating hours noise contour of 57dB L_{Aeq16h} must not exceed 9.1km^2. We are required to operate the airport in accordance with a Noise Contour Strategy, to reduce the area of the contour over time. The planning permission stipulates that the 57dB L_{Aeq16h} contour must not exceed 7.2km^2 by the time the airport reaches its new passenger cap of 9mppa.

5.4.22 Both without and with this airspace change, the limit and target areas would not be exceeded.

5.4.23 The with-change 57dB L_{Aeq16h} contour in 2027 would be c.0.7km^2 smaller than the without-change contour, 3.7km^2 smaller than the current planning limit, and 0.3km^2 smaller than in 2024. In 2038 the contour would be more than 1km^2 smaller than in 2024, and would be 2.6km^2 smaller than the 7.2km^2 target.

Figure 23 Operating hours Summer Day contour areas LAeq16h (0630-2230)

	Area km²				
Contour	**2024 Current**	**2027 Without**	**2027 With**	**2038 Without**	**2038 With**
57dB	5.7	6.1	5.4	5.6	4.6

5.4.24 In all cases above, **the with-change contour area is smaller than without-change contour area**, reducing the overall impact on people.

Noise impacts conclusion

5.4.25 With the change, we predict **fewer flights** overall due to the **greater passenger capacity** of the A320neo. Figure 11 on p.25 and Figure 13 on p.27 show the forecast reduction, if this change is implemented. The noise from an A320neo is noticeably quieter on take-off than the E190 and is similar (within the limits of perceptibility for most people) to the existing fleet.

5.4.26 Overall, almost 112,000 people would experience reduced daytime noise over the 12-year appraisal period (more than the city of Worcester), and more than 10,000 would experience reduced early-morning noise (i.e. 0630-0700).

5.4.27 Using the DfT's WebTAG system to calculate the monetised impact on wider society due to noise (a standard element of the airspace change process), the **12-year benefit** would be worth **£32.2m NPV**.

5.4.28 For full details on the changing noise impacts, see the Full Options Appraisal document Section 3.1 and the associated noise technical Annex C.

5.5 Air quality

5.5.1 We commissioned an air quality assessment report from highly qualified expert Air Quality Consultants, part of the Logika Group environmental consultancy. The airspace change process requires quantification of the change in impacts on nitrogen oxides (NOX), and particulate matters $PM_{2.5}$ and PM_{10} (tiny particles in the air that can be harmful to health). AQC supplied a report compliant with the standards of the airspace change process document CAP1616i (Ref 4).

5.5.2 More details are provided in the Full Options Appraisal document and, separately, as a detailed technical Annex D, including details of concentration

targets, limits, baseline characteristics, monitoring evidence, receptors and assumptions. Below we reproduce the summary and conclusion of that report.

5.5.3 The smaller Embraer E190 is currently the most frequent user of LCY. This would continue for a few years after the introduction of the new procedure until the fleet mix rebalances, to include greater proportions of newer aircraft types (including our example A320neo which carries more passengers). Without the ACP, E190 flights would continue but would gradually be replaced over time by the E195-E2 which carries fewer passengers than the A320neo. Over the 12-year forecast period this results in lower aircraft emissions compared to the future baseline (without-change) scenario.

5.5.4 The model has shown that concentrations of nitrogen dioxide, PM_{10} and $PM_{2.5}$ will be well below their respective air quality objectives in both future assessment years and in both with-change and without-change scenarios. The with-change scenario result in slightly lower concentrations than the without-change scenarios, for all pollutants, but the differences are small.

5.5.5 The air quality impacts of the ACP, although slightly beneficial, are all **negligible**.

5.6 Tranquillity and biodiversity

5.6.1 The airspace change process requires us to consider our impacts with specific reference to National Parks and National Landscapes (formerly known as Areas of Outstanding Natural Beauty or AONB), along with locally-identified tranquil aeras to be considered. In Stage 2 the RSPB's Rainham Marshes nature reserve (highlighted green in Figure 24) was identified as a local tranquillity and biodiversity area, approximately 10km east of LCY.

