



***AIRSPACE MODERNISATION
AIRSPACE CHANGE PROPOSAL
(ACP-2021-056)***

STAGE 2 STAKEHOLDER ENGAGEMENT SUMMARY





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1 INTRODUCTION

1.1 Purpose of this Document

1.1.1 Heathrow is undertaking an Airspace Change Proposal (ACP) to modernise its airspace to make use of modern navigation technology to improve environmental performance, reduce delays and manage traffic in ways that mitigate, where possible, the impact on local communities.

1.1.2 This document describes the stakeholder engagement undertaken throughout Stage 2 of Heathrow's ACP to introduce Airspace Modernisation. Heathrow's approach to stakeholder engagement was designed to meet the engagement requirements of the Civil Aviation Authority's (CAA) airspace change guidance (CAP1616). This document forms part of the suite of submission documentation Heathrow has produced for the CAA's Stage 2 Gateway of the CAP1616 process and is intended to be read alongside those documents. Heathrow's Stage 2 submission documentation includes:

- **Step 2A Options Development:**
 - Development of the Comprehensive List of Options (CLOO)
 - Design Principle Evaluation (DPE)
 - Step 2A Engagement on the CLOO
 - *Step 2A Appendices A to F*, which contain evidence of all CLOO engagement activities
- **Step 2B Initial Options Appraisal:**
 - Approach to the Initial Options Appraisal (IOA)
 - Results of the IOA
 - Shortlisting of options
 - *Step 2B Appendices A to C*, which contain the IOA for all options
- **Stakeholder Engagement Summary Document (this document)**
 - Heathrow's stakeholder engagement throughout Stage 2
 - *Stakeholder Engagement Appendix A*, which contains a correspondence log listing all engagement activities and associated stakeholder correspondence.
 - *Stakeholder Engagement Appendices B to F*, which contain evidence of all Stage 2 engagement activities



2. APPROACH TO ENGAGEMENT

2.1 Summary of Stage 2 ACP

2.1.1 Stage 2 of the CAP1616 process is split into two steps: Step 2A Options Development, and Step 2B Initial Options Appraisal. This document covers engagement activities throughout Stage 2.

2.1.2 Step 2A requires Heathrow to first develop a Comprehensive List of Options (CLOO) which address the Statement of Need, and which align with the Design Principles (DPs).

2.1.3 Heathrow's Comprehensive List of Options (CLOO) consists of 181 options. These are split into 40 groups of Performance Based Navigation (PBN) Departure options, 93 PBN Arrival options and 48 Vectored Arrival options. These options included 12 Baseline 'Do Nothing' options (for PBN Departures, PBN Arrivals and Vectored Arrivals to/from each of Heathrow's four runways – runways 27L, 27R, 09L and 09R). At Stage 2, all options have been developed and assessed per single runway operation, not as a complete system of westerly and easterly departures and arrivals to/from both runways in operation together. This allows us to consider many more options for a final solution. At Stage 3 Heathrow will develop 'system options'.

CAP1616 requires the change sponsor to test the options with the same stakeholders engaged during Step 1B, to ensure that they are satisfied that the design options are aligned with the DPs and that Heathrow has properly understood and accounted for stakeholders' concerns. Heathrow must then produce a Design Principle Evaluation (DPE) that sets out how the design options have responded to each of the DPs.

2.1.4 The Initial Options Appraisal (IOA) at Step 2B is the first of three stages of options appraisal required by CAP1616. Initial operational and environmental analysis was undertaken on all route options to identify the potential flight paths that are operationally feasible (as far as we can reasonably know at Stage 2) and consistent with the DPs set with stakeholder input at Stage 1.

2.1.5 As part of the Stage 2 Develop & Assess Gateway, the CAA will not assess the appropriateness of any of the individual options or approve the airspace change. They will provide an assessment that Heathrow has (in the CAA's view):

- identified all the possible options;
- evaluated the design options against the Design Principles in a fair and consistent manner;
- ensured, as far as possible, that stakeholders are satisfied that the design options are aligned with the Design Principles and that Heathrow has set out how decisions have been taken based on stakeholder feedback; and,
- evaluated that the design options are compliant with the required technical criteria.



2.2 CAP1616 Engagement Requirements

- 2.2.0 CAP1616 Step 2A requires sponsors to undertake stakeholder engagement following the development of the CLOO. At the Stage 2 Gateway, the CAA will consider whether Heathrow has ensured, as far as possible, that the same stakeholders engaged with at Step 1B are satisfied that the comprehensive list of design options are aligned with the DPs. This includes evidence of stakeholder feedback, and a demonstration of how this has been understood and influenced decisions related to the design options.
- 2.2.1 Heathrow recognises that its stakeholders are very interested in the work being undertaken for this ACP and, given that the work in Stage 2 is complex, Heathrow felt that stakeholders would value more engagement than is required by CAP1616. Heathrow has therefore conducted several rounds of additional engagement with community and industry stakeholder representatives in Stage 2, beyond the requirement.
- 2.2.2 Heathrow's Stage 2 submission includes evidence of all stakeholder engagement that took place throughout Stage 2, including workshop invitations and attendance, presentations, meeting notes, Stakeholder Engagement Records (SER's), stakeholder feedback forms, emails, and letters in *Stakeholder Engagement Appendices A to F* of this document.

2.3 Heathrow's Engagement Plan

- 2.3.1 Heathrow's Stage 2 engagement plan was developed to allow for several rounds of engagement on the key elements of the Stage 2 technical work.
- 2.3.2 Heathrow has engaged regularly with stakeholders through a mixture of methods to continue a two-way dialogue throughout Stage 2. Engagement comprised of face-to-face and online workshops, focus groups and briefing sessions. These are summarised in this section and described in more detail in Sections 3 to 8 of this document.
- 2.3.3 Following options development, Heathrow asked stakeholders whether they were satisfied that the list of options was aligned with the DPs developed at Stage 1, and whether they had any feedback on Heathrow's approach to developing the CLOO, or the potential future operational concepts that Heathrow described alongside the CLOO.
- 2.3.4 Heathrow also conducted public focus groups and schools focus groups in areas local to the airport, consistent with the Stage 1 approach to engagement.
- 2.3.5 Heathrow's Stage 2 stakeholder engagement included a public awareness campaign, building on the campaign that ran during Stage 1 to spread greater awareness of this ACP across the potentially affected area. The campaign advertising directed people to Heathrow's airspace modernisation webpages on its public website¹ to learn more about the project. The webpages were updated to explain the work taking place at Stage 2, including an updated version of the communications video developed during the Stage 1 public awareness campaign. The purpose of the video was to inform and update members of the public on the progress of Heathrow's ACP, using consistent and accessible imagery and iconography to aid stakeholders' understanding.

¹ [Heathrow Airspace Modernisation webpage](#)



- 2.3.6 Two workshops titled “Methods and Metrics” were held with technically minded stakeholders from the Heathrow Noise and Airspace Community Forum (NACF), to support them in understanding Heathrow’s proposed approach to developing and assessing options in more detail, and to seek their feedback on it.
- 2.3.7 In addition to these more technical workshops, Heathrow carried out online engagement sessions in relation to the DPE and the IOA where the approach to each piece of work was described, and a summary of the outputs was shared with a broader range of stakeholder representatives.
- 2.3.8 Heathrow also undertook *ad-hoc* engagement with a range of interested stakeholders throughout Stage 2. This engagement included email correspondence, online meetings and in-person meetings. This engagement is described in detail in Section 8 of this document.
- 2.3.9 The timeline for Stage 2 Engagement is shown in Figure 1 below, displaying when engagement took place (as shown by the yellow boxes) alongside, and in support of, the technical work (as shown by the pink boxes).