5.6.2 There are no National Landscapes (AONBs) in the region which are overflown five times or more[15] per day by our aircraft.

5.6.3 RSPB Rainham Marshes is currently overflown on average 47 times per day, by arrivals to runway 27. Daily overflight ranges from nil (when runway 09 is in use) to 107 (the busiest single day for runway 27 arrivals in the baseline year of 2024).

5.6.4 Figure 24 below provides forecast overflight data for 2027 and 2038.

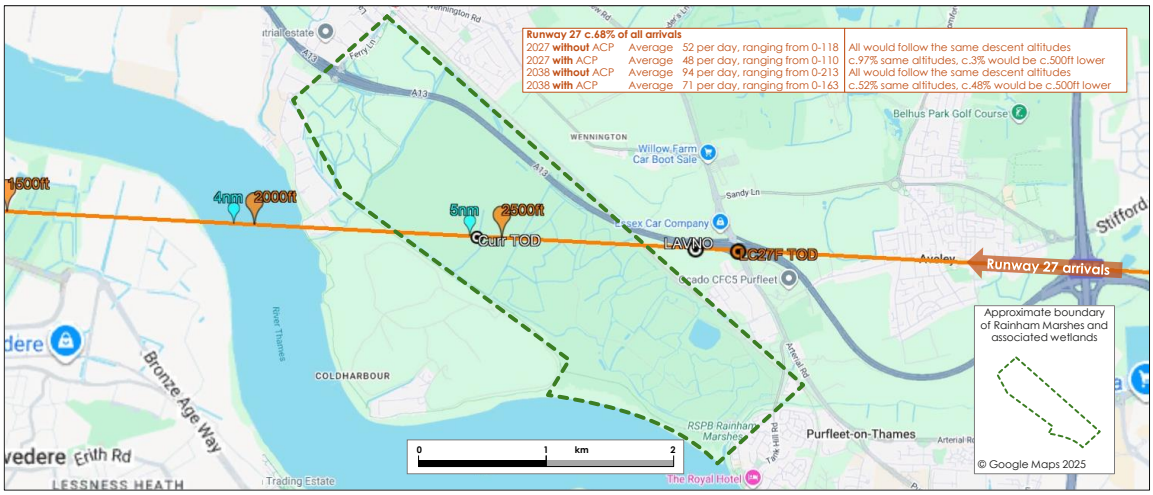


Figure 24 Tranquillity considerations: RSPB Rainham Marshes detail

5.6.5 Under this proposal, a minority proportion of runway 27 arrivals would be c.500ft lower over Rainham Marshes, at c.2,500ft using the 4.49° approach slope instead of c.3,000ft. Most flights would still be at c.3,000ft using the 5.5° approach slope, and overall there would be slower ATM growth with this change, leading to a

[15] In accordance with CAP1616i (Ref 4) p.23 paragraph 5.35.

reduced daily average and reduced daily peak of overflights compared to without-change.

5.6.6 From a biodiversity point of view, our Stage 2 Habitats Regulations Assessment (HRA) screening report remains correct. On that basis and in view of our additional assessment of impacts on Rainham Marshes above, we conclude that there would be no significant changes to biodiversity as a result of the ACP. We consider that the with-change option is preferable due to the expected benefit of the reduction in overall numbers of flights over the 12-year period, compared to the without-change option.

5.6.7 Finally, aviation biodiversity impacts can be linked to ground based infrastructure changes. This proposal does not require any such changes.

5.7 Greenhouse gas emissions

5.7.1 We commissioned EcoLyse Ltd, with expertise in aviation fuel and greenhouse gas emissions analysis, to provide a detailed report compliant with the airspace change process CAP1616i (Ref 4).

5.7.2 Full details of their study are provided in the Full Options Appraisal document and, separately, as a detailed technical Annex E.

5.7.3 Over the 12-year period we forecast a saving (benefit) of **18,380 tonnes of CO_2e**, comparing without-change and with-change.

5.7.4 This averages to be a **9.93kg/passenger** benefit over the same period.

5.7.5 Using the DfT's WebTAG system to calculate the monetised impact on wider society due to greenhouse gas emissions (a standard element of the airspace change process), the benefit would be **£3.7m NPV** over 12 years.

5.8 Fuel use/burn

5.8.1 EcoLyse also produced a fuel use assessment as part of their report (see Full Options Appraisal and separate detailed technical Annex E, as above for greenhouse gas emissions).

5.8.2 Over the 12-year period we forecast a saving (benefit) of **5,780 tonnes of fuel**, in the with-change option compared to the without-change option.

5.8.3 Using a November 2025 fuel price and currency exchange snapshot, over the 12-year period airlines that invest in the fleet change would save a combined £3.4m in fuel costs. This averages to **£1.84/passenger** benefit over the same period.

5.8.4 Monetised using 2023 as the price base year and calculated in accordance with the DfT standard transport analysis guidance (TAG) method, the benefit over 12 years would be **£2.6m NPV**.

5.8.5 The reduction in fuel burn and greenhouse gas emissions is due to the use of modern, efficient aircraft with greater passenger capacity. With this change we predict our growth in ATMs to be slower, with **c.76,500 fewer overall flights** by 2038 and **c.14m more passengers** compared to our forecast growth without-change (more flights of smaller aircraft).

5.9 Passenger surface access time savings – quantified and monetised

5.9.1 This represents an additional benefit of the airspace change and reflects improved accessibility within the London airport system. York Aviation, our expert transport consultants, have analysed how this is forecast to influence passenger choice. Passenger surface access time savings are reported transparently within the cost-benefit analysis, with sensitivity testing given the inherent uncertainty in future passenger airport choice and airline market development. For full details of their analysis see the separately-supplied Annex B.

5.9.2 They conclude that the customers choosing to travel to LCY instead of alternative London airports would save 8.5 minutes per passenger (over 228 years

combined), which is valued at **£59.1m NPV** – this additional benefit is evidence-based, but naturally has inherent uncertainty on future passenger and airline behaviours, therefore we claim it only as an additional benefit.

5.9.3 For more details see the FOA document section 3.6, and further information in technical Annex B Cost Benefit Analysis published separately.

5.10 Cost-benefit analysis and statement of preferred option

5.10.1 Overall, monetising the proposed change in accordance with airspace process requirements, the benefit over 12 years would be **between £38.4m-£97.4m NPV**, with the lower figure excluding the less-certain £59.1m passenger access benefit.

5.10.2 Our preferred option is to progress the ACP and introduce the proposed flight procedures, enabling this benefit and the quicker transition to a modern efficient fleet at LCY.

6. Aviation technical information

6.1 About this section

6.1.1 This section is aimed at those in the aviation industry and uses some common aviation terms.

6.2 IFP and navigation specifications

6.2.1 This proposal plans to introduce four additional RNAV1 Transitions, two from waypoint GODLU via the same Point-Merge waypoints through to each runway, and two from JACKO likewise. These would be published alongside the unchanging ODLEG1G/1J (09) and LAVNO1G/1J (27) arrival transitions, and would be "truncated copies" of the original Transitions. Our working expectation is for the copies to truncate at TOPDU for Runway 27 and OSVEV for Runway 09. Two RNP-AR Approaches, one per runway, would link from TOPDU or OSVEV.

6.2.2 The main technical difference would be the closed-loop nature of the runway 09 RNP-AR approach. The current ODLEG arrivals end at that waypoint on a heading, then intercept the ILS to land. The new procedure would complete the PBN[16] track to the runway by adding appropriately defined waypoints. It also builds in a missed approach procedure.