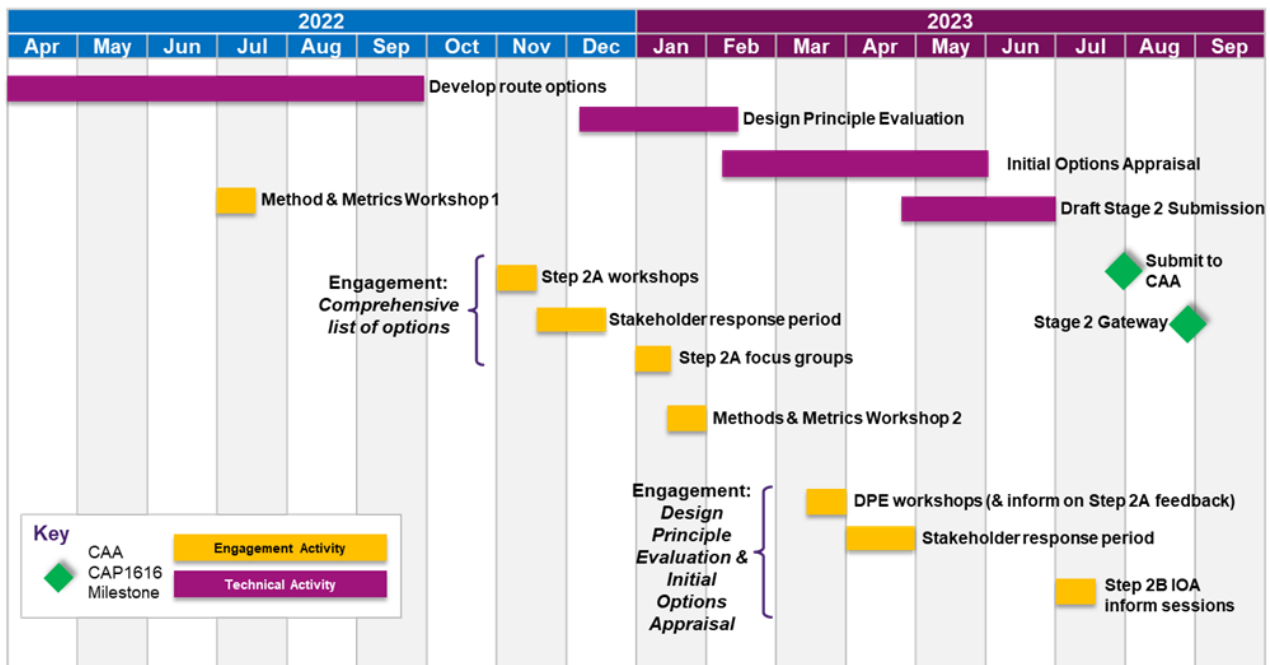


Figure 1: Timeline for Stage 2 Engagement activities

2.4 Stakeholders

- 2.4.1 Heathrow invited all stakeholders to engage at Stage 2 who were engaged at Stage 1, regardless of whether they responded at that stage. For the CLOO, DPE and IOA workshops, stakeholders were grouped in to two for engagement to enable the sessions to focus on the issues that were most relevant to each group. ‘Industry stakeholders’ includes airlines, airports, and general aviation groups. ‘Non-industry stakeholders’ includes community representatives, local authorities, environmental groups, and public bodies. The same set of material was shared with each group.
- 2.4.2 Heathrow’s stage 2 stakeholders included the following industry and non-industry stakeholders:



- Heathrow's Airport Consultative Committee (CISHA)
- Local authority representatives, including Heathrow Strategic Planning Group (HSPG)
- Community group representatives
- Environmental group representatives
- NATS (NERL) and other surrounding airports
- Public bodies, such as the CAA and the Department for Transport
- Airlines and airline representative groups
- General Aviation groups

2.4.3 Stakeholder lists were reviewed at the beginning of Stage 2 to ensure the list of contacts was up to date and to determine whether any additional stakeholders should be included in our engagement at Stage 2. Heathrow updated the contact list with representatives of communities who requested to be included. This includes stakeholders who are not currently overflowed but could be in future.

2.4.4 Heathrow is aware that some stakeholders prefer to be engaged only by email or might only choose to engage at later stages of the ACP. This was considered when developing specific arrangements for how best to engage with each group during Stage 2. The full list of stakeholder groups engaged for the CLOO workshops, and the method of engagement, is included in the *Step 2A Options Development* document. For both the DPE and IOA engagement sessions, the method of engagement (e.g. email only or an invite to a session) was replicated from the CLOO engagement.

2.4.5 Where a stakeholder representing a key organisation consistently failed to engage throughout Stage 1 and Stage 2, Heathrow made best efforts to identify another individual from that organisation to add to the stakeholder list.



3. METHODS AND METRICS WORKSHOP 1

3.1 Method of Engagement

- 3.1.1 Heathrow's first 'Methods and Metrics' workshop (known as 'M&M1') was held in July 2022, towards the beginning of Step 2A. The purpose of the workshop was to share and gain feedback on the proposed methodology for developing a CLOO with a smaller group of highly engaged and technically minded stakeholder representatives.
- 3.1.2 This workshop was intended to provide an opportunity for a 'deep dive' on methods and metrics with stakeholder representatives who were keen to understand and challenge Heathrow's approach to a greater level of detail. Following the Stage 1 engagement on Design Principles, feedback was received from a few members of Heathrow's Noise and Airspace Community Forum (NACF) stating that they would appreciate an opportunity to discuss and understand Heathrow's approach to the ACP at a greater level of detail. Questions were raised at Stage 1 workshops about the methodology Heathrow would use, and the metrics that would be applied to compare the options. Heathrow therefore invited members of the NACF (which include community and local authority representatives) to register their interest in attending the Methods and Metrics workshop. The NACF member list is available in Section 4.3 of Heathrow's *Step 2A Options Development* document. The workshop provided an opportunity to discuss the metrics Heathrow planned to use to identify options and to then assess the high-level impacts and benefits of the options in a suitable way at this early stage.
- 3.1.3 NACF members were told that attendees would be expected to:
- a) have an interest and an ability in discussing and analysing data; and,
 - b) represent the interests of the wider forum members and other community stakeholders in a balanced way.
- 3.1.4 Heathrow received eleven expressions of interest and invited them all to attend the workshop at the Compass Centre on Tuesday 5 July 2022 (10:00 to 14:00 with lunch provided). Heathrow also invited the Friends of Richmond Park group, who are not members of the NACF, but through separate engagement had registered their interest in engaging with Heathrow's technical work in more detail. In total, eleven stakeholders attended the workshop. The attendance list is shown in Table 1 below and the associated correspondence is available in *Stakeholder Engagement Appendix B*.
- 3.1.5 There were nine Heathrow representatives who joined the workshop from the Airspace, Communities, Carbon and Noise functions of the business. The Heathrow team was joined by an independent facilitator from a public relations firm, Headland Consultancy, to chair the meeting and to ensure that all attendees had a chance to ask questions and to share their views.



M&M1 Workshop: 10:00 to 14:00 Tuesday 5 July 2022
Buckinghamshire Council / Heathrow Strategic Planning Group
Molesey Residents Association
Heathrow Association for the Control of Aircraft Noise (HACAN)
Friends of Richmond Park
Teddington Action Group (2)
Richmond Heathrow Campaign
Englefield Green Action Group (2)
Harmondsworth & Sipson Residents Association
London Borough of Hounslow

Table 1: List of M&M1 workshop attendees

3.2 Engagement Material

- 3.2.1 A set of slides was issued to the invited attendees one week before the session with a watermark indicating “slides to be used for workshop discussion.” The slides presented at the workshop are available in *Stakeholder Engagement Appendix B*.
- 3.2.2 The workshop agenda was as follows:
1. Purpose of the workshop
 2. Method: options development
 3. Recap: Design Principles
 4. Break
 5. Metrics: evaluating options against the Design Principles
- 3.2.3 For agenda item 2 (Method), the slides detailed Heathrow’s proposed method for developing a CLOO, including the generation and analysis of data to help identify the most suitable locations for flight path options. Stakeholders were then given an opportunity to ask questions, to clarify their understanding and to challenge the approach.
- 3.2.4 For agenda item 5 (Metrics), the slides set out the proposed metrics for evaluating options against each of the Design Principles. Each Design Principle was discussed in turn, and stakeholders were invited to suggest additional metrics that might either help to further evaluate the options or to demonstrate the performance of the options in an accessible way.
- 3.2.5 A number of wider issues were raised by stakeholders during the meeting that were not directly relevant to the agenda. Issues that were either outside the control of Heathrow or related to future stages of the ACP were noted on a flipchart which was referred to as the ‘car park’. The purpose was to capture these issues for future discussion without losing focus on the workshop agenda. The ‘car park’ included:
- consideration of the use of the lowest observed adverse effect level (LOAEL);
 - limitations of the DfT’s Transport Appraisal Guidance (TAG) tool;



- definitions of overflight; and,
- collaborative community engagement with other airports, to include consideration of the cumulative impacts of overflight.

3.2.6 These issues will be returned to at the appropriate points in the process.

3.3 *Workshop Outcome*

3.3.1 The independent facilitator was tasked with drafting an independent meeting note summarising the discussion, which was issued to all attendees after the workshop. Some stakeholders emailed Heathrow and/or Headland with their own notes from the session and these were incorporated into the meeting note where relevant. Once revised, the meeting note was re-issued to all attendees and included a list of issues that Heathrow had committed to respond to at later stages of the ACP. The meeting notes, revised meeting notes and associated correspondence are available in *Stakeholder Engagement Appendix B*.

3.3.2 The workshop helped to refine Heathrow's approach to the methods and metrics used in the DPE and IOA. Metrics suggested by stakeholders were included in the IOA as supplementary metrics to help stakeholders better understand some of the potential impacts of the options.

These are:

- Noise events above 60dB and 65dB L_{Amax} (N65 and N60)
- Change in noise exposure
- Number of overflights, with rates up to 50 times a day
- Consideration World Health Organisation guidance on noise values
- Identifying options that may impact Richmond Park

3.3.3 Further explanation of these metrics and how they have been applied in Heathrow's IOA is detailed in the *Step 2B Initial Options Appraisal* document.

3.3.4 Heathrow also used feedback from the workshop to ensure that later engagement material was accessible and relevant to stakeholders.



4. **COMPREHENSIVE LIST OF OPTIONS ENGAGEMENT WORKSHOPS**

4.1 **Method of Engagement**

4.1.1 CAP1616 requires sponsors to undertake stakeholder engagement on the comprehensive list of flight path options with “the same stakeholders engaged on Design Principles at Step 1B.”² The purpose of this engagement was to ensure, as far as possible, that stakeholders are satisfied that “*the design options are aligned with the Design Principles and that the change sponsor has properly understood and accounted for stakeholder concerns specifically related to the design options.*”³ To meet this objective, Heathrow conducted workshops with community stakeholder representatives and industry stakeholder representatives engaged at Stage 1, and presented the developed CLOO and associated concepts for comment and feedback.

4.1.2 Following the workshops, Heathrow provided a feedback form and a response period of four weeks, asking stakeholders:

- how satisfied they were that the list of options aligned with the Design Principles developed at Stage 1;
- if they had any feedback on Heathrow’s potential concepts for:
 - delivering respite;
 - Heathrow’s approach to night flights;
 - Heathrow’s approach to noise efficient operations; and,
- if they had any feedback on Heathrow’s overall approach to developing flight path options.

4.1.3 Heathrow also conducted public focus groups and schools focus groups in areas local to the airport as conducted at Stage 1.

4.2 **Engagement Material**

4.2.0 A full summary of the CLOO engagement workshops, including lists of all stakeholders engaged, engagement material shared and feedback received, is available in Section 4 of Heathrow’s *Step 2A Options Development* document, with supplementary information available in *Step 2A Appendices A to F*.

² CAP1616, Para 125

³ CAP1616, Paras 125 and 128



4.3 Workshop Outcome

- 4.3.1 All CLOO feedback forms and associated email correspondence are available in the *Step 2A Appendices A to F*. CLOO feedback has also been summarised by Heathrow in the *Step 2A Options Development* document Section 4.7.
- 4.3.2 The comprehensive nature of Heathrow's options resulted in only two suggestions for potential changes or additions to the options in the CLOO. Heathrow will continue to consider feedback related to other aspects of the ACP at future stages.

4.4 Awareness Campaign

- 4.4.1 Heathrow's Stage 2 stakeholder engagement included a public awareness campaign, building on the campaign that ran during Stage 1. The social media campaign was advertised on Facebook and Instagram to spread greater awareness of Heathrow's ACP, targeting all adults within a 55km radius of the airport. The campaign included the video created during Stage 1 to introduce Heathrow's airspace modernisation project. The advertising provided a link to take people directly to the airspace modernisation webpages on Heathrow's public website to learn more about the project. The webpages feature a feedback form, which can be used to contact the Airspace Team with comments or queries about the project. No contact regarding the campaign was received.
- 4.4.2 The campaign was live between 4 and 21 November 2022 to coincide with the CLOO engagement workshop dates. Overall, the campaign content was seen by over 15 million people across Facebook and Instagram, with around 14,500 users engaging with the content by clicking on a post to watch the video, or to 'learn more' by being directed to the website. The most engaged audience were males aged 25 to 34, with a third of the overall 'reach' of the campaign being those in the 25- to 34-year-old category.



5. METHODS AND METRICS WORKSHOP 2

5.1 Method of Engagement

5.1.1 The first 'Methods and Metrics workshop' (M&M1) took place in July 2022 with some of Heathrow's most highly engaged and technically minded community and environmental stakeholders. The workshop was well received by attendees, who generally commented positively on Heathrow's transparent and collaborative approach. Therefore, Heathrow invited the same stakeholders to a second 'Methods and Metrics workshop' (M&M2) held in January 2023 to continue the two-way dialogue on Heathrow's approach to assessing options in the IOA.

5.1.2 The purpose of M&M2 was to:

- continue transparency with key stakeholders throughout Stage 2;
- summarise Heathrow's proposed approach to the IOA, showing how previous stakeholder input has been reflected in the developing methodology and metrics;
- support the smooth running of the DPE and IOA wider engagement sessions by addressing technically minded stakeholders' concerns on methods and metrics in a smaller group setting, enabling technical discussions that might not be accessible to the wider range of Heathrow stakeholders; and,
- provide stakeholders with the opportunity to ask questions and provide feedback on the approach before the technical work was undertaken.

5.1.3 Heathrow invited the same stakeholder representatives that responded to the previous M&M1 workshop invitation, as well as extending the invitation to HSPG. In total, 14 stakeholders attended the workshop at the Holiday Inn London – Heathrow Bath Road on Wednesday 25 January 2023 (10:00 to 13:00).

5.1.4 There were 10 Heathrow representatives who joined the workshop from the Airspace, Communities, Carbon and Noise functions of the business. The Heathrow team was joined by the same independent facilitator from Headland that chaired the six CLOO community workshops and M&M1 workshop. The independent facilitator's role was to ensure that all attendees had a chance to ask questions and to share their views. The full attendance list is shown in Table 2 below and the associated correspondence is available in *Stakeholder Engagement Appendix B*.

5.1.5 Heathrow extended the invitation to representatives from Westbourne Park Road East Resident's Association, Clean Air Bayswater, and Paddington Residents Active Concern on Transport, who requested greater involvement in technical discussions following the CLOO workshops. These community groups were unavailable to attend the in-person workshop, so Heathrow offered a separate session on Friday 10 February 2023 to discuss the workshop material with four representatives from the groups. The meeting attendance list and the associated correspondence is available in *Stakeholder Engagement Appendix B*.



M&M2 Workshop: 10:00 to 13:00 Wednesday 25 January 2023
Buckinghamshire Council / Heathrow Strategic Planning Group
Molesey Residents Association
Heathrow Association for the Control of Aircraft Noise (HACAN)
Friends of Richmond Park (2)
Teddington Action Group (2)
Richmond Heathrow Campaign
Englefield Green Action Group (2)
Harmondsworth & Sipson Residents Association
London Borough of Hounslow
Spelthorne Borough Council / Heathrow Strategic Planning Group
Ealing Council / Heathrow Strategic Planning Group
Royal Borough of Windsor and Maidenhead

Table 2: List of M&M2 workshop attendees

5.2 Engagement Material

- 5.2.1 A set of slides was prepared for the M&M2 workshop, and these were issued to the invited attendees two days before the session. The presentation is available in *Stakeholder Engagement Appendix B*.
- 5.2.2 The material summarised the proposed methodology and metrics for the IOA and highlighted where stakeholder requested metrics had been considered. The workshop agenda was as follows:
1. Purpose of the workshop
 2. Update: Heathrow's Plan for Stage 2
 3. Update: Design Principle Evaluation
 4. CAP1616 Requirements: Initial Options Appraisal
 5. Recap: Previous Methods & Metrics workshop
 6. Initial Options Appraisal: Overview of Approach
 7. IOA: Noise
 8. Break
 9. IOA: Carbon
 10. IOA: Air Quality
 11. IOA: Biodiversity
 12. IOA: Tranquillity
 13. IOA: Appraisal of Concepts



- 5.2.3 Agenda items 1 to 4 provided context for stakeholders around Heathrow’s progress with the DPE, and the purpose of the IOA to focus the discussion.
- 5.2.4 For agenda item 5 the slides included Heathrow’s response to issues that were placed in the ‘car park’ at M&M1, and how stakeholders’ suggestions had since been considered in the developing ACP. These are shown in Figure 2, taken from the M&M2 presentation contained in *Stakeholder Engagement Appendix B*. These issues will be returned to at the appropriate points in the process.

"Car Park" Issue:	Heathrow Response:
Consider cumulative impacts with other airports	Ongoing bi-laterals with surrounding airports. ACOG coordination planned for post-Stage 2.
Use of LOAEL	Heathrow is including secondary noise metrics (detail in this workshop) in addition to LOAEL
Use of overflight cones to describe noise impacts	Heathrow to include a suite of noise metrics in addition to overflight cones
Government guidance on PBN	Raised at bi-lateral with DfT : Public Consultation expected in 2023
Suitability of WebTAG /TAG	Heathrow will work with TAG so long as it remains Government policy
Health assessment	Still under consideration as a Stage 3 activity
Air quality	Heathrow to provide rationale for approach to air quality assessment

Outcomes from the first Methods & Metrics workshop include:

- Inclusion of event-based noise metrics (N60 and N65) in the Initial Options Appraisal (IOA);
- Modelling below the LOAEL (Lowest Observed Adverse Effect Level) to a value more consistent with WHO guidance; and
- Having consideration for parks and gardens within the IOA.