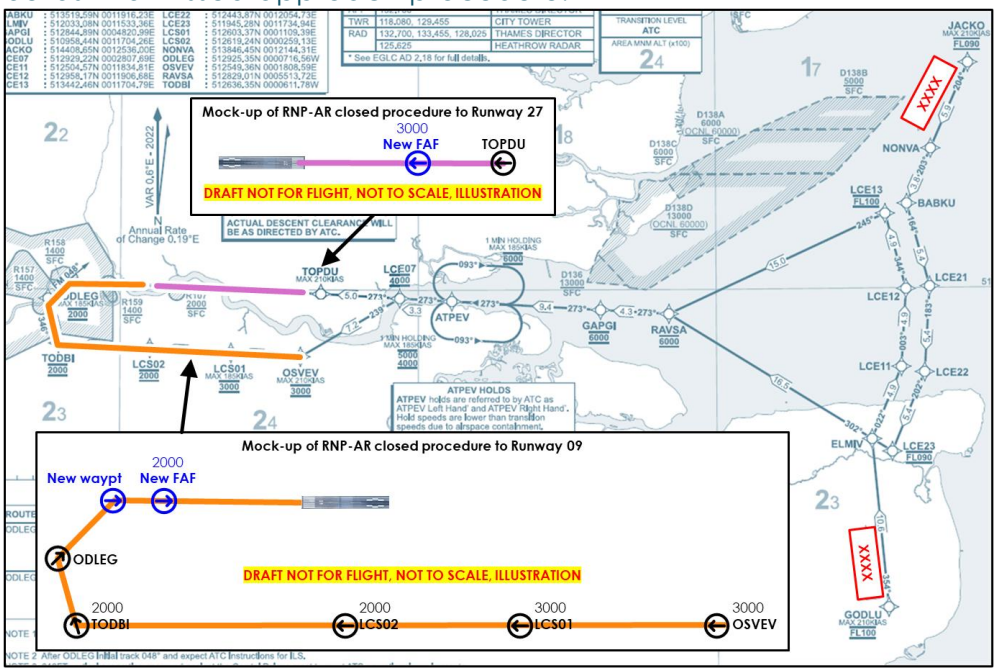


Figure 25 Mock-up of how the RNP-AR approaches link from the new RNAV1 transitions(not for operational use)

[16] Performance Based Navigation

6.2.3 For runway 09, speeds are expected to remain 210KIAS early downwind, then 180KIAS late downwind until the final turn onto approach at 160KIAS.

6.2.4 Likewise the runway 27 arrivals will also complete the PBN track to the runway and build in a missed approach; the current LAVNO arrivals link to the ILS. Speeds for this straight-in approach are expected to remain 210KIAS then 185KIAS for finals.

6.2.5 As described earlier in this document, the runway 09 approach will use 4.49° from a 2,000ft FAF, the runway 27 approach will use 4.49° from either a 3,000ft or 2,000ft FAF. If the runway 27 approach is from 2,000ft then the descent will be from a 3,000ft Intermediate Fix.

6.2.6 The technical integration of missed approaches will be finalised later in the design process. While these are required for contingency purposes and pilot briefing, they are rarely (if ever) actually flown. In practice, radar vectors to rejoin the Transition or the RNP-AR procedure would continue to be ATC's typical resolution of a missed approach, reflecting today's operation.

6.2.7 Initial estimates are the RNP values would start at 1.0 at the outer elements and decrease to 0.3 on final. However, if there are operational advantages, we may reduce the value as far as RNP 0.1. Early development work indicates the RNP values are likely to be 0.3 and 0.12 for the inner elements.

6.2.8 The final RNP value(s) have not yet been determined. **Aircraft operators: when providing your response, please include feedback on the topic of navigation specifications/RNP values in the text box at the end of the survey.**

6.2.9 As described in the ACP Stage 2 material, PAPIs will remain at 5.5° and therefore flight crew would need to disregard them during final approach and an appropriate notation will be added to the AIP charts.

6.3 Impact on Ministry of Defence operations, general aviation, other airports and other airspace users

6.3.1 This proposal is not expected to impact any MoD, GA, other airports or other airspace users. There are no proposed changes to where aircraft would fly except for the final approach slope change, and there would be no changes to controlled airspace.

6.3.2 NATS, the contracted air navigation service provider (ANSP) at our airport and their sister organisation NERL (which handles air traffic across the UK) may require additional briefing for some controllers, however this is not expected to impact operations.

6.4 Impact on AIP Noise Abatement procedures

6.4.1 Presuming familiarity with the UK AIP, EGLC-AD-2.21 defines the noise abatement procedures for LCY. Item c states that "*Aircraft making approaches without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS*."