Figure 2: “Car Park” issues raised at M&M1 and presented back to stakeholders in M&M2

- 5.2.5 For agenda item 6, the slides detailed Heathrow’s proposed method for developing the Initial Options Appraisal at Step 2B, including an explanation of any assumptions or limitations in place. Stakeholders were then given an opportunity to ask questions, clarify their understanding and challenge the approach.
- 5.2.6 For agenda items 7 to 12, the slides set out the proposed metrics for evaluating options in the IOA against noise, carbon, air quality, biodiversity, and tranquillity. Each metric was discussed in turn, and split into primary metrics, secondary metrics, and the stakeholder requested metrics from M&M1. The workshop concluded with agenda item 13 reminding stakeholders that additional work was ongoing to assess operational concepts associated with the provision of respite, and with the possible dispersion of future Performance Based Navigation (PBN) routes.

5.3 Workshop Outcome

- 5.3.1 A meeting note was produced by Heathrow, verified by the independent facilitator, and issued to all those invited, regardless of whether they attended. One stakeholder group emailed Heathrow with its own notes from the session, and these were incorporated into the meeting note where relevant. A revised version of the note was then re-issued to all. The meeting note and associated correspondence are available in *Stakeholder Engagement Appendix B*.
- 5.3.2 The workshop helped to refine Heathrow’s approach to developing the IOA and reassured stakeholders that their suggestions on methods and metrics were being reflected in the approach taken towards the IOA.



6. **STEP 2A FEEDBACK AND DESIGN PRINCIPLE EVALUATION UPDATE**

6.1 **Method of Engagement**

6.1.1 Heathrow hosted a series of online sessions in March 2023, following completion of the DPE. These sessions updated stakeholders on Heathrow's progress with the ACP, focusing on the approach taken to the DPE and providing the opportunity to comment and to ask clarification questions.

6.1.2 The DPE is a high-level assessment of how well the CLOO has responded to the Design Principles that were developed with stakeholders during Stage 1. All industry and non-industry representatives invited to the CLOO workshops at Step 2A in November 2022 were invited to a DPE Update Session. Heathrow asked stakeholders to sign up to a session using a Microsoft Forms link. The purpose of the sessions was:

- for Heathrow to share the feedback received from the Step 2A engagement on the CLOO;
- for Heathrow to explain the approach taken to the DPE, and to share a summary of the results; and,
- for stakeholders to ask questions and to share their views on Heathrow's approach to the DPE.

6.1.3 Heathrow provided three non-industry online sessions and four industry online sessions. For the non-industry sessions, the Heathrow team was joined by the same independent facilitator from Headland that chaired the previous workshops. The independent facilitator's role was to ensure that all attendees had a chance to ask questions and to share their views. The invitations and record of attendance at the sessions are available in *Stakeholder Engagement Appendix C*.

6.1.4 Table 3 below shows the community and environmental stakeholder representatives who attended the non-industry online sessions.



Session 1: 09:30 to 11:30 Wed 22 Mar 2023	Session 2: 18:30 to 20:30 Thu 23 Mar 2023	Session 3: 13:30 to 15:30 Mon 27 Mar 2023
National Trust	Hounslow Borough Friends of the Earth	Buckinghamshire Council
Chilterns Conservation Board	Friends of Richmond Park	Mole Valley District Council
Airspace Change Organising Group (ACOG)	Richmond Heathrow Campaign	Englefield Green Action Group (EGAG)
CPRE Oxfordshire	The Windlesham Society	Spelthorne Borough Council
Friends of Richmond Park	Englefield Green Action Group (EGAG)	Forest Hill Society
Sevenoaks District Council	Royal Borough of Windsor and Maidenhead Council (RBWM)	Heathrow Association for the Control of Aircraft Noise (HACAN)
Chiltern Society	Chilterns Conservation Board	Molesey Residents Association
Bromley Council	Surrey County Council	Environment Agency (2)
Local Authorities Aircraft Noise Council (LAANC) / Richmond and Wandsworth Council	Communities Against Gatwick Noise Emissions (CAGNE)	Westbourne Park Road East Resident's Association (WPRERA)
London Borough of Southwark	Plane Hell Action	Hammersmith and Fulham Council
Local Resident Walton-on-Thames, Surrey (2) ⁴	Teddington Action Group (TAG) (2)	The Royal Parks (2)
London Borough of Ealing / Heathrow Strategic Planning Group (HSPG)	Harmondsworth and Sipson Residents Association (HASRA)	Surrey County Council
	Clean Air Bayswater	Friends of Richmond Park (2)
	Environment Agency	Reigate and Banstead Borough Council
	Watford Borough Council	Slough Borough Council
	Noise and Airspace Community Forum (NACF), Independent Chair	The Holly Lodge Centre
		London Borough of Bexley
		London Borough of Hackney
		Chiltern Society

Table 3: List of non-industry session attendees

6.1.5 Table 4 below shows the stakeholder representatives who attended the industry online sessions.

⁴ Where there was more than one representative from an organisation attending a session, this has been represented by the number in brackets E.g. (2) for two attendees.



Session 1: 09:00 to 10:30 Mon 20 Mar 2023	Session 2: 16:00 to 17:30 Mon 20 Mar 2023	Session 3: 09:00 to 10:30 Mon 27 Mar 2023	Session 4: 16:00 to 17:30 Mon 27 Mar 2023
Farnborough Airport	Stansted Airport	National Air Traffic Services (NATS) EN-Route (NERL)	Delta Airlines
Gatwick Airport		British Airways	British Airways (2)
Blackbushe Airport Ltd		RAF Northolt (2)	Southend Airport
Future Aviation Industry Working Group on Airspace Integration (FAIWG-AI)		Airspace Change Organising Group (ACOG)	British Airlines Pilots Association (BALPA)
Ministry of Defence – Defence Airspace and Air Traffic Management (MoD DAATM)		Lufthansa Group (Swiss)	American Airlines (2)
		Virgin Atlantic Airways	
		Luton Airport	
		National Air Traffic Services (NATS) (2)	

Table 4: List of industry session attendees

6.2 Engagement Material

6.2.1 Heathrow used a slide pack to share a summary of the feedback that had been received following the previous CLOO workshops in November 2022, and to explain the approach to the DPE and to share a summary of the results. Stakeholders were provided with the opportunity to ask questions throughout the sessions. Following the sessions, Heathrow emailed all invited stakeholders (whether they attended a session or not) and those engaged by email only with the below items:

- the slide pack presented at the sessions including:
 - a summary of the key feedback received at Step 2A and Heathrow’s response
 - Heathrow’s approach to the DPE and a summary of the DPE results
 - Appendix 1: Glossary
 - Appendix 2: List of stakeholders engaged at Stage 2
 - Appendix 3: The DPE methodology for each Design Principle
- a technical appendix with the full set of options by Design Principle shown on maps, and the DPE summary results for each option:
 - Appendix 4: Maps of the Options; and,
 - Appendix 5: DPE Summary Tables.

6.2.2 The presentation and technical appendix are available in *Stakeholder Engagement Appendix C*.



- 6.2.3 Pre-reading for the stakeholders was deemed unnecessary as the introductory slides detailed all background information for Heathrow to talk through in the session. The workshop agenda was:
1. Purpose of the workshop
 2. Recap
 3. Summary of stakeholder feedback on the CLOO
 4. DPE:
 - a. CAP1616 Requirements
 - b. Heathrow's Approach
 - c. High-Level Summary and ObservationsBreak
 - d. Evaluation Methodology
 5. Next Steps
- 6.2.4 Agenda items 1 and 2 provided context for stakeholders around Heathrow's progress throughout the CAA's CAP1616 process, including the requirement for sponsors to produce a DPE at Step 2A. The slides included a detailed recap of the work completed to date in Step 2A around developing the CLOO and listed the stakeholder groups that had formally submitted their feedback.
- 6.2.5 For agenda item 3, the slides set out that the feedback on the CLOO had been categorised into six key themes:
- A. Feedback on the CLOO
 - B. Feedback on the method used to create the options
 - C. Feedback on concepts: Respite
 - D. Feedback on concepts: Night flights
 - E. Feedback on concepts: Noise efficient operational practices
 - F. General clarification questions
- 6.2.6 The key pieces of stakeholder feedback for each theme were discussed in turn, together with Heathrow's response. All CLOO feedback forms and associated email correspondence are available in the *Step 2A Appendices A to F*. CLOO feedback has also been summarised by Heathrow in the *Step 2A Options Development* document Section 4.7. Heathrow will continue to consider feedback related to other aspects of the ACP at future stages.
- 6.2.7 For agenda item 4 (DPE), an overview of CAP1616 guidance relating to DPE was described before Heathrow then presented the approach taken to the DPE, including challenges and limitations, and a high-level summary of the results. The slides described the methodology, explaining how the options were evaluated using a percentiles approach. Design Principle 2 and Design Principle 4 were used as examples to show the methodology and design criteria, and an illustrative summary of the DPE results. Stakeholders were given



opportunities to ask questions, to clarify their understanding and to challenge the approach throughout the session. The session concluded with agenda item 5 welcoming stakeholder feedback on the DPE.

- 6.2.8 To ensure stakeholders were aware of the indicative nature of Heathrow's flight path options at this early stage of the process, each map and data table in the presentation had a disclaimer stating that the options are subject to change throughout the ACP process.

6.3 Engagement Session Outcome

- 6.3.1 A meeting note was produced by Heathrow and verified by the independent facilitator. One stakeholder group emailed Heathrow and Headland with its own notes from the session, and these were incorporated into the meeting note where relevant. The meeting note and associated correspondence are available in *Stakeholder Engagement Appendix C*.
- 6.3.2 Heathrow welcomed stakeholders to send any feedback or clarification questions to the Airspace Team via the airspace@heathrow.com email address stated on the slides, which was also used to distribute the materials. There was a four-week informal feedback period and the only email received was relevant to the meeting note, mentioned above. Heathrow received no written feedback on the DPE session material, although many clarification questions were asked verbally by stakeholders during the sessions. Details of these can be found in the meeting note in *Stakeholder Engagement Appendix C*.



7. INITIAL OPTIONS APPRAISAL INFORM SESSIONS

7.1 Method of Engagement

7.1.1 The Initial Options Appraisal (IOA) is a qualitative and quantitative assessment of the longlist of options to provide an indication of how the options perform against the design criteria, and to enable the shortlisting of options prior to Stage 3.

7.1.2 Heathrow hosted a series of online sessions at the end of June and in early July 2023, following completion of the Step 2B IOA related technical work. These sessions provided stakeholders with an update on Heathrow's ACP at the end of Stage 2. Stakeholders were informed on Heathrow's approach to the IOA and to the shortlisting of options. The sessions were intended to provide the opportunity for stakeholders to ask questions and to help them navigate the IOA material once it is published on the CAA's Airspace Change Portal. Formal stakeholder feedback was not requested but the Heathrow Airspace Team's email address was provided, and stakeholders were invited to provide feedback or queries if they wished to. All industry and non-industry representatives that were invited to the Step 2A CLOO workshops in November 2022 and the DPE update sessions in March 2023 were invited to an IOA session. Heathrow asked stakeholders to sign up to a session using a Microsoft Forms link. The purpose of the sessions was:

- for Heathrow to explain the approach taken to the IOA, and to share an example dashboard of the results;
- for Heathrow to explain the approach taken to the shortlisting process and to provide the results;
- for Heathrow to share an update on the work assessing concepts for providing respite from noise; and,
- for stakeholders to ask questions and to share their views.

7.1.3 Heathrow provided three non-industry online sessions and four industry online sessions. For the non-industry sessions, the Heathrow team was joined by the same independent facilitator from Headland that chaired the previous workshops. The independent facilitator's role was to ensure that all attendees had a chance to ask questions and to share their views. The first non-industry session was a technical session for a smaller group made up of technically minded stakeholders who have an interest in discussing Heathrow's approach to appraisal at a greater level of detail. The stakeholders that were invited to both Methods and Metrics workshops were invited to join this technical session on 27 June 2023, and the remaining community, local authority and environmental stakeholders were invited to the two subsequent sessions on 29 June and 4 July 2023. This ensured the degree of technical information discussed was appropriate and accessible to stakeholders attending the sessions.

7.1.4 The record of attendance at the sessions is available below. The invitations and associated email correspondence are available in *Stakeholder Engagement Appendix D*.

7.1.5 Table 5 below shows the community and environmental stakeholder representatives who attended the non-industry online sessions.



Session 1 (Technical Session): 10:00 to 12:00 Tue 27 June 2023	Session 2: 13:30 to 15:30 Thu 29 June 2023	Session 3: 18:30 to 20:30 Tue 4 July 2023
Buckinghamshire Council	Airspace Change Organising Group (ACOG)	Central Bedfordshire Council
Englefield Green Action Group (EGAG) (2)	Buckinghamshire Council	Chiltern Society
Friends of Richmond Park (3)	Campaign Against Gatwick Noise Emissions (CAGNE)	Friends of Richmond Park (2)
Harmondsworth and Sipson Residents Association (HASRA)	CPRE Oxfordshire	London Borough of Merton
Heathrow Strategic Planning Group (HSPG)	Department for Transport (DfT)	Lower Sunbury Residents' Association
Molesey Residents Association (MRA)	Ealing Aircraft Noise Action Group	Mole Valley District Council
Richmond Heathrow Campaign (RHC)	Forest Hill Society	Molesey Residents Association
Teddington Action Group (TAG)	Friends of Richmond Park	Plane Hell Action Southeast
Westbourne Park Road East Resident's Association (WPRERA) (2)	Hertfordshire County Council	Reigate and Banstead Borough Council
	Local Resident, Walton-on-Thames, Surrey	South Downs National Park Authority
	London Borough of Bromley	Surrey County Council
	London Borough of Lewisham	The Royal Parks
	London Borough of Southwark	
	National Trust	
	Newham Council	
	Royal Borough of Windsor and Maidenhead	
	Sevenoaks District Council	
	Spelthorne Borough Council	
	St Albans City and District Council	
	The Council for the Independent Scrutiny of Heathrow Airport (CISHA)	
	The Royal Parks	

Table 5: List of non-industry session attendees

7.1.6 Table 6 below shows the industry stakeholder representatives who attended the industry online sessions.



Session 1: 09:00 to 10:30 Mon 3 July 2023	Session 2: 16:00 to 17:30 Mon 3 July 2023	Session 3: 09:00 to 10:30 Wed 5 July 2023	Session 4: 16:00 to 17:30 Wed 5 July 2023
Airspace Change Organising Group (3)	British Airlines Pilots Association (BALPA)	Airspace Change Organising Group	Airspace Change Organising Group (2)
American Airlines	British Airways	Biggin Hill Airport	American Airlines
Blackbushe Airport	Delta	British Airways (2)	
Denham Aerodrome	NATS (2)	Delta	
Fairoaks Airport	Southend Airport	Farnborough Airport	
Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)		Future Aviation Industry Working Group on Airspace Integration (FAIWG-AI)	
NATS		Gatwick Airport	
Southampton Airport (2)		Luton Airport	
Stansted Airport		NATS (NERL)	
		RAF Northolt	
		Virgin Atlantic	

Table 6: List of industry session attendees

7.1.7 A separate session was held with a representative from HACAN, as they were unavailable to attend the scheduled sessions. Heathrow met with HACAN remotely on 19th July 2023 to discuss the IOA engagement material and answer any questions. Heathrow offered a similar opportunity to a representative from TAG.

7.2 Engagement Material

7.2.1 During the sessions Heathrow used a presentation to explain the approach taken to the IOA and the shortlisting of options, and shared a summary of the results, providing stakeholders with the opportunity to ask questions. Following the sessions, Heathrow emailed all invited stakeholders (whether they attended a session or not) and those engaged with by email only with the slide pack presented at the sessions, including:

- Heathrow’s approach to the IOA and a dashboard showing an example of the IOA for one option;
- Heathrow’s approach to shortlisting options and the full set of results;
- A summary of Heathrow’s work on sensitivity testing for the respite concepts;
- Appendix 1: Glossary; and,
- Appendix 2: Shortlisting outcome maps.