6.4.2 Under this proposal, that instruction cannot be followed. We recommend adding the following sentence to Item c: "*An exception to this is where aircraft are operating in accordance with ATC instructions to follow a notified instrument flight procedure with defined vertical guidance below the ILS descent path*."

6.4.3 There may be other instances in EGLC-AD where text or diagrams need adjustment to avoid contradiction or confusion.

7. Taking part in the consultation

7.1 Our consultation strategy

7.1.1 Separately published, and core to this proposal, our Consultation Strategy document explains who our stakeholders are, our approach to the consultation itself, the materials we will use, the length of time it is active, the main activities within that timeline, and what happens after consultation closes. We recommend you read that document for full details.

7.2 When does the consultation start and end?

7.2.1 The consultation launched just after midnight on **Monday 2nd March 2026** and closes just before midnight on **Sunday 17th May 2026**, a period of eleven weeks.

7.2.2 On or before the launch, we will email our stakeholder list with our website links and details on how to respond. We will offer online meetings (webinars) with groups of stakeholders such as local authorities, MPs and other representative organisations.

7.3 Can I meet with you and ask questions?

7.3.1 Yes! On our websites (see below) you can find out how to book a slot in an online group meeting, and how to find the in-person drop-in events.

7.4 The consultation websites

7.4.1 We have two websites each complementing the other.

7.4.2 Our own consultation website link is:

www.LondonCityAirport.com/ACP

7.4.3 Here, you can explore our digital exhibition room to find out more about the consultation, including:

- How to join an online meeting (webinar), where you can watch a presentation and ask us questions
- How to attend one of the in-person drop-in events where you can talk with us, take away a leaflet or a paper consultation document, and even complete the survey on one of our internet-connected devices
- Where our static exhibits are located, one inside the airport terminal, the other bookable for meetings with us in our nearby corporate office, both a short distance from the Docklands Light Railway station.

7.4.4 You can also navigate to the consultation website service known as Citizen Space, which all airspace change sponsors must use. Our direct link is:

www.consultations.airspacechange.co.uk/london-city-airport/rnp-ar-approaches

7.4.5 Here, you can:

- Read about the consultation and download the core documents
- Download supporting technical material for more detailed study
- Download KMZ files suitable for use in mapping applications, such as Google Earth
- Take a survey to submit your response (see below)

7.4.6 We will also maintain a Frequently Asked Questions document, which will be updated during the consultation in response to questions from stakeholders.

7.5 How do I respond?

7.5.1 The airspace change process requires all responses to be uploaded to the Citizen Space website service, so the best and simplest way is to visit **www.consultations.airspacechange.co.uk/london-city-airport/rnp-ar-approaches** and click on the section "Give us your views" near the bottom of the page.

7.5.2 A paper copy of the core consultation documents, plus a paper survey form, will be sent on request by emailing LCY-ACP@LondonCityAirport.com. This administrative email address **cannot** be used to send your response, only to request information about the consultation documents, webinars and drop-in sessions.

7.5.3 We prefer you to complete the online survey, and we don't expect many responses to be supplied on paper, but we will accept them at the following postal address:

Airspace Change Consultation
City Aviation House
Hartmann Road
London E16 2PX

7.5.4 We will transcribe paper survey forms onto Citizen Space on the respondees' behalf – this is a CAA requirement.

7.5.5 Postal responses will be included if they arrive up to three working days past the closure date of Sunday 17th May, i.e. Wednesday 20th May.

7.5.6 Late postal responses arriving after Wednesday 20th May might be included in the subsequent analysis but this is not guaranteed – please use the website for last-minute responses, or post yours in good time.

7.5.7 **All responses will be published**, and respondents can ask for their responses to be published anonymously (i.e. their name removed). Note that the CAA will see all raw responses including names, as will LCY and those working on our behalf such as specialist consultants, administrators and subject matter experts.

7.5.8 Responses will be moderated, and any unacceptable content removed prior to publication on the CAA consultation page. Moderation is neither a censoring nor a filtering tool.