7.2.2 The presentation is available in *Stakeholder Engagement Appendix D*. Pre-reading for the stakeholders was deemed not necessary as the introductory slides detailed all background information for Heathrow to talk through in the session. The workshop agenda was:

1. Purpose of the workshop



2. Recap
3. Initial Options Appraisal:
 - a. CAP1616 Requirements
 - b. Heathrow's Approach to the IOA
4. Heathrow's Approach to Shortlisting Options
5. Update on Respite Concepts
6. Next Steps

- 7.2.3 Agenda items 1 and 2 provided context for stakeholders around Heathrow's progress throughout the CAP1616 process, including the requirement for sponsors to produce an IOA at Step 2B. The introductory slides also explained what stakeholders could expect to view on the CAA Airspace Change Portal, and the timescales for Heathrow's Stage 2 submission.
- 7.2.4 For agenda item 3, the slides cited the CAP1616 guidance for carrying out an IOA. Heathrow presented the approach taken to the IOA, and dashboards showing the results for one of the options. It was made clear in the session that the dashboards showing the IOA for all options would be made available on the Airspace Change Portal after the Stage 2 submission to the CAA. Stakeholders were given regular opportunities throughout the presentation to ask questions, clarify their understanding and comment on Heathrow's approach.
- 7.2.5 Agenda item 4 detailed Heathrow's methodology for the shortlisting of options using the DPE and IOA. Heathrow's approach is guided by CAP1616 and the Government's Air Navigation Guidance, and the process for shortlisting PBN Departure options and PBN Arrival options was illustrated through a flowchart. A worked example was presented for a set of PBN Departure options to show how the process had been applied in practice, describing at which stage the options were discontinued. The section concluded with summary tables explaining the rationale for shortlisting or discontinuing each option in the IOA, with maps to help stakeholders visualise the outcome. Given the complexity of information, stakeholders were given regular opportunities to ask questions and clarify their understanding.
- 7.2.6 For agenda item 5 a brief update was provided on Heathrow's conceptual work, which tested four operational concepts to understand the potential to provide relief or respite from aircraft noise to overflowed areas. This included a summary of each concept and the initial findings. It was made clear that the four concepts will be revisited and refined at Stage 3 to consider how they might work within a systems option design. The session concluded with agenda item 7 summarising the next steps for stakeholder engagement in Heathrow's ACP.
- 7.2.7 To ensure stakeholders were aware of the indicative nature of Heathrow's flight path options at this early stage in the process, each map and data table in the presentation had a disclaimer stating that the options are subject to change throughout the ACP process.



7.3 Engagement Session Outcome

- 7.3.1 A meeting note was produced by Heathrow and verified by the independent facilitator. The meeting note and associated correspondence are available in *Stakeholder Engagement Appendix D*.
- 7.3.2 Heathrow invited stakeholders to send any feedback or clarification questions to the Airspace Team via the airspace@heathrow.com email address. Some clarification questions were received from stakeholders relating to the material presented in the sessions and confirming Heathrow's Stage 2 submission date.
- 7.3.3 Following the engagement sessions, and pre-submission of the Stage 2 documentation, Heathrow conducted a final internal review of all Stage 2 work. During this review, it was noted that the shortlisting approach applied to the PBN Arrival options was not entirely consistent and therefore the decision was taken to reinstate an option that Heathrow had proposed for discontinuation during the engagement sessions.
- 7.3.4 Heathrow explained in the sessions that six 'tests' had been applied to each option, founded on the altitude-based priorities set out in the government's Air Navigation Guidance 2017. In the sessions Heathrow proposed that 19 options would be discontinued. This included PBN Arrival Option I to Runway 27R on the basis of increased overflight of AONBs and Richmond Park (Tests 4 and 5). However, on further review Heathrow identified other options that have a similar level of overflight of both AONBs and Richmond Park and took the decision not to discontinue options on this basis for the following reasons:
- a) As described in Section **Error! Reference source not found.** of the *Step 2B Initial Options Appraisal* document, the IOA results for overflight of AONBs are likely to be overstated and Heathrow expects to see a reduction in areas of AONBs and National Parks overflowed once assumptions around future use of CCO and CDO have been applied at Stage 3;
 - b) Heathrow wanted to ensure a consistent approach was taken to the discontinuation of options so did not wish to discontinue an option that had similar results to a shortlisted option;
 - c) When reviewing the Test 4 and Test 5 results, Heathrow decided it would be more appropriate to address these local issues when developing system options at the beginning of Stage 3. The compilation of system options at Stage 3 will inevitably result in some refinement of the routes and Heathrow will seek to reduce potential overflight and/or impacts to AONBs, National Parks and Richmond Park at this stage of the process; and
 - d) CAP1616 recognises that *"it will not always be practical to completely avoid overflying National Parks or AONBs – and there are no legislative requirements to do so, as this would be impractical"*⁵.
- 7.3.5 Heathrow therefore took the difficult decision to reinstate Option I and to include it in the shortlisted options.

⁵ CAP1616 B78



8. **ADDITIONAL STAKEHOLDER ENGAGEMENT**

8.1 **Airspace Modernisation Website**

8.1.1 The airspace modernisation webpages on Heathrow's website were updated to explain the work taking place at Stage 2. The website was used to communicate information on Heathrow's ACP and to ensure that interested members of the public can find up-to-date and accurate information on the project.

8.1.2 A feedback form was placed on the website at Stage 1 which allows any stakeholder with an interest to share their views on the ACP or to seek clarification. The feedback form remained on the website during Stage 2, to allow interested parties to contact the Airspace Team. Over the course of Stage 2, many feedback forms were received via this method, however these were not deemed relevant to the ACP. The Heathrow Community Relations Team email address (***noise@heathrow.com***) was also available on the website, so that members of the public could initiate two-way engagement more easily than via a feedback form. The use of both a feedback form and an email address is consistent with Heathrow's approach for managing noise complaints.

8.1.3 An updated video was produced to replace the communications video on the website created for the Stage 1 Awareness Campaign. The purpose of the video was to summarise the key information on Heathrow's progress through the ACP in an accessible and consistent way. The updated video was three minutes in duration and adopted imagery and iconography from the previous video to help stakeholders follow the development of Heathrow's ACP more easily. The video included:

- an introduction to the Government's Airspace Modernisation Strategy;
- a reminder of the CAA's CAP1616 process;
- Heathrow's progress to date, including a recap of the Design Principles developed with stakeholders at Stage 1;
- Heathrow's approach to developing the CLOO in alignment with the Design Principles; and,
- next steps for future engagement and consultation.

8.1.4 This video introduced icons for each of the 12 Design Principles, designed in line with Heathrow's branding. These icons were also used in the DPE and the IOA engagement material to help stakeholders more easily recognise the Design Principles and ensure they maintain their identity throughout the ACP as options evolve through phases of evaluation and appraisal.

8.2 **Stakeholder Engagement Records**

8.2.1 Following the CLOO workshops, three community stakeholder groups requested additional engagement with Heathrow to better understand some of the technical details of the work being undertaken on the ACP. The groups were:

- The Friends of Richmond Park (FRP)



- Teddington Action Group (TAG)
- A group of representatives from Clean Air Bayswater, Westbourne Park Road East Resident's Association (WPRERA), and Paddington Residents Active Concern on Transport (PRACT)

8.2.2 These groups were highly engaged **throughout** Stage 2, and Heathrow felt it was appropriate to organise additional meetings with each group to discuss their questions and concerns in more detail. The meetings took place outside of the wider engagement activities and in a format that was convenient to the stakeholder group.

8.2.3 To support this ongoing engagement activity, Heathrow established Stakeholder Engagement Records (SER) with each group. The SERs are live documents that are updated by both stakeholders and Heathrow following meetings, with issues and queries added by stakeholders when they arise, and a response provided by Heathrow to each. Discussions in meetings were generally guided by the latest SER, with the record then updated following the meeting. Meetings and updates are documented in the revision history on the opening pages of each SER.

8.2.4 The correspondence, meeting attendance and most recent Stakeholder Engagement Record for each group is contained in *Stakeholder Engagement Appendix E*.

8.2.5 The SER approach was effective for the following reasons:

- meetings were structured around key issues on the SER, ensuring that discussions centred around the issues of most interest or concern to the stakeholder group;
- written correspondence with stakeholders was undertaken within the SER to ensure that all issues and responses were documented and tracked in one single document rather than across multiple emails, meeting notes and stakeholder submissions; and,
- issues were discussed in detail and were marked as 'resolved' wherever possible, allowing Heathrow and the stakeholder to document progress in two-way dialogue on Heathrow's ACP.

8.2.6 Heathrow will continue using the SER approach where appropriate in Stage 3.



9. **NEXT STEPS**

9.1 **Stage 2 Submission**

- 9.1.1 During Stage 2 Heathrow developed a Comprehensive List of Options for both departing and arriving flight paths that was evaluated at a high level to understand how the options respond to the Design Principles, and to shortlist options for Stage 3. The mixture of engagement activities undertaken throughout the period allowed Heathrow to test the options with stakeholders and, where appropriate, to refine and develop the approach taken to options development and evaluation to take account of the feedback received.
- 9.1.2 All stakeholders that have been engaged to date will be provided with a link to the information submitted to the CAA as part of Heathrow's Stage 2 Submission. Heathrow will also notify stakeholders of the CAA's Stage 2 Gateway decision. This will ensure that stakeholders remain informed of the development of the ACP at Heathrow, ahead of the full public consultation exercise expected at Stage 3.
- 9.1.3 Heathrow has demonstrated its commitment to ensuring that representatives of potentially affected stakeholders are informed and engaged throughout the ACP so far. At Stage 3, Heathrow will seek to engage a wider range of stakeholders, including all communities within the potentially affected area. Heathrow will prepare a stakeholder engagement plan and timeline for Stage 3, including further engagement with stakeholders engaged at Stage 1 and Stage 2 prior to the full public consultation later in Stage 3.



10. GLOSSARY OF TERMS

Acronym	Term	Description
AAM	Advanced Air Mobility	An air transport system concept that integrates new, transformational aircraft designs and flight technologies into existing and modified airspace operations. This includes electric aircraft (e.g. air taxis) and small unmanned aircraft systems (drones).
ACOG	Airspace Change Organising Group	Established in 2019 at the request of the Department for Transport and the Civil Aviation Authority to coordinate the delivery of key elements of the UK's Airspace Modernisation Strategy. ACOG is a fully independent organisation and is responsible for coordinating airport's individual airspace changes via an Airspace Masterplan.
ACP	Airspace Change Proposal	To carry out any permanent change to the published airspace, the Civil Aviation Authority (CAA) requires the change sponsor to carry out an Airspace Change Proposal in accordance with CAP1616.
	Airspace Change Portal	The CAA's Airspace Change Portal is a publicly accessible website where all ACP sponsors are required to upload information on their ACPs.
	Airspace Change Process	The CAA's airspace change process is known as CAP1616. The process is designed to ensure that the CAA meets modern standards for regulatory decision-making, and is fair, transparent, consistent, and proportionate.
	ACP Sponsor	An organisation that proposes, or sponsors, a change to the airspace design in accordance with the CAA's airspace change process.
ADS-B	Automatic Dependent Surveillance Broadcast	A means by which aircraft can automatically transmit and/or receive data such as identification, position, and additional data, as appropriate in a broadcast mode via a data link.
AIP	Aeronautical Information Publication	A publication which contains details of regulations, procedures, and other information pertinent to the operation of aircraft in the country to which it relates.
	Altitude Based Priorities	Altitude based priorities are a set of rules, incorporated in statutory guidance and used by the CAA. They are designed to endure that potential noise impacts are prioritised over other factors, such as carbon emissions in airspace change proposal up to 7,000 feet above sea level.
AMS	Airspace Modernisation Strategy	The UK Government has tasked the aviation industry to modernise airspace in the whole of the UK. The long-term strategy of the CAA and the Government is called the Airspace Modernisation Strategy (AMS). Its CAA document reference number is CAP1711.



AMSL	Above Mean Sea Level	A measure of the vertical distance of a location in reference to a historic mean sea level taken as a vertical datum.
ANSP	Air Navigation Service Provider	An organisation that provides an air traffic service of managing aircraft in flight or on the manoeuvring area of an airport and which is the legitimate holder of that responsibility.
AONB	Area of Outstanding Natural Beauty	An area of countryside in England, Wales or Northern Ireland that has been designated for protection by the Countryside and Rights of Way Act 2000 (CRoW Act) due to its significant landscape value. The Act protects the land to conserve and enhance its natural beauty.
ATC	Air Traffic Control	The ground-based personnel and equipment concerned with controlling and monitoring air traffic within a particular area.
ATZ	Aerodrome Traffic Zone	An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.
	Baseline	The 'Do Nothing' option/scenario which represents the status quo against which airspace design options are assessed
	Biodiversity	Biodiversity is the variety of all life on Earth including all species of animals and plants. Biodiversity supports the vital benefits humans obtain from the natural environment.
CAA	Civil Aviation Authority	The designated UK Regulator for aviation matters, overseeing and regulating all aspects of civil aviation in the UK. The Secretary of State for Transport placed a statutory duty upon the CAA to have a strategy and plan for modernising airspace.
CAP1616	Civil Aviation Publication 1616	The guidance document setting out the airspace change process regulated by the CAA.
	Capacity	A term used to describe how many aircraft can be accommodated within an airspace area without compromising safety or generating excessive delay.
CAS	Controlled Airspace	Generic term for the airspace in which an air traffic control service is provided as standard. Note that there are different sub classifications of airspace that define the particular air traffic services available in defined classes of controlled airspace.
-	Centreline	The nominal track for a published route.
-	Concentration	Refers to a density of aircraft flight paths over a given location, this generally refers to high density where tracks are not spread out; this is the opposite of dispersal.
CCO	Continuous Climb Operations	An aircraft operating technique facilitated by airspace and procedure design and assisted by appropriate ATC procedures, allowing the execution of a flight profile to be optimised to the performance of aircraft, leading to



		significant economy of fuel and environmental benefits in terms of noise and emissions reduction.
CDO/ CDA	Continuous Descent Operations/ Continuous Descent Approaches	An aircraft operating technique in which an arriving aircraft descends from an optimal position with minimum thrust and avoids level flight to the extent permitted by the safe operation of the aircraft and compliance with published procedures and ATC instructions. Also known as Continuous Descent Approaches.
-	Class D (airspace)	Class D is the classification of airspace which surrounds Heathrow and requires clearance from ATC to operate within it.
	Climb Gradient	The climb gradient is how steeply the aircraft climbs on departure. It is the ratio between distance travelled over the ground and altitude gained and is usually expressed as a percentage.
Coding House	Coding House	Companies which code Instrument Flight Procedures into aircraft navigation databases prior to loading into flight management systems and flown by the aircraft.
CLOO	Comprehensive List of Options	Airspace change sponsors are required to develop a CLOO at Step 2A of the CAP1616 process. The CLOO should include a set of airspace design options that address the Statement of Need and align with the Design Principles set at Stage 1.
-	Conventional navigation	The historic navigation standard where aircraft fly with reference to ground-based radio navigation aids.
-	Conventional route	Routes defined to the conventional navigation standard, i.e. using ground based radio navigation beacons to determine their position.
CTA	Control Area	Controlled airspace extending upwards from a specified limit above the earth. Control Areas are situated above the Aerodrome Traffic Zone (ATZ) and afford protection over a larger area to a specified upper limit.
CTR	Control Zone	Controlled airspace extending upwards from the surface of the earth to a specified upper limit. Aerodrome Control Zones afford protection to aircraft within the immediate vicinity of aerodromes.
dB	Decibels	A unit used to measure the intensity of a sound (or the power level) of an electrical signal by comparing it with a given level on a logarithmic scale.
DER	Departure End of Runway	The last portion of the runway suitable for take-off.
DfT	Department for Transport	A department of the UK Government responsible for the national transport network, under the responsibility of the Secretary of State for Transport.
-	Dispersal	Refers to the density of aircraft flight paths over a given location, and generally refers to lower density – tracks that are spread out; this is opposite of Concentration.



DP	Design Principle	Design Principles encompass the objectives that the airport seeks to achieve through the airspace change. They are set through stakeholder engagement in Stage 1 of the CAP1616 process and guide the airspace designers to create suitable flight path options at Stage 2.
DPE	Design Principle Evaluation	An evaluation of each option against each design principle which forms part of Step 2A of the CAP1616 process.
-	Easterlies	When a runway at Heathrow is operating such that aircraft are taking off and landing in an easterly direction
	Easterly Alternation	A Heathrow project to enable respite during easterly operations.
FASI-S	Future Airspace Strategy Implementation - South	The programme to re-design airspace in the south of the UK. There is also a 'FASI-N' programme for the north of the UK.
-	Final Approach	The final part of an arrival flight path that is directly lined up with the runway.
FL	Flight Level	The Altitude above sea-level in 100 feet units measured according to the international standard atmosphere. A flight level is an indication of pressure, not of altitude. Only above the transition level (which depends on the local QNH but is typically 4000 feet above sea level) are flight levels used to indicate altitude; below the transition level feet are used.
-	Flight-path	The track flown by aircraft when following a route, or when being directed by air traffic control
ft	Feet	The standard measure for vertical distances used in air traffic control.
FOA	Full Options Appraisal	The FOA is required at Step 3A of the CAP1616 process. It requires a quantitative assessment of the shortlist of flight path options.
GA	General Aviation	All civil aviation operations other than scheduled commercial air services and non-scheduled air transport operations for remuneration or hire. The most common type of GA activity is recreational flying by private light aircraft and gliders, but it can range from paragliders and parachutists to microlights, balloons, and private corporate jet flights.
	Holding Stack	Holding stacks are areas of airspace used to orbit aircraft, which allow air traffic controllers to organise the aircraft before they land. Heathrow has four holding stacks located over navigation beacons, which lend them their names. The locations of Heathrow's holding stacks have been the same since the 1960s.