7.6 What questions will we ask, in the survey?

7.6.1 We want to know a little about you, and then the extent the proposed change would impact you, near the airport and further away. We also want to know the reasons for your response. Our survey will ask:

About you:

Your name, your email address, your postcode (or that of your organisation), and whether you are representing yourself, or an organisation

About how the proposed change would impact you:

For runway 09 arrivals near the airport below 4,000ft to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

For runway 09 departures near the airport below 4,000ft, to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

For runway 27 arrivals near the airport below 4,000ft, to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

For runway 27 departures near the airport below 4,000ft, to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

For arrivals further from the airport (7,000ft-4,000ft), to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

For departures further from the airport (4,000ft-7,000ft), to what extent would the change impact you or the people you represent?

1	Strong negative impact
2	Medium negative impact
3	Slight negative impact
4	No change in impact
5	Slight positive impact
6	Medium positive impact
7	Strong positive impact
N/A	This question is not applicable to me/us
Don't know	I don't know what the change might mean for me/us

Overall, to what extent do you support introducing this proposed change?

1	I/we strongly object
2	I/we somewhat object
3	I/we neither support nor object
4	I/we somewhat support
5	I/we strongly support
Don't know	I don't know what the change might mean for me/us

Please provide **reasons for your responses** below, such as how the changing impacts would affect you, and tell us any **additional information** you think we should know.

Aircraft operators, please add information on the use of navigation specifications/RNP values.

Property developers and their agents, please add information on current and planned projects within the Final Approach Protection Area.

Do you have additional information to send us? (If Yes is selected, an additional question will allow for a file upload).

7.7 What will you do with the information we provide?

7.7.1 We will collate and review all responses. We will categorise and theme them which will help us understand and quantify the feedback.

7.7.2 This will identify key topics and information which may lead to a change in the proposed design, and feedback which would not lead to a change.

7.7.3 We will produce a consultation response document for the CAA to review. This document will include analysis of the consultation feedback, summarising the key themes raised by respondents, including any feedback or themes we propose to carry forward to Stage 4 for further consideration.

7.7.4 Following the CAA review, we will finalise and publish the outcome in a consultation response document on the CAA's airspace change portal. We anticipate this to be published in June 2026.

7.7.5 This document will summarise "We asked, and you said". This will conclude Stage 3 of the airspace change process.

7.8 What happens after that?

7.8.1 We move into Stage 4 of the CAP1616 process. We will collate, review and categorise all of the feedback we receive from you. We may decide to make one or more changes to our proposal, or we may not; either way we will explain our reasons (for example, some feedback may recommend action that is not possible for technical reasons, we will explain why).

7.8.2 Then we will write, publish & submit our formal ACP application to the CAA, including which changes may have been made and which have not been made, and reasons why. We expect this to happen in July 2026.

7.8.3 After we publish and submit the ACP, the CAA will take time to assess the application. They may ask us questions or for clarifications, we will respond and normally these will be published except where commercially confidential.

7.8.4 The CAA will then make its regulatory decision on our ACP application. We expect this to happen late September 2026 if all progresses on schedule with our plans.

7.8.5 If our application is successful and the CAA decides to approve, and following a technical deadline on Friday 23rd October 2026, the formal change to the UK's aviation database (known as the Aviation Information Publication, or AIP) would take place on Thursday 21st January 2027. From that day forward, flights may use the newly implemented flight procedures.

8. Reversion statement

8.1 What if the implementation needs to be reversed?

8.1.1 This proposal has been carefully prepared to give it the best opportunity for successful completion. However, it is prudent to acknowledge that unexpected events could arise.

8.1.2 In the unlikely event the proposal requires reversal once approved and implemented, temporary and/or permanent reversion to the pre-implementation state would be relatively straightforward in theory, but complex in practice.

8.1.3 In theory, the additional flight procedures could be temporarily suspended or permanently withdrawn, leaving only the original arrival routes available. This could initially be done via NOTAM or by adding Route Availability Document (RAD) restrictions before a permanent change is made.

8.1.4 However, in practice airlines build their flight schedules around their fleet. Changing that mix would likely have significant consequences on aircraft operators, which would suddenly need to use the smaller aircraft on the 5.5° approach slope. The noise and fuel benefits would no longer accrue.

8.1.5 Should such a reversal manifest, we would engage with the CAA and work with them to identify a solution. This could be, for example, a temporary suspension while a new modified ACP is progressed.

8.1.6 We do not expect this to occur, but we have considered what might happen and how to progress.

9. Appendix A – AMS Alignment

9.1.1 This ACP is **entirely separate** from the UK's Future Airspace Strategy Implementation South, or FASI-S, under the UK Government's Airspace Modernisation Strategy (AMS).

9.1.2 Like all London airports we have a FASI ACP, find out more here.

9.1.3 Note that **all** southern England FASI ACPs will, over time, be subsumed into the nascent UK Airspace Design Service, or UKADS.

9.1.4 With this in mind we set out below the degree of consistency between the ACP and the AMS.

Extract from our Stage 2 document, Section 17 Appendix I.

Figure 26 ACP alignment with the strategic objectives of the AMS

AMS Strategic Objectives	Alignment
Maintaining and, where possible, improving the UK's high levels of aviation safety	LCY supports the prioritisation and continuous improvement of aviation safety, including the introduction of new aviation technologies, such as RNP-AR, to help manage residual operational risk. RNP-AR procedures provide improved access to airports in challenging terrain environments like LCY; the lateral and vertical navigation (VNAV) capabilities provided by RNP-AR equipped aircraft provide improvements in operational safety and reduces the risk of Controlled Flight Into Terrain (CFIT).
Integration of diverse users – including needs of defence and security	This ACP considers new LCY approach procedures that remove the current steep approach certifications associated with operating on a 5.5° glideslope. This would open the airport to more modern and efficient aircraft operations, increasing the range of operators and aircraft types that can operate at LCY, whilst accommodating our existing commercial and private transport users on extant procedures. It integrates the needs of commercial and General Aviation air traffic, as well continuing to support older generation aircraft types alongside more modern aircraft types, by ensuring compatibility between aircraft operating on the existing ILS and aircraft on the proposed RNP approach procedures.
Simplification – reducing complexity and improving efficiency	Aircraft performance and navigation capabilities have changed significantly since the first introduction of ILS procedures at LCY. Through the introduction of RNP-AR approaches, this ACP seeks to better utilise the performance capabilities of modern aircraft, using performance-based navigation to provide more efficient and accessible approach routes. RNP-AR procedures would improve network resilience by systemising the approach procedure (reducing the need for controller intervention). Additionally, by supporting aircraft types with increased passenger capacity, this change supports a reduction in traffic volumes, which would contribute to reducing air traffic delays, improving runway and airport capacity, and increasing London Terminal Airspace capacity.
Environmental sustainability – an overarching principle applied through all modernisation activities, in accordance with the Government's environmental objectives	In accordance with the Government's key environmental objectives with respect to air navigation, as set out in the Government's Air Navigation Guidance [Ref 25], this ACP seeks to minimise the environmental impact of aviation by limiting and, where possible, reducing the number of people significantly affected by adverse impacts from aircraft noise. This airspace change proposal maintains close alignment with existing published airspace arrangements; there are no new National Parks, AONBs, or noise sensitive buildings overflown. No new populations are overflown. RNP-AR procedures could increase the operation of more modern, 'quieter', 'cleaner' aircraft at LCY which could improve environmental impacts compared to older aircraft models, due to advancements in airframe design and more fuel-efficient engines which reduce fuel consumption, lower overall emissions of pollutants during flights and reduce noise. The airspace change has the potential to reduce air traffic growth compared with the baseline scenario (through fleet mix changes which support aircraft with greater passenger capacity) which is also anticipated to reduce environmental impacts.

10. Appendix B – Other Aircraft Types

10.1 How and when other aircraft types will be assessed

10.1.1 While the ACP focuses exclusively on the A320neo, stakeholder feedback from Stages 1 and 2 indicated interest from airlines and manufacturers regarding other potential aircraft types that may wish to operate the new RNP-AR procedure in the future.

10.1.2 Should an airline request the use of the procedure with an alternative aircraft type, LCY will require the requesting party to provide a full environmental assessment and detailed forecasts. This must demonstrate that introducing the aircraft would not materially increase environmental impacts beyond those already assessed in the "with change" scenario. In other words, the new aircraft type will be the latest new generation and should not generate any significant or perceptible impacts by using the procedure.