IAP	Instrument Approach Procedure	A series of predetermined manoeuvres by reference to aircraft flight instruments which provides protection from obstacles to a point from which a landing can be completed.
ICAO	International Civil Aviation Organisation	An agency of the United Nations that coordinates the principles and techniques of international air navigation.
IFP	Instrument Flight Procedures	A published procedure used by aircraft flying in accordance with the instrument flight rules, which is designed to achieve and maintain an acceptable level of safety in operations and includes an instrument approach procedure, a standard instrument departure, a planned departure route and a standard instrument arrival.
ILS	Instrument Landing System	An ILS operates as a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals to enable a safe landing including during poor visibility and adverse weather.
IOA	Initial Options Appraisal	A qualitative appraisal of an option against a baseline 'Do Nothing' scenario, as required at Step 2B of CAP1616
kts	knots	A term for measuring speed for aircraft, defined as one nautical mile per hour.
LAeq		The most common international measure of noise, meaning, 'equivalent continuous sound level'. This is a measurement of sound energy over a period of time.
LAeq 16h		The A-weighted Leq measured over the 16 busiest daytime hours (0700-2300) is the normal time-period used to develop the Airport Noise Contours for day-time operations.
LAeq 8h		The A-weighted Leq measured over the 8 night-time hours (2300-0700) is the normal time-period used to develop the Airport Noise Contours for night-time operations.
-	Lower Airspace	Airspace in the general vicinity of the airport containing arrival and departure routes below 7,000 feet. Airports have the primary accountability for the design of this airspace, as its design and operation is largely dictated by local noise requirements, airport capacity and efficiency.
LFA	Local Flying Areas	Volumes of airspace surrounding airfields and the London Heliport within the London CTR.
LTMA	London Terminal Manoeuvring Area	See TMA.



NADP 1/2	Noise Abatement Departure Procedures 1/2	A noise abatement departure procedure defines the height at which the flight crew will reduce engine power after take-off and the height at which acceleration from the take-off speed commences. The balance between how much energy is put into gaining altitude and speed, and at what altitudes power reduction and acceleration are initiated, and in what order, impacts the noise footprint of the aircraft. ICAO guidance provides two examples, NADP1 and NADP2.
NATS (ATC)		NATS ATC is the air navigation service provider at Heathrow under commercial contract for the aerodrome control provision.
NATS NERL		NATS NERL is the UK's licenced air traffic service provider for the en-route airspace (upper network) that connects airports with each other, and with the airspace of neighbouring states.
nm	Nautical Mile	Aviation measures horizontal flight navigation distances in nautical miles. One nautical mile (nm) is 1,852 metres. One road mile ('statute mile') is 1,609 metres, making a nautical mile about 15% longer than a statute mile.
-	Network Airspace / Upper network	En-route airspace above 7,000 feet in which NATS has accountability for safe and efficient air traffic services for aircraft travelling between UK airports and the airspace of neighbouring states.
NPR	Noise Preferential Route	Noise abatement corridors set by the DfT, which extend 1.5km either side of the SID route centreline up to 4,000 feet.
NQP	Night Quota Period	The period between 23:30 hours and 06:00 hours
NTK	Noise Track Keeping	A system that monitors and records radar data to monitor aircraft operations and report statistics focused on noise.
	Overflight	The CAA's CAP1498 document sets out a definition of overflight for use in ACPs. The overflight metric enables the number of overflights experienced at locations on the ground to be calculated according to the agreed definition.
PANS OPS	Procedures for Air Navigation Services Aircraft Operations	PANS-OPS is contained in ICAO Document 8168 which sets out the design criteria and rules for instrument flight procedures which include approach and departure procedures.
PBN	Performance Based Navigation	Referred to as PBN, a generic term for modern standards for aircraft navigation capabilities including satellite navigation (as opposed to 'conventional' navigation standards).
QC	Quota Count	The amount of Quota (QC points) assigned to an individual night movement at Heathrow.



RMA	Radar Manoeuvring Area	An ATC operational area articulated as a volume of airspace by the ANSP. It facilitates the close-in radar vectoring by ATC that is required to take the aircraft safely from a holding stack and established onto final approach.
RNAV / RNAV 1	aRea NAVigation	This is a generic term for a particular specification of Performance Based Navigation. The suffix '1' denotes a requirement that aircraft can navigate to with 1nm of the centreline of the route 95% or more of the time. In practice the accuracy is much greater than this.
RNAV Overlay	RNAV Overlay	The use of Flight Management Systems (FMS) and area navigation systems to provide a means for flying a procedure designed for conventional navigation by using RNAV path segments, pending the introduction of permanent PBN procedures
RNP-RF	Required Navigation Performance – Radius to Fix	An advanced navigation specification under the PBN umbrella. The RF means Radius to Fix, where airspace designers can set extremely specific curved paths to a greater accuracy than RNAV1.
RNP-AR	Required Navigation Performance – Authorisation Required	An advanced navigation specification under the PBN umbrella. 'Authorisation Required' refers to aircraft and operators complying with specific airworthiness and operational requirements. RNP-AR allow airspace designers to set extremely specific curved paths to a greater accuracy than RNAV1, these can be designed before and after the Final Approach Fix.
SAC	Special Areas of Conservation	Protected areas in the UK designated under Government environmental regulations. These sites are classified as making a significant contribution to conserving habitats and species identified in the Habitats Directive.
SEL	Sound Exposure Level	Occasional loud noise measure in the UK. An SEL footprint can be created to show the geographical area over which a particular SEL is reached from a single noise event.
-	Separation	Aircraft under Air Traffic Control are kept apart by standard separation distances, as agreed by international safety standards. Participating aircraft are kept apart by at least 3nm or 5nm lateral separation (depending on the air traffic control operation), or 1,000 feet vertical separation.
SID	Standard Instrument Departure	Usually abbreviated to SID; this is a route for departures to follow immediately after take-off.
SME	Subject Matter Expert	Professionals who have advanced knowledge in a specific field.
SoN	Statement of Need	Part of Step 1A of the CAP1616 process, where a change sponsor sets out the issue or opportunity, they are seeking to address via an airspace change proposal.
SoR	Start of Roll	The point on the runway where aircraft begin to start the take-off roll and accelerate for departure.



SPA	Special Protection Areas	Protected areas in the UK for migratory birds and certain particularly threatened birds.
SRO	Single Runway Operations	A runway configuration utilised by Heathrow where both arrivals and departures operate from the same runway, while the other runway is closed. It is predominantly used during periods of low traffic and to facilitate works to the runways, and was used extensively during the Covid-19 pandemic due to low traffic volumes.
SSSI	Sites of Special Scientific Interest	An area that is of particular interest to science due to the rare species of fauna or flora it contains – or important geological or physiological features that may lie in its boundaries. These areas have high conservation value and need to be protected. Natural England is the official authority in England determining which sites have SSSI status.
System Option	System Option	A suite of easterly and westerly departure and arrival flight paths, safely working together.
TA	Transition Altitude	The altitude above sea level at which aircraft change from the use of local barometer derived altitudes to the use of Flight Levels.
-	Tactical Intervention	Air traffic control methods that involve controllers directing aircraft for specific reasons at that particular moment (see Vector).
TEAM	Tactically Enhanced Arrivals Mode	The use of both runways at Heathrow for landing subject to certain criteria being met.
TMA/ LTMA	Terminal Manoeuvring Area (Terminal Airspace)/ London Terminal Manoeuvring Area	An aviation term to describe a designated area of controlled airspace surrounding a major airport or cluster of airports where there is a high volume of traffic. The LTMA is the name given to the airspace that surrounds the major London airports, including Heathrow.
TMZ	Transponder Mandatory Zone	Airspace of defined dimensions where the carriage and operation of transponder equipment is mandatory.
VFR	Visual Flight Rules	Visual Flight Rules (VFR) are the rules that govern the operation of aircraft in Visual Meteorological Conditions (VMC), which are conditions in which flight solely by visual reference is possible.
VMC	Visual Meteorological Conditions	Visual meteorological conditions (VMC) are the meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.
VSA	VFR Significant Area	A volume of airspace which has been identified as being particularly important to VFR operations. A VSA might take the form of a route, a zone, or an area chosen for its particular importance to GA users. These areas do not have any official status but are intended to highlight the importance of a particular area so that future airspace development plans can take account of the GA activity.



-	Vector/Vectoring	An air traffic control method that involves directing aircraft off the established route structure or off their own navigation – ATC instruct the pilot to fly on a given compass heading and at a specific altitude. In a busy tactical environment, these can change quickly. This is done for safety and for efficiency.
-	Westerly operation	When a runway at Heathrow is operating such that aircraft are taking off and landing in a westerly direction.