10.1.3 We will update the Airport's Aerodrome Information Publication (AIP) to set out this prior permission requirements for using the new procedure.

10.1.4 LCY would evaluate such a request only when submitted, and we do not anticipate any requests before the summer 2028 schedule.

10.2 Assumptions if other aircraft types are to be considered

10.2.1 Since any alternate aircraft type is likely to be smaller than the A320neo, their smaller passenger capacity could mean more aircraft movements would be required to achieve 9mppa, which would need careful environmental scrutiny.

10.2.2 If any such proposal were to come forward, it would need to demonstrate, to LCY's satisfaction, that the aircraft type would:

- Not produce environmental impacts materially greater than those in the ACP's "with change" scenario;
- In any event, demonstrate environmental impacts that are better than the "without change" scenario;
- Not breach the any of the airport's planning permission conditions, and
- Not compromise the airport's environmental targets, including the requirement to achieve a noise contour of 7.2km².

10.2.3 In addition to these airport specific requirements, there are also requirements for RNP-AR certification by the operator's state regulator which includes a safety case, flyability study and specific crew training.

10.3 Rationale and evidence that other aircraft types would not materially change the environmental impacts

10.3.1 Because only the A320neo forms part of LCY's environmental modelling, and because its higher capacity enables fewer movements to achieve 9mppa, the ACP clearly demonstrates the net environmental benefits of this approach.

10.3.2 For any future aircraft type to be accepted for RNP-AR procedure, LCY will require of the requesting party:

- A complete aircraft-specific environmental assessment;
- Forecasts showing general adherence to the "with change" scenario assumptions; and
- Evidence showing no significant or perceptible environmental impacts beyond those already evaluated.

10.3.3 Only if these conditions are satisfied would LCY consider supporting the use of the RNP-AR procedure by an alternative type.

11. Appendix C: Glossary

Acronym or word	Meaning
ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
Altitude	The distance, in feet, above mean sea level. Used in aviation to describe an aircraft's vertical distance from a local datum, rather than referring to ground level. 3,000ft altitude is 3,000ft above mean sea level in the region. See also FL Flight Level.
AMS	Airspace Modernisation Strategy
ANSP	Air Navigation Service Provider
ATC, ATCO	Air Traffic Control (Officer)
ATM	Air Traffic Management
ATS	Air Traffic Service
BADA	Base of Aircraft Data
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication, followed by a number. A document published by the CAA, in some cases these are process related, such as CAP1616 (Ref 1) introducing the UK's airspace change process.
CAS	Controlled Airspace
CFSP	Commercial Flightplan Service Provider
CTA	Control Area
DAATM	Defence Airspace and Air Traffic Management
DP	Design Principle (see Stage 2 documentation)
DPE	Design Principle Evaluation (see Stage 2 documentation)
FIR	Flight Information Region
FL	Flight Level. The distance in hundreds of feet above a worldwide average pressure level. Used higher, away from airports, where the relative vertical distance between aircraft is more important than their absolute distance from the surface. FL310 is 31,000ft above this imaginary datum. For this ACP the differences between altitude, FL and airport elevation are negligible.
FOA	Full Options Appraisal (see complementary document)
GA	General Aviation
IFP	Instrument Flight Procedures
IFR	Instrument Flight Rules
ILS	Instrument Landing System, the most commonly used approach type at LCY, set to a slope of 5.5°
IOA	Initial Options Appraisal (see Stage 2 documentation)
LCY	London City Airport
LTMA	London Terminal Control Area
MoD	Ministry of Defence
NATMAC	National Air Traffic Management Advisory Committee
NERL	NATS En Route Ltd, the UK's largest ANSP
PBN	Performance Based Navigation
RNAV1	Area navigation with a 1nm precision for 95% of the route (in practice, much close for much longer)
RNP-AR	Required Navigation Performance-Authorisation Required, a type of air navigation specification
SID	Standard Instrument Departure
SME	Subject Matter Expert
STAR	Standard Arrival Route

End of Stage 3 Consultation Document